RESURGAM
CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Owner's Manual

M SERIES

HYDRO MOBILE

ELEVATING EFFICIENCY

Call us for information:
1-888-484-9376 (US)
(toll free in the United States)
450 589-8100 (Canada)

A0680001-0000
M2_OpMan_v4.2_EN

© 2004 by Hydro Mobile Inc. All rights reserved

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

Technical drawings were prepared using Autodesk Inventor ® 2008. Illustrations were created w 3ds Max®, Autodesk Inventor ® 2008, Adobe® Illustrator CS2® for Windows® and Adobe® version 7.0 for Windows®.

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

This manual may not, in whole or in part, be copied, photocopied, reproduced, translated, or converted to any electronic or machine readable form without prior written consent of Hydro Mobile Inc.

This Hydro Mobile Inc. product is covered and protected by a patent in Canada.
Canada: 1304109

APPAVE certifi cation:
Motorized unit 14' (4,3 m): 0077-760C-4103-07-02-EXT 01 (2006)
Motorized unit 24' (7,3 m): 0077-760C-4103-07-02 (2005)

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 affi liates, 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. **Owner's manual**

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

REVISION LIST

Version	Date	Description
v1.0	April 2002	First edition of Owner's manual
v2.0	May 2002	Addition of forward extension and monorail
v2.1	June 2002	"Long" wallmounts changed for "extensions"
v2.2	Sept 2002	Access and rest platforms
v3.0	Sept 2004	Addition of 14' (4,3 m) unit, split base and training sheets
v3.1	Sept 2004	Modifi cations to weights; various typographical corrections; modifi cation of grease type
v4.0	Sept 2010	Overall revision; inclusion of additional accessories; detailed warranty policy; inclusion of new modular bridge assemblies
v4.1	Oct 2010	Minor corrections
v4.2	Nov 2010	Modifi cations to load capacity charts; minor additions and corrections

GENERAL INFORMATION

Model	HMUM2147-OGA	☐	M2 Series 14' (4,3 m) motorized unit
	HMUM2247-OGA	☐	M2 Series 24, (7,3 m) motorized unit
Motorized unit serial number			
Manufacturing date			

HYDRO MOBILE
www.hydro-mobile.com

125 de l'Industrie
L'Assomption, Quebec, Canada
J5W 2T9

For orders or information:
1-888-484-9376 (US)
(toll free in the United States)
450 589-8100 (Canada)

CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

TABLE OF CONTENTS

General Information

Introduction 4
Warranty 5

Performance and Safety

Performance and safety rules 6

1 – Motorized Unit

Overview 8
List of components included with shipped unit 8
Specifi cations 10
Weight of components 12
Dimensions 14
Positioning
- Minimum bearing surface capacities 16
- Cribbing 17

Setup and confi gurations
- General guidelines 18
- Standard installation (single unit)
  - Pre-installation 19
  - Progressive installation 21
- Multiple units installation 22
- Lifting and moving a motorized unit or setup 23
- Base separation
  - Instructions 27
  - Perpendicular installation 28
  - Parallel installation 30
  - Re-assembly of a separated base 31

2 – Safety Devices

Safety hooks system 32
Fall protection equipment 33

3 – Bridges

Standard bridge 34
Bridge types 34
Bridge setups
- Cantilever bridge
  - Installation 35
- Bearing bridge
  - Installation 37
  - Dismantling 39
- Multi purpose insert bridge (MPI)
  - Bridge link plates (types) 40
  - As forward/back extension 40
  - As cantilever bridge 42
  - As lateral cantilever bridge 43
  - As narrow bearing bridge 44
- Alternate bridge confi gurations
  - Angled setup 45
  - Inside / outside corner setup 46
  - Angled / corner setup capacities and counterweight requirements 46

4 – Power Pack and Operating Components

Motorized unit preparation instructions 48
Engine startup preparation instructions 49
Engine startup procedure 50
Storage of the control post 50
Raising the platform 51
Lowering the platform 52
Maintenance of the cylinder hooks
- Inspection 53
- Replacement of the rubber 53

5 – Masts and Wall Ties

Masts
- Installation 54
- Removal and transport 54

Mast ties
- Installation of mast ties 55
- Mast tie installation schedule 55
- Assembly of extended mast ties 56
- Passing mast ties 56
- Angled mast ties
  - 30-degree mast tie bracket 57
- Plank confi guration diagrams 59
- Mast tie components requirements 61

Wall ties 63

6 – Load Capacities

Changes to the calculation method 64
Load capacity calculation guidelines 64
Warning and legend 64
Single unit setups - evenly distributed
- 14' (4,3 m) motorized unit 65
- 24, (7,3 m) motorized unit 65

Multiple unit setups - evenly distributed
- 14' (4,3 m) motorized units 66
- 24' (7,3 m) motorized units 67

Multi purpose insert bridge (MPI) - 24' (7,3 m) MU
- Lateral cantilever setups 68
- Forward extension setups 69
- Narrow bearing bridge setups 70

7 – Accessories

Outriggers 71
- Planking confi gurations 71
- Guidelines 71
- Top outriggers 72
- Bottom outriggers 72
- Doubled outriggers 73
- Cantilever outrigger supports 74

Universal plank safety support 74
Cross boxes 75
Sliding doors 75
Guardrails
- Standard guardrails 77
- End guardrails 77
- Face guardrail brackets 78
- Adjustable guardrails 79
- Plank-end guardrails 79

Retractable rest platform 80
Wheel set
- On a motorized unit 81
- On a cantilever setup 81
- On a bearing bridge setup 82

Hoist 82
Weather protection 83
Monorail 87

8 – Transport, Storage and Maintenance

Transport and storage
- Transport of the motorized unit 90
- Storage of the motorized unit 90

Maintenance
- General instructions 91
- Hydraulic diagram 92
- Frequent inspection checklist 93
- Periodic inspection checklist 94

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Introduction

Dear owner or user:

Thank you for investing in a Hydro Mobile M2 Series mast climbing wo system (24' / 7,3 m model or 14' / 4,3 m model). The design of this motorized unit refl ects over a decade of continued fi eld 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 effi cient 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 owner's manual and assimilate the information contained herein. Failure to do so could lead to serious injury and/or equipment damage.

These motorized units were 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, these motorized units and their owner's manual comply with US ANSI A92.9-1993 standards, Federal Occupational Safety and Health Administration Standards OSHA 29CFR1926 subpart L; with ISO 16369:2007 and CSA B354.5-07; and with EN 1495, 98/37/CE "directive machine", 89/336/CEE "directive CEM" and ISO 16369:2007.

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. It is also advised to refer to the Honda user's manual included with the motorized unit.

Should you have any questions or concerns, please contact the nearest authorized service center 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 Web site at 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,

Benoît Duplessis, Eng.
President

Vincent Dequoy, Eng.
Vice-President,
Marketing and Sales

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.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Warranty

Warranty period

Hydro Mobile Inc., herein referred to as Hydro Mobile, warrants its new M2 Seri to be free from defect of materials and workmanship for a period of 15 month delivery to the authorized service center.

Hydro Mobile also warrants its new M2 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 service center.

Product registration

The owner of a Hydro Mobile M2 Series unit should register the product with Hydro Mobile by fi lling out and returning the warranty 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 fi tness 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 muffl ers). To have an engine repaired under this warranty, the engine must be brought to an authorized Hydro Mobile service center 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 confi guration 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, modifi cation 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 certifi ed Hydro Mobile technician to be eligible for reimbursement under the warranty.

CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Performance and Safety Rules

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

It is essential that the **installation** and **dismantling** of the M2 Series motorized unit and its related accessories be carried out according to the recommendations of the owner's manual and performed under the supervision of a competent person.

It is also imperative that the **operation** of an M2 Series motorized unit setup be carried out according to the recommendations of the owner's manual and performed by **two** competent persons for each **motorized unit in a setup**.

Operating instructions

1- Prepare a layout plan showing how the mast climb working 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 fl exibility. 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 *Minimum Bearing Surface Capacities* table herein (fi g. 1.18, p. 16). Soil compacting, cribbing or shoring can increase bearing capacity. Contact an 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 M2 Series motorized units. For the use and installation of any such equipment or accessories, contact the service center or the Hydro Mobile technical support team.

7- Never use the motorized unit in a enclosed space due to carbon monoxide emissions or in a place where explosives are stored. It is also recommended not to smoke on the platform.

8- Planks used for planking must be scaffold graded (SPF) and in good condition.

9- IMPORTANT: It is strongly recommended not to use equipment that may generate excessive vibrations or reactions on Hydro Mobile platforms.

10- 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 local regulations. In all cases where workers are exposed to fall hazards, fall protection is required. Installation of all the necessary guardrails is **mandatory**.

11- Unless authorized by Hydro Mobile prior to installation, the platform should only be used on masts whose height does not exceed 250' (76 m). For any confi guration other than those described in this owner's manual, contact the Hydro Mobile technical support team.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Performance and Safety Rules

12- Rely on a licensed engineer for help on special jobs and to a required by local regulation.

13- To ensure work effi ciency, maintain an adequate equipment and pa the job site. Keep equipment in good condition. Refer to maintenance checklists recommended for this motorized unit (see p. 93).

14- After installation, mark off limit areas of the system using fencing, barriers, warning tape and note emergency phone numbers (fi re and police dept.) for quick reference. **Prepare an emergency evacuation plan that is specifi c to the job site and is in accordance with local regulations.**

15- **Never load bridges or motorized units beyond their rated capacities**. Overloading may cause damages to equipment leading to serious injury or death.

16- Contact the service center or Hydro Mobile for service, repair or technical advice. Refer to equipment type and serial number when calling.

17- Each person should access the platform by a staircase, through an opening in the building or by the back of the mast, using the access walkway to reach the platform. The use of the access walkway is **mandatory** to reach the platform by the mast.

18- The use of appropriate fall protection equipment is **mandatory** when using the mast for climbing or descending at heights between 30' (9,1 m) and 69' (21 m) or when modifying plank confi guration. Failure to use fall protection equipment can expose the user to serious injury or death.

19- Only one person at a time may evacuate the platform by climbing down the mast. It is not recommended to evacuate the platform by climbing down the mast at heights beyond 69' (21 m).

20- 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.

21- It is strongly recommended not to touch any of the moving parts on the motorized unit when it is in use.

22- All access doors on the motorized unit must be closed when they are not in use.

23- There must be at least two competent persons for each motorized unit in a setup. A motorized unit should never be operated by only one person.

24- The motorized unit must not be used or operated during an electrical thunderstorm.

25- 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. 64 for more information about loading the platform. When the motorized unit setup is not in use and above **base** level, loads should not be left on the platform except for counterweights used for front and back extension confi gurations.

26- Wind speeds must not exceed **28 mph (45 km/h)** during the **erection** and **dismantling** 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)**. A motorized unit setup with mast ties must not be exposed to wind speeds exceeding **35 mph (56 km/h)** when in **operation**. A motorized unit setup equipped with **weather protection** must not be exposed to wind speeds exceeding **20 mph (32 km/h)**. Wind speeds must not exceed **94 mph (150 km/h)** when the motorized unit setup is **not in use**.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Motorized Unit Overview

24' (7,3 m) motorized unit

Fig. 1.1

List of components included with shipped unit			
M2 SERIES 24' (7,3 m) MOTORIZED UNIT			
Qty	**Component**	**Qty**	**Component**
1	M2 Series 24' (7,3 m) motorized unit	1	1 1/2" wrench
1	15/16" wrench	2	84" (213 cm) end guardrails
2	sliding guardrail doors	8	72" (183 cm) outriggers
2	84" (213 cm) guardrail doors	1	Owner's manual
2	plank-end guardrails		
M2 SERIES 14' (4,3 m) MOTORIZED UNIT			
Qty	**Component**	**Qty**	**Component**
1	M2 Series 14' (4,3 m) motorized unit	1	1 1/2" wrench
1	15/16" wrench	2	84" (213 cm) end guardrails
2	sliding guardrail doors	5	72" (183 cm) outriggers
2	44" (112 cm) guardrail doors	1	Owner's manual
2	plank-end guardrails		
Note The list of components included with each shipped motorized unit may change without notice.			

Fig. 1.2

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Motorized Unit Overview

14' (4,3 m) motorized unit

Fig. 1.3

Fig. 1.5

Fig. 1.6

Fig. 1.4

24' (7,3 m) motorized unit shown in this illustration

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

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Motorized Unit Specifi cations

General Specifi cations		
	24’ (7,3 m) model	**14’ (4,3 m) mc**
Platform dimensions (work area)	84”’x 288” x 48” (2,1 m x 7,3 m x 1,2 m)	84”’x 168” x 48” (2,1 m x 4,3 m x 1,2 m)
Platform dimensions (transport)	100” x 288” x 48” + 6” mast toe board (2,6 m x 7,3 m x 1,4 m + 15,2 cm)	100” x 168” x 48” + 6” mast toe board (2,6 m x 4,3 m x 1,4 m + 15,2 cm)
Min. / max. platform length	24’ / 64’ (7,3 m / 19,7 m)	14’ / 34’ (4,3 m / 10,4 m)
Drive system	Hydraulic ratchet drive	Hydraulic ratchet drive
Operating system	3,5” (8,9 cm) hydraulic cylinders at 2800 psi (19,305 kPa)	3,5” (8,9 cm) hydraulic cylinders at 2800 psi (19,305 kPa)
Maximum height	Up to 250’ (76 m) nominal	Up to 250’ (76 m) nominal
Tie distance	20’ (6,1 m) [30’ (9,14 m) if pre-installed]	20’ (6,1 m) [30’ (9,14 m) if pre-installed]
Freestanding height	35’ (10,1 m) with extended telescopic outriggers	25’ (7,6 m) with extended telescopic outriggers

Fig. 1.7

Specifi c Features			
		24’ (7,3 m) model	**14’ (4,3 m) model**
Platform weight	**Total**	7300 lb (3311 kg)	6000 lb (2722 kg)
	Base	2300 lb (1043 kg)	1500 lb (680 kg)
	MU structure assembly	4900 lb (2223 kg)	4500 lb (2041 kg)
Maximum load capacity	Single unit installation	16 600 lb at 64’ (7530 kg at 19,7 m)	19 300 lb at 34’ (8754 kg at 10,4 m)
	Multiple units installation	28 000 lb at 148’ (12 700 kg at 45,1 m)	30 800 lb at 108’ (13 971 kg at 32,9 m)
Maximum lifting capacity		22 000 lb at 24’ (9979 kg at 7,3 m)	22 000 lb at 14’ (9979 kg at 4,3 m)
Vertical travel speed		3’ (0,9 m) per minute	3’ (0,9 m) per minute
Mast section		16” x 16” x 60” (40,6 cm x 40,6 cm x 1,5 m) 235 lb (100 kg) per section	16” x 16” x 60” (40,6 cm x 40,6 cm x 1,5 m) 235 lb (100 kg) per section
Bridges		Refer to the *Bridges* section for dimensions	Refer to the *Bridges* section for dimensions
Guardrails (included)		Sliding guardrail doors (2) Plank-end guardrails (2) 84” end guardrails (2) 84” guardrail doors (2)	Sliding guardrail doors (2) Plank-end guardrails (2) 84” end guardrails (2) 44” guardrail doors (2)

Fig. 1.8

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Motorized Unit Specifi cations

Hydraulic Specifi cations	
Component	**Specifi cations**
Double gear pump	2 x 2,59 GPM (2 x 9,8 l/min)
Hydraulic cylinder	2 x 3 1/2” x 23 1/2” x 1 1/2” (8,9 cm x 59,7 cm x 3,8 cm) with 3000 psi counterbalance
Hydraulic tank capacity	5,26 US gal (19,9 l)
Hydraulic oil	Dexron III ATF
Oil fi lter	Ikron fi lter model HE K44-20-135-AS-SP010

Fig. 1.9

Engine Specifi cations		
	24’ (7,3 m) model	**14’ (4,3 m) model**
Model	Honda GX270	Honda GX270
Rated power	9 HP @ 3600 RPM	9 HP @ 3600 RPM
Consumption	313 g / kWh (230 g / hph)	313 g / kWh (230 g / hph)
Spark plug	BRP6ES	BPR6ES
Oil type	SAE 10W30	SAE 10W30
Gasoline tank capacity	1,6 US gal (6 l)	1,6 US gal (6 l)
Oil capacity	1,16 US qt (1,10 l)	1,16 US qt (1,10 l)
Electrical power supply	12 VDC – 10 Ah	12 VDC – 10 Ah
Battery	12 VC – 230 CCA	12 VC – 230 CCA
For any other information regarding the use and maintenance of Honda engines, refer to the Honda owner’s manual.		

Fig. 1.10

Operation Specifi cations	
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 setup is equipped with weather protection	20 mph (32 km/h)
When unit is not in use	94 mph (150 km/h)
* Unless authorized by Hydro Mobile prior to installation, the platform should only be used on masts whose height does not exceed 250’ (76 m).	
Noise exposure	
Standard noise level [1] = 83dB(A) [2]	

[1] *measured at 23’ (7 m) @ 3600 RPM*
[2] *with super silent, noise level is 76 dB(A)*

Fig. 1.11

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Motorized Unit Specifi cations

Weight of Components		
Product code	**Description**	**Weight**
11001302-0-00000-2	24’ (7,3 m) base assembly	2300 lb (1043 kg)
11001G01-0-00000-2	14’ (4,3 m) base assembly	1500 lb (680 kg)
11000005-0-00000-1	24’ (7,3 m) motorized unit	7300 lb (3402 kg)
11000300-0-00000-1	14’ (4,3 m) motorized unit	6000 lb (2722 kg)
11023310-0-00000-2	Mast assembly	235 lb (107 kg)
11024403-0-00000-4	Walkway operator assembly	420 lb (191 kg)
11003109-0-00000-1	6’ (1,8 m) bearing bridge adapter assembly	865 lb (392 kg)
11003E00-0-00000-1	10’ (3 m) modular bridge assembly	1335 lb (606 kg)
11003F00-0-00000-1	5’ (1,5 m) modular bridge assembly	765 lb (347 kg)
11011401-K-01000-1	Multi-purpose insert bridge assembly	800 lb (363 kg)
11008700-K-00000-2	72” (183 cm) outrigger kit	25 lb (11 kg)
11002Y00-0-00000-7	Sliding guardrail door - LEFT assembly for 24’ (7,3 m) motorized unit	68 lb (31 kg)
11002709-0-00000-7	Sliding guardrail door - RIGHT assembly for 24’ (7,3 m) motorized unit	68 lb (31 kg)
11002V00-0-00000-7	Sliding guardrail door - LEFT assembly for 14’ (4,3 m) motorized unit	50 lb (23 kg)
11002V00-0-01000-7	Sliding guardrail door - RIGHT assembly for 14’ (4,3 m) motorized unit	50 lb (23 kg)
11002112-1-10000-2	84” (213 cm) guardrail door for 24’ (7,3 m) motorized unit	70 lb (32 kg)

Continues on page 13

Fig. 1.12

24’ (7,3 m) motorized unit

Fig. 1.13

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

Motorized Unit Specifi cations

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Continued from page 12

Weight of Components		
Product code	**Description**	**Weight**
11002W00-1-10000-2	44” (112 cm) guardrail door for 14’ (4,3 m) motorized unit	50 lb (23 kg)
11002007-1-10000-2	84” (213 cm) end guardrail	60 lb (27 kg)
10002609-1-10000-2	Plank-end guardrail	30 lb (14 kg)
11002100-2-00000-2	Adjustable guardrail ass’y – TYPE 2	75 lb (34 kg)
10007008-K-01000-1	Hoist system kit	2610 lb (1184 kg)
10007008-0-10000-1	Hoist main assembly	1860 lb (844 kg)
10007911-0-00000-2	Hoist power pack rack assembly	750 lb (340 kg)
10036001-0-00000-1	Monorail beam assembly	85 lb (39 kg)
10036200-K-01000-4	Junction plate kit	20 lb (9 kg)
11006504-K-02000-2	Weather protection – complete kit	224 lb (102 kg)
11006504-0-00000-2	Weather protection connection tube kit	68 lb (31 kg)
11006603-0-00000-2	Weather protection post assembly – TYPE 1	37 lb (17 kg)
11006802-0-00000-4	Monorail beam attachment assembly	27 lb (12 kg)
11008101-K-01000-2	Weather protection top outrigger kit	74 lb (34 kg)

Fig. 1.14

14’ (4,3 m) motorized unit

Fig. 1.15

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

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Dimensions of the Motorized Unit

24' (7,3 m) motorized unit

Fig. 1.16

Dimensions of the Motorized Unit

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

14' (4,3 m) motorized unit

Fig. 1.17

* 147 13/16" (375,4 cm) with outriggers fully extended

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Positioning the Motorized Unit

General Concept

Bearing surface

Before installing the motorized unit, make sure the bearing surface unde[illegible] clear of debris and has the proper bearing capacity. When required, appropriate cribbing must be placed under the mudsills on the base to distribute the load. It is important to make sure that the bearing surface is stable and has not been subject to any type of erosion or deterioration caused by weather conditions (snow, rain, etc.).

Minimum Bearing Surface Capacities (for static loads)

	Height		Motorized unit (pressure per mudsill)		
			Mudsill: 14" x 28" (35,6 x 71 cm) Contact surface: 392 sq in (,25 m²)		
	(ft)	(m)	Reaction (for static load)	(psi)	(kpa)
Freestanding	35	10,7	11 886 lb 5391 kg	30	207
Installation with mast ties	50	15,2	12 450 lb 5647 kg	32	221
	75	22,9	13 276 lb 6022 kg	34	234
	100	30,5	14 101 lb 6396 kg	36	248
	150	45,7	15 751 lb 7145 kg	40	276
	200	61	17 401 lb 7893 kg	44	303
	250	76,2	19 051 lb 8641 kg	49	337

Fig. 1.18

Fig. 1.19

Fig. 1.20

WARNING

Make sure the ground or support surface capacity meets with values included in the *Minimum Bearing Surface Capacities* table (fi g. 1.18). Soil compacting, cribbing or shoring can increase bearing capacity. Contact an engineer for assistance.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Positioning the Motorized Unit

Suggested cribbing for most bearing surfaces

The plywood and planks used as cribbing should be secured together to prevent slipping.

Fig.1.21

Fig. 1.22

Suggested Cribbing		
		40" x 40" x 6 1/2" (102 cm x 102 cm x 16,5 cm)
1	Plywood 1/2" (1,3 cm)	4
2	2"x 6" x 40" (5 cm x 15 cm x 102 cm)	24

Values shown in the above table are for reference only. Any cribbing equivalent to or larger than these values can be used.

The type of cribbing chosen may vary according to the bearing surface where the setup must be installed.

For example, a setup installed on a cement slab that is covering the bearing surface would require cribbing consisting of only one plywood panel under each mudsill while a setup installed on a cement slab that is covering an indoor garage would require shoring in addition to plywood cribbing.

A setup installed on a bearing surface composed of gravel, sand or any such type of surface would require stronger cribbing under the mudsills.

In cases where shoring is required, it is recommended to contact an engineer for assistance.

Fig.1.23

WARNING / AVERTISSEMENT / AVISO		
Ensure proper bearing capacity under mudsills.	S'assurer d'une bonne capacité de soutien sous la cale.	Asugurar se de una buena capacidad de apoyo por debajo de la cala. A0800100-0011

Fig. 1.24

CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

General guidelines

1- Installation should be carried out under the supervision of a (person, in accordance with all applicable 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 mast tie requirements.

3- Before installing the motorized unit, determine where the cribbing and the mudsills 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, fi g. 1.18, p. 16). Should the actual bearing capacity be inferior to the values in the table, please seek instructions and recommendations from Hydro Mobile.

4- On freestanding installations, the base outriggers on the **back** of the unit must be extended completely to a total of 24” (61 cm). The base outriggers on the **front** of the unit must be extended as far as possible up close to the face of the work. On tied installations, the base outriggers must be closed completely.

5- On freestanding installations, the planking must never exceed the length of the front base outriggers unless they are completely extended. With the front base outriggers completely extended, the **maximum width** of planking allowed in **front** of the unit is a **four-plank** wide confi guration.

6- On tied installations, the **maximum width** of planking allowed in **front** of the unit is an **eight-plank** wide confi guration and requires the use of optional outriggers and accessories. Refer to p. 71 of the *Accessories* section for more information about outriggers and planking confi gurations. For more information about planking and mast ties, refer to the *Mast Tie Schedule* table on p. 55 of the *Masts and Mast Ties* section. Any planking confi guration other than those described in this owner’s manual must be authorized by Hydro Mobile prior to installation.

7- Distance from the fi nished wall (see “A” in fi g. 1.16, p. 14 and fi g. 1.17, p. 15) 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 applicable local regulations to determine play or the maximum allowable distance between the motorized unit, including its accessories, and the face of the work.

8- Mark the position of mudsills while taking center-to-center distances into account. Base level differences can be compensated by adjusting the height of the base jacks or by building wood cribbing. Major differences in the level of the bearing surface or obstacles can be bypassed by splitting the base. Refer to p. 27 of the *Motorized Unit* section for more information on the separation of the base.

9- Unload the motorized unit with a rough terrain forklift or a crane. When moving the motorized unit with a forklift, the unit must be lifted by the designated areas on the platform (see fi g. 1.5, p. 9). It is important to consider that a 24’ (7,3 m) motorized unit that must be lifted has a total weight of 7300 lb (3311 kg), while a 14’ (4,3 m) motorized unit weighs a total of 6000 lb (2722 kg).

WARNING
A tied setup should not be raised above 250’ (76 m) unless authorized by Hydro Mobile prior to installation.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

General guidelines (cont'd)

10- Make sure that all loads have been removed from the platfo workers have stepped down before lifting and transporting the motorized unit. Refer to p.23 for more information on the lift and relocation of a motorized unit.

11- Using a rough terrain forklift, a crane or an optional wheel set (see p. 81 of the *Accessories* section for more information on the use of a wheel set), position and align the motorized unit with the face of the work or the structure. Before lowering the unit on the bearing surface, open the adjustable jacks on the base by 4 to 5" (11 to 13 cm).

12- Install a mast section on each of the bottom mast sections. Refer to p. 54 of the *Masts and Mast Ties* section for more details on how to install mast sections. Verify that each mast is plumb on both its front and side axis. If required, level the motorized unit using the adjustable jacks on the base. If mast sections remain out of plumb after adjusting the base jacks, contact the Hydro Mobile technical support team.

13- Remove the mast locking bar from both bottom mast sections. Store the mast locking bars in their storage location.

14- Remove the transport hook from each cylinder. Store the transport hooks in their storage location. Retrieve and install the cylinder and secondary hooks. For more information about the installation and use of hooks, refer to the *Power Pack, Controls and Hydraulic Components* section, on p. 48.

15- Proceed to the following instruction steps for the pre-installation of a setup or to the instruction steps for the progressive installation of a setup on p. 21, as required.

Standard installation (single unit)

Instructions for the pre-installation of a setup

1- Set up the motorized unit as described in the general guidelines on p. 18 (steps 1 through 14).

2- With the motorized unit at base level, install as many bridges as is required and allowed. Refer to the *Load Capacities* section on p. 64 for more information on the number of bridges allowed in a setup. **During pre-installation, only mast sections can be loaded on the motorized unit**. **It is important to note that no loads are allowed on the bridges until the pre-installation process is complete.** For tied setups, pre-installation is complete when all mast ties have been installed. For freestanding setups, pre-installation is complete when the installation reaches a maximum height of 35' (10,1 m) for confi gurations using 24' (7,3 m) units and 25' (7,6 m) for confi gurations using 14' (4,3 m) units.

3- Using a crane or a forklift, load mast sections on the platform. Refer to the *Load Capacities* section on p. 64 for more information about loading the platform.

4- Proceed with the installation of two mast sections. Refer to p. 54 of the *Masts and Mast Ties* section for more details on how to install mast sections.

Fig. 1.25

Fig. 1.26

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Standard installation (single unit)

Instructions for the pre-installation of a setup (cont'd)

5- The platform can be accessed by the front of the mast when the setup is at less than 10' (3 m) above base level. Once the setup has been raised over 10' (3 m) above base level, use the access ladder on the walkway to access the platform. Make sure that the access ladder is completely extended. The access walkway cannot be used if the access ladder is not entirely unfolded.

6- Continue installing mast sections until a mast tie is required or until the freestanding installation has reached the maximum height allowed, making sure throughout the process that the masts remain plumb on both their front and side axis. Refer to p. 55 of the *Masts and Mast Ties* section for instructions about the installation of mast ties.

7- Install as many mast sections as the plan layout requires and as is allowed. A tied setup should not be raised above 250' (76 m), unless authorized by Hydro Mobile prior to installation.

8- To access the work platform by climbing up the mast, it is recommended to install a retractable rest platform when the setup has been raised at more than 30' (9 m) above base level or beyond the maximum allowable height prescribed by local regulation for mast climbing without a rest platform. Refer to p. 80 of the *Accessories* section for more information on the installation and use of a retractable rest platform. Refer also to step 17 of the *Performance and Safety Rules* on p. 7 for more information on how to safely access the platform.

9- Lower the motorized unit to base level, verifying the mast ties and the mast bolts on the way down and making sure they are tightened to the proper torque and are in good condition. On **brand-new mast sections**, make sure to verify that all mast bolts are tightened and that the proper torque was used as the galvanized coating may have compressed. In all cases, tighten mast bolts to a torque of 120 lbf-ft (163 N-m). Failure to tighten bolts properly may lead to serious injury or death.

10- Install outriggers and planking, as required. On some unit models, it is recommended to use a 56" (1,4 m) special outrigger if an outrigger is required at the bottom position in front of the walkway to prevent damages to the structure. For more information about the installation and use of outriggers, refer to p. 71 of the *Accessories* section.

11- Make sure that all the doors and guardrails are in place and secure (see p. 75, p. 76, p. 77, p. 78 and p. 79 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 local regulations. In all cases where workers are exposed to fall hazards, fall protection is required.

12- Before authorizing workers to use the motorized unit, perform every step in the daily inspection checklist. Refer to p. 93 of the *Transport, Storage and Maintenance* section for more information.

WARNING

During pre-installation, only mast sections can be loaded on the motorized unit. It is important to note that no loads are allowed on the bridges until the pre-installation process is complete.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Standard installation (single unit)

Instructions for the progressive installation of a se

1- Set up the motorized unit as described in the general guidelines on p. 18 (steps 1 through 14).

2- Proceed with the installation of bridges. For more information on the installation and use of bridges, refer to the *Bridges* section on p. 34. Refer to the *Load Capacities* section on p. 64 for the type and number of bridges allowed in a setup.

3- Install outriggers and planking, as required. On some unit models, it is recommended to use a 56” (1,4 m) special outrigger if an outrigger is required at the bottom position in front of the walkway to prevent damages to the structure. For more information about the installation and use of outriggers, refer to p. 71 of the *Accessories* section.

4- Make sure that all the doors and guardrails are in place and secure (see p. 75, p. 76, p. 77, p. 78 and p. 79 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 local regulations. In all cases where workers are exposed to fall hazards, fall protection is required.

5- Using a crane or a forklift, load mast sections on the platform. Refer to the *Load Capacities* section on p. 64 for more information about loading the platform.

6- Proceed with the installation of two mast sections. Refer to p. 54 of the *Masts and Mast Ties* section for more details on how to install mast sections.

7- Once the setup has been raised at 10’ (3 m) above base level, make sure that the access ladder on the walkway is completely extended. The access walkway cannot be used if the access ladder is not entirely unfolded.

8- Continue installing mast sections until a mast tie is required, making sure throughout the process that the masts remain plumb on both their front and side axis. Refer to p. 55 of the *Masts and Mast Ties* section for instructions about the installation of mast ties.

9- Install as many mast sections as the plan layout requires and as is allowed. A setup should not be raised above 250’ (76 m), unless authorized by Hydro Mobile prior to installation.

10- Lower the motorized unit to base level, verifying the mast ties and the mast bolts on the way down and making sure they are tightened to the proper torque and are in good condition. When using **brand-new mast sections**, mast sections must be **pre-installed to the top of the work area**. Refer to step 9 of the pre-installation instructions for more information. In all cases, tighten mast bolts to a torque of 120 lbf-ft (163 N-m). Failure to tighten bolts properly may lead to serious injury or death.

11- If the work platform must be accessed by climbing up the mast, it is recommended to install a retractable rest platform when the setup has been raised at more than 30’ (9 m) above base level or beyond the maximum allowable height prescribed by local regulation for mast climbing without a rest platform. Refer to p. 80 of the *Accessories* section for more information on the installation and use of a retractable rest platform. Refer also to step 17 of the *Performance and Safety Rules* on p. 7 for more information on how to safely access the platform.

12- Before authorizing workers to use the motorized unit, perform every step in the daily inspection checklist. Refer to p. 93 of the *Transport, Storage and Maintenance* section for more information.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Multiple units installation

1- In reference to the plan/layout drawing, make sure that all the motc and components required are available. Establish the position of each motorized unit, determine if there are obstacles and what are the cribbing and mast tie requirements.

2- Set up the fi rst motorized unit as described in the general guidelines for a standard installation (single unit) on p. 18 (steps 1 through 14).

3- Determine the position of the second motorized unit according to the length of the bearing bridge setup. For more information on calculating the ideal distance between two motorized units in a multiple units installation, refer to p. 38 of the *Bridges* section. Refer also to the *Load Capacities* section on p. 64 for the types and maximum number of bridges allowed in a bearing bridge setup.

4- Before lowering the second motorized unit, determine where the cribbing and the mudsills will rest. The bearing surface under the motorized unit must be level, clear of debris and have the proper bearing capacity (see *Minimum Bearing Surface Capacities* table, fi g. 1.18, p. 16). Set the cribbing and lower the motorized unit.

5- Proceed with the installation of the bearing bridge structure. Refer to p. 37 of the *Bridges* section for more information on the installation of bearing bridges.

6- Proceed with the installation of cantilever bridges on the sides of the motorized units opposite to the bearing structure, as required. Refer to p. 35 of the *Bridges* section for more information on a cantilever installation and to the *Load Capacities* section on p. 64 for the types and maximum number of bridges allowed in a setup.

7- For the pre-installation of the bearing bridge setup, follow steps 3 to 12 of the instructions for the pre-installation of a setup on p. 19. **During pre-installation, only mast sections can be loaded on the motorized unit**. **It is important to note that no loads are allowed on the bridges until the pre-installation process is complete.** For tied setups, pre-installation is complete when all mast ties have been installed. For freestanding setups, pre-installation is complete when the installation reaches a maximum height of 35’ (10,1 m) for confi gurations using 24’ (7,3 m) units and 25’ (7,6 m) for confi gurations using 14’ (4,3 m) units.

8- Install outriggers and planking, as required. On some unit models, it is recommended to use a 56” (1,4 m) special outrigger if an outrigger is required at the bottom position in front of the walkway to prevent damages to the structure. For more information about the installation and use of outriggers, refer to p. 71 of the *Accessories* section.

9- Make sure that all the doors and guardrails are in place and secure (see p. 75, p. 76, p. 77, p. 78 and p. 79 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 local regulations. In all cases where workers are exposed to fall hazards, fall protection is required.

10- If the bearing setup was not pre-installed at this point, proceed with the installation of mast sections as described in steps 5 through 11 of the instructions for the progressive installation of a setup on p. 21.

11- Before authorizing workers to use the motorized units, perform every step in the daily inspection checklist on each unit. Refer to p. 93 of the *Transport, Storage and Maintenance* section for more information.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Lifting and moving a motorized unit or a setup

The lift and relocation of an M2 Series motorized unit or setup mus with extreme care, using proper certifi ed lifting equipment.

It is **mandatory** to refer to and comply with the capacities and limitations of the lifting device as specifi ed by the manufacturer. It is important to consider that a 24' (7,3 m) motorized unit that must be lifted has a total weight of 7300 lb (3311 kg), while a 14' (4,3 m) motorized unit weighs a total of 6000 lb (2722 kg).

It is recommended to use the M2 Series optional wheel set for the relocation of an M2 Series motorized setup.

Preparation

1- Before lifting and moving a motorized unit, a bearing bridge or a cantilever setup, make sure that all the workers have stepped down and that all tools, equipment and loads have been removed from the platform.

2- Remove all the planking, masts and mast ties. There must be no more than one mast section on top of each of the bottom mast sections welded on the base of the unit. Make sure that all the guardrails and other components are secure, and that the mast locking bars are in place.

3- Make sure that the cylinder and secondary hooks have been removed, that the transport hooks are in place and that all the base outriggers have been closed and locked.

4- In reference to the plan/layout drawing, establish the position where the motorized unit or setup must be moved to and determine if there are obstacles.

5- Make sure that the lifting, transport and destination areas are clear of workers and equipment and that there are no obstacles.

Lifting a motorized unit with a rough terrain forklift

This method must be used to lift and position a **motorized unit only**. It is **mandatory** to make sure that there aren't any bridges attached to the motorized unit before lifting and transporting it.

Lifting by the forklift tubes

1- Prepare the motorized unit as described in the preparation instructions on p. 23.

2- Insert the forks in the designated areas (forklift tubes) under the deck of the motorized unit (fi g. 1.28).

Fig. 1.28

Fig. 1.27

CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Lifting and moving a motorized unit or a setup

Lifting by the forklift tubes (cont'd)

3- Lift and position the motorized unit over its destination area. Before lowering the unit on the bearing surface, open the adjustable jacks on the base by 4 to 5" (11 to 13 cm). Refer to p. 18 for more information about the installation and positioning of a motorized unit.

Fig. 1.29

Fig. 1.30

Lifting with chains, using a forklift

1- Prepare the motorized unit as described in the preparation instructions on p. 23.

2- Slip chains through the forklift tubes on the motorized unit. Secure the chains to the forks a rough terrain forklift (fi g. 1.31).

3- Make sure that a worker, wearing adequate individual protection, is standing on the ground to help stabilize the structure during the lift, transport and landing of the motorized unit.

4- Lift and position the motorized unit over its destination area. Before lowering the unit on the bearing surface, open the adjustable jacks on the base by 4 to 5" (11 to 13 cm). Refer to p. 18 for more information about the installation and positioning of a motorized unit.

Fig. 1.31

Fig. 1.32

Lifting a motorized unit or a cantilever setup with a crane

This method can be used to lift and position a motorized unit or a motorized unit **cantilever** setup measuring a maximum of 64' (19,5 m)**.**

Lifting with chains, using a crane

1- Prepare the motorized unit as described in the preparation instructions on p. 23.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Lifting and moving a motorized unit or a setup

Lifting with chains, using a crane (cont'd)

2- Slip chains through the forklift tubes on the motorized unit (see fi g. 1.31, p. 24). Secure the chains to the crane.

3- Make sure that a worker, wearing adequate individual protection, is standing on the ground to help stabilize the structure during the landing of the motorized unit.

4- Lift and position the motorized unit or the cantilever setup over its destination area. Before lowering the unit on the bearing surface, open the adjustable jacks on the base by 4 to 5" (11 to 13 cm). Refer to p. 18 for more information about the installation and positioning of a motorized unit.

Fig. 1.33

Fig. 1.34

Lifting and moving a motorized unit with the wheel set

This method can be used to lift and position a **motorized unit** using the optional M2 Series wheel set under one end of the unit**.** It is important to note that **masts** must have a **maximum height** of 10' (3 m) when using this procedure to move a motorized unit.

1- Carefully follow the steps described in the preparation instructions on p. 23. Make sure to select a sling, a cable or chains that can lift a **minimum weight** of 7000 lb (3175 kg).

2- Install the optional wheel set under one end of the motorized unit (fi g. 1.35). For more information about the installation and use of a wheel set, refer to p. 81 of the *Accessories* section.

Fig. 1.35

3- Slide chains, a cable or a sling through the other end of the motorized unit and secure it crosswise to the forks a rough terrain forklift.

4- Move the motorized unit to its destination area. Position the motorized unit. Before lowering the unit on the bearing surface, open the adjustable jacks on the base by 4 to 5" (11 to 13 cm). Refer to p. 18 for more information about the installation and positioning of a motorized unit.

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Lifting and moving a motorized unit or a setup

Lifting and moving a cantilever setup with the wheel set

This method can be used to lift and position a **cantilever** setup measuring a maximum of 64' (19,7 m) using the optional M2 Series wheel set at one end of the structure**.** It is important to note that **masts** must have a **maximum height** of 10' (3 m) when using this procedure to move a cantilever setup.

1- Carefully follow the steps described in the preparation instructions on p. 23. Make sure to select a sling, a cable or chains that can lift a **minimum weight** of 7000 lb (3175 kg).

2- Install the optional wheel set under the second vertical member of the bridge in the cantilever structure closest to the motorized unit (fi g. 1.36 and fi g. 1.37). For more information about the installation and use of a wheel set, refer to p. 81 of the *Accessories* section.

Fig. 1.36

Fig. 1.37

3- Slide chains, a cable or a sling through the last bridge installed at the other end of the setup and secure it crosswise to the forks a rough terrain forklift.

4- Move the cantilever setup to its destination area. Position the motorized unit. Before lowering the unit on the bearing surface, open the adjustable jacks on the base by 4 to 5" (11 to 13 cm). Refer to p. 18 for more information about the installation and positioning of a motorized unit.

Lifting and moving a bearing bridge structure with the wheel set

This method can be used to lift and position a **bearing bridge** structure measuring a maximum of 62' (18,9 m) using the optional M2 Series wheel set at one end of the structure**.**

1- Carefully follow the steps described in the preparation instructions on p. 23. Make sure to select a sling that can lift a **minimum weight** of 4500 lb (2041 kg).

2- Install the optional wheel set under the second vertical member of the fi rst bridge at one end of the bearing bridge structure. For more information about the installation and use of a wheel set, refer to p. 81 of the *Accessories* section.

Fig. 1.38

3- Slide chains, a cable or a sling through the last bridge installed at the other end of the setup and secure it crosswise to the forks of a rough terrain forklift.

4- Move the bearing bridge structure to its destination area. Refer to p. 18 for more information about the installation and positioning of a bearing bridge structure.

CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Base separation

When installing an M2 Series motorized unit, an uneven bearing surfa preventing a level installation of the base can be bypassed by sepa of the motorized unit.

Instructions for separating the base

1- Make sure that the motorized unit is sitting completely on its base and that there aren't any bridges bolted to it. Remove the locking bars from both masts and the transport hooks from both cylinder hooks.

2- Using wire or rubber straps, tie all the cylinder and secondary hooks away from the masts.

3- Slide a 6' long (1,8 m) piece of 2" x 4" (5 cm x 10 cm) lumber through the guardrail system of the access walkway to close and secure the platform in place.

4- Choose a clear, level surface close to the work area where the unit can be temporarily set down. To prevent damage to the motorized unit, lay down two mast sections on their sides to act as temporary support for the motorized unit.

5- Using a lifting device such as a rough terrain forklift or a crane, lift the motorized unit off its base and set it down on top of the two mast sections.

6- To disassemble the central beam, remove the nut and bolt assemblies (fi g. 1.40), making sure to note the number and location of each type of shims at each end for future re-assembly. Store the central beam assembly in a secure place, away from work areas and construction traffi c.

7- On more recent base models, use cribbing to form a wood block underneath each mast (fi g. 1.42) of the two separate bases. On older base models, a jack and mudsill may also be installed on each side of the new end sections of the two separate bases (fi g. 1.41).

Fig. 1.39

The number of shims required varies from one mast to another

Fig. 1.40

Fig. 1.41

Confi guration shown above is for **previous** base models only

Fig. 1.42

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Base separation

Perpendicular installation of a separated base

1- Separate the base as described in steps 1 through 7 of the instructions for separating the base on p. 27.

2- Install the fi **rst** part of the separated base on the **lower** level of the bearing surface with its longer side **perpendicular** to the surface of the work. Distance from the fi nished wall to the mast should be at least 20” (51 cm) + 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.

3- Using a three-mast tie system, tie the bottom mast section of the fi rst part of the base to the face of the work as close to the bearing surface as possible (fi g. 1.43). Make sure that the mast is plumb on both its front and side axis. Refer to p. 55 of the *Masts and Mast Ties* section for instructions on the use and installation of mast ties.

4- Install two mast sections and tie the mast to the face of the work again, using a three-mast tie system for this tie also (fi g. 1.43). Refer to p. 54 of the *Masts and Mast Ties* section for instructions on the installation of mast sections. Make sure that the mast is perfectly plumb on both its front and side axis. Use the adjustable jacks on the base to adjust the level of the base.

5- Install as many additional mast sections as is required so that the top mast section of the lower part of the separated base is equal in height to where the top mast section of the higher part of the separated base will reach. Make sure that the appropriate mast ties are installed. Refer to the *Mast Tie Schedule* table on p. 55 of the *Masts and Mast Ties* section.

Perpendicular installation of a separated base – split level

Fig. 1.43

Fig. 1.44

Cribbing confi guration shown above is for previous base models only

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Base separation

Perpendicular installation of a separated base (con

6- Install the **second** part of the base on the **higher** part of the bearing surface as described in step 2. Make sure that the difference in height between the higher and lower parts of the bearing surface is equal to or a multiple of 60” (1,5 m) or the height of one mast section. If required, use cribbing or excavating and compacting to adjust the height difference to a multiple of 60” (1,5 m). If the height difference cannot be adjusted appropriately, contact the service center or the Hydro Mobile technical support team.

7- Using a three-tie mast tie system, tie the bottom mast section of the second part of the base to the face of the work as close to the bearing surface as possible. Make sure that the mast tie is not completely tightened.

8- Install one mast section and tie the mast to the face of the work again, using a three-mast tie system for this tie also (fi g. 1.43), making sure that the distance between the inside faces of the masts is equal to 15’-0”+1/16” with a -0 tolerance (4,6 m + 1,6 mm, -0) for 24’ (7,3 m) motorized units and 8’-0”+1/16” with a -0 tolerance (2,4 m + 1,6 mm, -0) for 14’ (4,3 m) motorized units. Make sure this mast tie is also not completely tightened.

9- Open the mast tie doors on the motorized unit. Make sure that they will remain open during the lifting and transport of the motorized unit.

10- Slide a 4’ long (1,2 m) piece of 4” x 4” (10 cm x 10 cm) lumber through each mast, parallel to the face of the work, four rungs below the top of the mast sections. It is **mandatory** that both pieces of lumber in both mast sections are at equal height. The **mast locking bars must not be used** for this operation as they are not designed to support the weight of the motorized unit.

11- Using a lifting device such as a rough terrain forklift or a crane, lift the motorized unit (using chains, slings or a cable) and carefully set it down on the separated base until it sits on the pieces of lumber in the masts.

12- Tighten all the mast ties, making sure that both masts are perfectly plumb on both their front and side axis, as well as square to each other.

13- Support the access walkway and remove the piece of lumber from the access walkway. Release all the cylinder and secondary hooks so that they can engage on mast rungs.

14- Raise the motorized unit to the top of the mast sections. For more information about raising and lowering operations, refer to p. 51 of the *Power Pack and Operating Components* section. Remove the pieces of lumber from the mast sections. Make sure that the mast tie doors are closed if they are not in use.

15- In reference to the plan/layout drawing, proceed with the installation of bridges and mast sections, as is required and allowed. Refer to the pre-installation and progressive installation procedures on p. 19 and p. 21, as required.

WARNING
Make sure to use a three-mast tie system for the fi rst two ties of a separated base setup.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Base separation

Parallel installation of a separated base

When space is limited close to the bearing surface, the separated base can be installed with its longer side **parallel** to the surface of the work.

1- Separate the base as described in steps 1 through 7 of the instructions for separating the base on p. 27. For **14' (4,3 m) motorized units**, make sure to install the base outriggers so that the **back** ends of the base outriggers are in the same direction and not facing each other (fi g. 1.47).

2- Remove the anti-error installation stubs on the bottom mast section welded on the base (fi g. 1.45).

3- Install the fi rst mast section rotated by 90 degrees. Refer to p. 54 of the *Masts and Mast Ties* section for more details on the installation of mast sections. It is important to note that once the fi rst mast section is rotated at 90 degrees, the motorized unit can **no longer be lowered on the bottom mast section** as the access rungs of that fi rst mast section are now facing the lifting hooks.

4- Repeat steps 2 and 3 for the second part of the separated base.

5- In reference to the plan/layout drawing, continue the installation of the motorized unit by following all the applicable steps described in steps 3 to 15 of the perpendicular installation procedure on p. 28.

Fig. 1.46

Fig. 1.45

Parallel installation of a separated base
14' (4,3 m) motorized unit

Fig. 1.48

Fig. 1.47

NOTE
Rotating the fi rst mast section at 90 degrees for a parallel installation of a separated base will prevent the motorized unit to be lowered completely on its base.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Setup and confi gurations

Base separation

Parallel installation of a separated base – split level

Fig. 1.49

Fig. 1.50

Re-assembly of a separated base

1- Dismantle the setup.

2- Before removing the two lowest sets of mast ties, lift the motorized unit frame off from the bottom mast sections.

3- Remove the cribbing (or extra jacks and mudsills) from the separate base parts. If the separated base was installed following the parallel installation procedure, remove the rotated mast section.

4- Use the appropriate bolt and nut assemblies to reinstall the central beam, replacing the base shims as previously identifi ed during the dismantling. Make sure that the distance between the inside faces of the masts is 15'-0"+1/16" with a -0 tolerance (4,6 m + 1,6 mm, -0) for 24' (7,3 m) motorized units and 8'-0"+1/16" with a -0 tolerance (2,5 m + 1,6 mm, -0) for 14' (4,3 m) motorized units. Contact the Hydro Mobile technical support for the technical specifi cations for base dimensions.

5- Verify that the base is square by measuring the X dimensions between the top and the bottom of the masts both on the front and on the back side.

6- Using a lifting device such as a rough terrain forklift or a crane, lift the motorized unit and carefully set it down on the re-assembled base.

7- Support the access walkway and remove the piece of lumber from the access walkway. Release all the cylinder and secondary hooks so that they can engage on mast rungs.

8- The motorized unit is now ready to be used in a standard confi guration.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Safety Devices

Safety Hooks System

Activation of the safety hooks system

1- In the event of an activation of the safety hooks system, the competent person must contact the service center or the Hydro Mobile technical support team.

2- All precautions must be immediately taken to ensure the safe return of all workers to base level according to the evacuation plan (see step 14 on p. 7 of the *Performance and Safety* section).

3- Make sure that the safety hooks system is properly engaged (fi g. 2.2) and that the cylinder hooks and the secondary hooks are engaged on a mast rung on both masts (fi g. 4.15, p. 51).

4- Determine what caused the activation of the safety hooks system.

5- Off-load the motorized unit as much as possible.

6- Visually inspect the masts, the cylinder and secondary hooks and all the components related to the lifting mechanism for any damages possibly caused by the incident.

7- Take the necessary actions to have the motorized unit repaired properly, according to Hydro Mobile standards. It is **mandatory** to visually inspect the safety hooks and replace the hook that was activated. Any **triggered** safety hook **cannot be used a second time and must be replaced immediately** before operating the motorized unit. It is **mandatory** to also replace the safety hook bolt and nut.

8- Once all the mandatory corrective actions described in the previous steps have been carried out, **carefully lower** the motorized unit to base level.

9- In all cases, the motorized unit must be thoroughly inspected and all necessary repairs must be made according to Hydro Mobile's recommendations before resuming normal operation of the motorized unit.

Safety hooks in normal working position *Fig. 2.1*

Safety hooks in emergency activation position *Fig. 2.2*

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Safety Devices

Fall Protection Equipment
(not provided)

The use of fall protection equipment (FPE) is **not required** when climbing or descending the mast to reach the work platform when the height of lift is at **30' (9 m) or less** above the bearing surface or at a height equal or lower to what local regulations or job site specifi cations allow, the most stringent of conditions taking precedence over the others.

The use of fall protection equipment (FPE) is **mandatory** when climbing or descending the mast to reach the work platform when the height of lift is **over 30' (9 m)** above the bearing surface or higher than what local regulations or job site specifi cations allow, the most stringent of conditions taking precedence over the others.

If the the work platform must be accessed by climbing up the mast, it is recommended to install a retractable rest platform when the setup has been raised **at more than 30' (9 m)** above base level or beyond the maximum allowable height prescribed by local regulation for mast climbing without a rest platform. When the height of the setup is over 69' (21 m) above the bearing surface, other means must be used to access the work platform, such as access from a building, a conventional scaffold stair system or a rapid mast climber. For more information on the installation and use of the rest platform, see p. 80 of the *Accessories* section. Refer also to step 17 of the *Performance and Safety Rules* on p. 7 for more information on how to safely access the platform.

Installation and use of fall protection equipment

1- Use a lifeline with a rope grab or attach a rope to a self-retracting lifeline hook for easy retrieval from base level. Use the designated tie points on the motorized unit to secure the fall protection equipment.

2- When modifying planking, use the designated fall protection tie points located between the forklift tubes at the front of the motorized unit (fi g. 2.7).

Fig. 2.3

Self-retracting lifeline

Fig. 2.4

Fig. 2.5

Tie a lifeline with a rope grab or a self-retracting lifeline to the structure under the motorized unit

Fig. 2.6

Rope tied to self-retracting lifeline for easy retrieval from base level

Fig. 2.7

Tie point located at the front of the motorized unit

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridges

Bridges are assembled to the motorized unit to be used in cantilever bridge setups or as extensions to the platform work surface. Modular bri a dedicated wall side that must be installed towards the face of the wor

Standard bridge

Fig. 3.1

10' (3 m) modular bridge assembly shown in illustration

Bridge Types

10' (3 m) modular bridge

Size	120 1/8" x 85 7/16" x 39 3/16" (305 cm x 217 cm x 100 cm)
Weight	1335 lb (606 kg)
Guardrail	2x 60" (1,5 m) – 35 lb (16 kg) each
Outrigger	2x 2 1/2" x 1 1/2" x 3/16" x 72" long (6,4 cm x 3,8 cm x 0,5 cm x 183 cm)
Bolt and nut set	4x 1" x 2" long (GR5 UNC)
Link plates and pins set	4x

Fig. 3.2

5' (1,5 m) modular bridge

Size	60 1/16" x 85 7/16" x 39 3/16" (153 cm x 271 cm x 100 cm)
Weight	765 lb (347 kg)
Guardrail	1x 60" (1,5 m) – 35 lb (16 kg)
Outrigger	1x 2 1/2" x 1 1/2" x 3/16" x 72" long (6,4 cm x 3,8 cm x 0,5 cm x 183 cm)
Bolt and nut set	4x 1" x 2" long (GR5 UNC)
Link plates and pins set	4x

Fig. 3.3

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridge Types

6’ (1,8 m) bearing bridge adapter

Size	73 7/16” x 86 7/8” x 39 3/16” (186,5 cm x 221 cm x 100 cm)
Weight	865 lb (392 kg)
Guardrail	1x adjustable guardrail – 75 lb (34 kg)
Outrigger	1x 2 1/2” x 1 1/2” x 3/16” x 72” long (6,4 cm x 3,8 cm x 0,5 cm x 183 cm)
Bolt and nut set	4x 1” x 2” long (GR5 UNC)
Link plates and pins set	4x

Fig. 3.4

Multi-purpose insert bridge (MPI)

Size	33” x 91” x 42 3/4” (83,8 cm x 231 cm x 108,6 cm)
Weight	800 lb (363 kg)
Guardrail	1x 32” (0,8 m) – 35 lb (16 kg)
Outrigger	2x 2 1/2” x 1 1/2” x 3/16” x 72” long (6,4 cm x 3,8 cm x 0,5 cm x 183 cm)
Bolt and nut sets	6x 1” x 2” long (GR5 UNC) and 2x 1” x 3 1/2” long (GR8 UNC)
Link plates and pins	4x

Fig. 3.5

Bridge Setups

Cantilever Bridge

A cantilever bridge is the assembly of a bridge or an insert at one end of a single motorized unit. To ensure stability, refer to the *Load Capacities* section on p. 64 for the number of bridges allowed in a cantilever confi guration.

Installation

1- Make sure at least one mast section has been installed on top of each of the bottom mast sections welded on the base of the motorized unit.

Fig. 3.6 *Fig. 3.7*

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridge Setups

Cantilever Bridge

Installation (cont'd)

2- Raise the motorized unit by 6' (1,8 m) above base level.

3- Using a rough terrain forklift or a crane, lift the bridge by the forklift tubes (fig. 1.4, p. 9) and align the top and bottom parts with the bridge or the motorized unit it must be attached to, according to the layout. For the installation of 10' (3 m) and 5' (1,5 m) modular bridges, make sure that the dedicated wall side (with outrigger pockets) is turned towards the face of the work (fig. 3.1, p. 34).

4- Assemble the top part of the bridge to the other bridge or to the motorized unit using four 1" x 2" long (GR5 UNC) bolt and nut assemblies through the **four outer assembly sockets** (fig. 3.6) in the front and back. **Do not tighten the bolt and nut assemblies yet**.

5- Attach the bottom part of the bridge to the other bridge or to the motorized unit using bridge link plates and pins sets (4) at the cantilever setting (fig. 3.8).

Fig. 3.8

Bridge link plate cantilever setting

Fig. 3.9

Fig. 3.10

6- **Tighten the nut and bolt assemblies** (4) at the top of the bridge to 100 lb-ft (136 N-m) of torque and install the appropriate guardrails. Refer to p. 77 of the *Accessories* section for more information on the installation and use of guardrails.

7- Repeat steps 3 to 6 to attach a second bridge assembly on the other side of the motorized unit.

8- Install as many additional bridges as required and allowed. It is important to install each bridge **alternately** on one side, then on the other side of the unit, 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. 64 for information on the number of bridges allowed in a cantilever bridge configuration.

9- If required, install optional cantilever outrigger supports. For more information about the installation and use of a cantilever outrigger support, refer to p. 74 of the *Accessories* section.

10- For any configuration other than described in the previous steps or in the *Load Capacities* section on p. 64, contact the service center or the Hydro Mobile technical support team.

WARNING

In a cantilever configuration, 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.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridge Setups

Bearing Bridge
(requires the use of two motorized units)

A bearing bridge is the assembly of a bridge structure that will be installed between two motorized units in a multiple units installation. The standard M2 Series bearing bridge structure will include two 6' (1,8 m) bearing bridge adapters at each end of the bearing bridge.

Installation

1- Position and level the first motorized unit as described in the *Motorized Unit* section, on p. 18.

2- Install the first mast sections as described in the *Masts and Mast Ties* section, on p. 54.

3- Choose a clear, level surface close to the work area where the bridges can be temporarily set down to assemble the bearing bridge structure. To make sure that all the bridge link plates are above the ground, set down wood cribbing or mast sections before lowering the bridges in place.

4- Using a rough terrain forklift or a crane, lift and lower a bridge on top of the wood cribbing or the laid down mast sections.

5- Lift another bridge and align it carefully with the bridge it must be attached to. Assemble the top part of the bridge to the other bridge using four 1" x 2" long (GR5 UNC) bolt and nut assemblies through the **four outer assembly sockets** (fig. 3.6, p. 35) in the front and back. **Do not tighten the bolt and nut assemblies yet**.

6- Attach the bottom part of the bridge to the motorized unit using bridge link plates and pins sets (4) at the bearing setting (fig. 3.11).

Bridge link plate bearing setting

Fig. 3.11

B = Bearing bridge setting

Fig. 3.12

Fig. 3.13

7- **Tighten the nut and bolt assemblies** (4) at the top of the bridge to 100 lb-ft (136 N-m) of torque.

WARNING

When raising or lowering motorized units linked by a bearing bridge, any bridge slope should not to exceed a maximum of 2º or 1" / 24" (2,5 cm / 61 cm).

CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridge Setups

Bearing Bridge

Installation (cont'd)

8- Assemble the complete bearing bridge structure using as many bridges as is required and allowed. For more information on the number of bridges allowed in a setup, refer to the *Load Capacities* section on p. 64.

9- Measure the length of the bearing bridge structure and subtract 9" x 2 = 18" (23 cm x 2 = 46 cm) to obtain the ideal distance between two motorized units.

Fig. 3.14

10- Repeat steps 1 and 2 for the installation of the second motorized unit, while making sure that the ideal distance is kept between this motorized unit and the first one installed (see step 9), in order to have an overlap of 9" (23 cm) at each end of the bearing bridge structure.

11- Using a rough terrain forklift or a crane, lift the bearing bridge assembly from the ground and lower it down onto the two motorized units making sure the overlap is between 6" and 12" (15 and 30 cm) at each end.

12- Using the shackle, tie the bridge safety chain to the safety loop on the motorized unit, making sure the slack does not exceed 1" (2,5 cm) when pulling it tightly towards the motorized unit (fig. 3.15, p. 39). Perform this step for each safety chain at both ends of the bearing bridge structure.

13- Install all other cantilever bridges ("E", fig. 3.14) on the ends of the motorized units opposite to the bearing bridge structure, as described in steps 3 to 6 of the instructions for the installation of a **cantilever** bridge on p. 36. Refer to the *Load Capacities* section on p. 65 for more information about the types and number of bridges allowed in a setup.

SAFETY INSTRUCTIONS

1- It is imperative that two competent persons per motorized unit handle all rise and descent operations and coordinate the motion of the two motorized units linked by a bearing bridge to ensure that the structure slope does not exceed 2 degrees.

2- It is also important to make sure that **all safety chains are properly hooked at all times** (see step 12 of the installation instructions).

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Installation (cont'd)

14- Install all the appropriate guardrails. For more information about the use and installation of guardrails, refer to p. 77 of the *Accessories* section.

Fig. 3.15

Fig. 3.16

Dismantling

1- To dismantle a bearing bridge structure, lower both motorized units linked by that structure until the units are 2 rungs above base level [20" (50 cm)]. It is important to read carefully and assimilate the safety warnings included below and on the previous page about the rise and descent operations of an installation with a bearing bridge structure.

2- Completely unload the working platform and make workers step off the structure.

3- First dismantle any cantilever bridges added to the structure (see step 13 of the installation instructions, on p. 38), beginning with those on the outer ends of the structure ("E", fig. 3.14). Unhook the bearing bridge safety chains and unplug the inclinometers, if necessary. Using a roug terrain forklift or a crane, slightly raise the bearing bridge and lower it on the ground to dismantle it.

WARNING

In a bearing bridge setup (multiple motorized units), it is imperative that two competent persons per motorized unit handle all rise and descent operations and coordinate the motion of the two motorized units.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridge Setups

Multi Purpose Insert Bridge (MPI)

Designed to work with both 14' (4,3 m) and 24' (7,3 m) M2 Series motor multi-purpose insert (MPI) bridges can be assembled to create back extensions, regular or lateral cantilever bridges and narrow bearing bridges. Optional link plates may be required to achieve some confi gurations.

Fig. 3.11

Bridge Link Plates

TYPE 1 (factory default)

Fig. 3.18

Part number	11011500-1-10000-4
Distance A	7 5/8" (19,4 cm)
Distance B	5 1/2" (14 cm)

TYPE 2 (optional)

Fig. 3.19

Part number	11011300-1-10000-4
Distance A	6" (15,2 cm)

TYPE 3 (optional)

Fig. 3.20

Part number	11011600-1-10000-4
Distance A	4 1/8" (10,5 cm)
Distance B	8 1/4" (21 cm)

TYPE 4 (optional)

Fig. 3.21

Part number	11011700-1-10000-4
Distance A	6 1/2" (16,5 cm)

As Forward / Back Extension Bridge

Installation as a forward extension

1- Using a rough terrain forklift or a crane, lift the fi rst multi purpose insert bridge (MPI) and align the top and bottom parts with the motorized unit, as shown in fi g. 3.22. Make sure that the dedicated wall side (fi g. 3.17) is turned towards the face of the work.

Fig. 3.22

Fig. 3.23

Required link plates

TYPE 1

Fig. 3.24

Position of pins for Type 1 link plates

To face of work

Forward extension

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Installation as a forward extension (cont'd)

2- Assemble the top part of the MPI bridge to the motorized unit using four 1" x 2" long (GR5 UNC) bolt and nut assemblies through the outer assembly sockets (fig. 3.17, p. 40). **Do not tighten the bolt and nut assemblies yet**.

3- Using four bridge link plates and pins sets (TYPE 1 link plates, fig. 3.24), attach the bottom part of the bridge to the motorized unit (fig. 3.22).

4- **Tighten the nut and bolt assemblies** (4) at the top of the bridge to 100 lb-ft (136 N-m) of torque.

5- Lift and align the top and bottom parts of the second MPI bridge with the first MPI bridge installed. Assemble the **top part** of the bridge using two 1" x 3 1/2" long (GR8 UNC) bolt assemblies and the **bottom part** of the bridge using two 1" x 2" long (GR5 UNC) bolt and nut assemblies (fig. 3.26).

6- **Tighten all the nut and bolt assemblies** (4) at the top and bottom of the bridge to 100 lb-ft (136 N-m) of torque.

7- Repeat steps 5 and 6 to continue installing as many MPI bridges as is required and allowed. For more information on the types and number of bridges allowed in a configuration, as well as the use of counterweights, refer to the *Load Capacities* section on p. 64.

8- If required, repeat steps 5 and 6 to install the MPI bridge in the back of the setup where a counterweight must be applied (fig. 3.27). Refer to the *Load Capacities* section on p. 64 for more information about counterweight requirements in a forward / back extension configuration.

9- Once the installation is complete, install the appropriate guardrails. Refer to p. 77 of the *Accessories* section for more information on the installation and use of guardrails.

Fig. 3.25

Fig. 3.26

Fig. 3.27

Installation as a back extension

1- Follow steps 1 through 8 of the installation procedure for a forward extension. Make sure to install the bridges with the dedicated wall side turned **away** from the face of the work.

2- Once the installation is complete, install the appropriate guardrails. Refer to p. 77 of the *Accessories* section for more information on the installation and use of guardrails.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridge Setups

Multi Purpose Insert Bridge (MPI)

As Cantilever Bridge

(requires the use of optional cantilever link plates)

Installation

1- Using a rough terrain forklift or a crane, lift the first multi purpose insert bridge (MPI) (fig. 3.30) and align the top and bottom parts with the motorized unit. Make sure that the dedicated wall side (fig. 3.17, p. 40) is turned towards the face of the work.

2- Assemble the top part of the MPI bridge to the motorized unit using four 1" x 2" long (GR5 UNC) bolt and nut assemblies through the outer assembly sockets (fig. 3.17, p. 40). **Do not tighten the bolt and nut assemblies yet**.

3- Using four bridge link plates and pins sets (TYPE 1 link plates, fig. 3.29), attach the bottom part of the bridge to the motorized unit (fig. 3.31).

4- **Tighten the nut and bolt assemblies** (4) at the top of the bridge to 100 lb-ft (136 N-m) of torque.

Position of pins for Type 1 link plates

Fig. 3.28

Fig. 3.30

Required link plates

TYPE 1

TYPE 2

Fig. 3.29

Fig. 3.31

TYPE 1 link plates

Fig. 3.32

TYPE 2 link plates

5- Lift and align the top and bottom parts of the second MPI bridge with the first MPI bridge installed. Assemble the top part of the bridge as described in step 2.

6- Using four bridge link plates and pins sets (TYPE 2 link plates, fig. 3.29), attach the bottom part of the bridge to the other bridge installed. It is important to note that TYPE 2 link plates must be used to attach the bottom part of each subsequent MPI bridge installed (fig. 3.32). **Tighten all bolt assemblies** to 100 lb-ft (136 N-m) of torque.

7- Repeat steps 5 and 6 to continue installing as many MPI bridges as is required and allowed. For more information on the types and number of bridges allowed in a configuration, refer to the *Load Capacities* section on p. 64.

8- Once the installation is complete, install the appropriate guardrails. Refer to p. 77 of the *Accessories* section for more information on the installation and use of guardrails.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridge Setups

Multi Purpose Insert Bridge (MPI) As Lateral Cantilever Bridge

Installation

1- Using a rough terrain forklift or a crane, lift the fi rst multi purpose insert bridge (MPI) and align the top and bottom parts with the motorized unit, as shown in fi g. 3.35. Make sure that the dedicated wall side (fi g. 3.17, p. 40) is turned towards the face of the work.

2- Assemble the top part of the MPI bridge to the motorized unit using two 1" x 2" long (GR5 UNC) bolt and nut assemblies. **Do not tighten the bolt and nut assemblies yet**.

3- Using two bridge link plates and pins assemblies (TYPE 1 link plates, fi g. 3.34), attach the bottom part of the bridge to the motorized unit (fi g. 3.36).

4- **Tighten the nut and bolt assemblies** (2) at the top of the bridge to 100 lb-ft (136 N-m) of torque.

Fig. 3.33

Required link plates
TYPE 1

Fig. 3.34

Fig. 3.35

Fig. 3.36

Fig. 3.37

5- Lift and align the top and bottom parts of the second MPI bridge with the fi rst MPI bridge installed. Assemble the **top part** of the bridge using two 1" x 3 1/2" long (GR8 UNC) bolt assemblies and the **bottom part** of the bridge using two 1" x 2" long (GR5 UNC) bolt and nut assemblies (fig. 3.37). It is important to note that a **maximum of two bridges** can be installed in a lateral cantilever confi guration. For more information on the types and number of bridges allowed in a confi guration, refer to the *Load Capacities* section on p. 64.

6- **Tighten all the nut and bolt assemblies** (4) at the top and bottom of the bridge to 100 lb-ft (136 N-m) of torque.

7- Once the installation is complete, install the appropriate guardrails. Refer to p. 77 of the *Accessories* section for more information on the installation and use of guardrails.

CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridge Setups

Multi Purpose Insert Bridge (MPI)

As Narrow Bearing Bridge

(requires the use of optional bearing link plates)

Installation

1- Choose a clear, level surface close to the work area where the bridges can be temporarily set down to assemble the bearing bridge structure. To make sure that all the bridge link plates are above the ground, set down wood cribbing or mast sections before lowering the bridges in place.

2- Using a rough terrain forklift or a crane, lift the fi rst multi purpose insert bridge (MPI) and align the connector angle (fi g. 3.17, p. 40) with the 6' (1,8 m) bearing bridge adapter it must be attached to.

3- Assemble the top part of the MPI bridge using two 1" x 2" long (GR5 UNC) bolt and nut assemblies. **Do not tighten the bolt and nut assemblies yet**.

4- Using two bridge link plates and pins assemblies (TYPE 3 link plates, fi g. 3.39), attach the bottom part of the bridge to the 6' (1,8 m) bridge as shown in "A", fi g. 3.42.

5- **Tighten the nut and bolt assemblies** (2) at the top of the bridge to 100 lb-ft (136 N-m) of torque.

Fig. 3.38

Position of pins in "A"

Required link plates

TYPE 3 **TYPE 4**

Fig. 3.39

Fig. 3.40

Position of pins in "C"

Fig. 3.41

Fig. 3.42

TYPE 3 link plates

Fig. 3.43

TYPE 4 link plates

Fig. 3.44

TYPE 3 link plates

6- Lift and align the connector angle of the second MPI bridge with the fi rst MPI bridge installed.

7- Assemble the top part of the bridge using two 1" x 3 1/2" long (GR8 UNC) bolt and nut assemblies. **Do not tighten the bolt and nut assemblies yet**.

8- Using two bridge link plates and pins assemblies (TYPE 4 link plates, fi g. 3.39), attach the bottom part of the bridge to the motorized unit as shown in "B", fi g. 3.43.

9- **Tighten the nut and bolt assemblies** (2) at the top of the bridge to 100 lb-ft (136 N-m) of torque.

NOTE

Multi purpose insert (MPI) bridges bearing a serial number prior to EXT01-134 will require the use of an optional reinforcing kit when used in bearing bridge confi gurations.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridge Setups
Multi Purpose Insert Bridge (MPI)
As Narrow Bearing Bridge

Installation (cont'd)

10- Repeat steps 6 to 9 to continue installing as many MPI bridges as is required and allowed. For more information on the types and number of bridges allowed in a confi guration, refer to the *Load Capacities* section on p. 64.

11- Lift and align the 6' (1,8 m) bearing bridge adapter with the last MPI bridge installed. Assemble the top part of the bridge to the last MPI bridge as described in step 7.

12- Using two bridge link plates and pins sets (TYPE 3 link plates, fi g. 3.39), attach the bottom part of the bridge to the last MPI bridge as shown in "C", in fi g. 3.44. **Tighten the nut and bolt assemblies** to 100 lb-ft (136 N-m) of torque.

13- Using a rough terrain forklift or a crane, lift the bearing bridge structure and install it between two motorized units. Refer to p. 37 for more information about the installation of a bearing bridge structure.

14- Once the installation is complete, install the appropriate guardrails. Refer to p. 77 of the *Accessories* section for more information on the installation and use of guardrails.

Alternate Bridge Confi gurations

Alternate bridge configurations can be used with M2 Series motorized units to adapt setups to various structures (curvatures, recesses, columns, etc.). For bridge confi gurations other than described in this owner's manual, contact the service center or the Hydro Mobile Technical Support team.

Angled Setup
(requires the use of two MPI bridges)

Angled setups can be achieved by installing a bearing bridge structure at an angle between two M2 Series motorized units (fi g. 3.45).

Installation

1- Follow steps 1 through 8 of the instructions for the installation of a bearing bridge setup on p. 37, making sure to install the second motorized unit in such a way that the angled bearing bridge will not be offset by more than 6" (15 cm) at both ends (fi g. 3.45).

2- To support the angled bearing bridge structure, install a cantilever multi purpose insert bridge (MPI) on each motorized unit as described in steps 1 through 4 of the installation instructions on p. 42.

3- Lift and install the bearing bridge structure at angle on top of the two cantilever MPI bridges. Refer to steps 9 and 10 of the bearing bridge installation instructions on p. 38 for more information. Secure the bearing bridge as described in step 12, on p. 38.

4- Once the installation is complete, install the appropriate guardrails. Refer to p. 77 of the *Accessories* section for more information on the installation and use of guardrails. Refer also to the *Angle / Corner Setup Capacities and Counterweight Requirements* table on p. 46.

Fig. 3.45

Fig. 3.46

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Bridge Setups

Alternate Bridge Confi gurations

Offset Setup

An offset setup is achieved by installing a bearing bridge structure off center between two M2 Series motorized units. Contact the Hydro Mobile technical support team for information and installation instructions for offset setups.

Inside / Outside Corner Setup

Corner setups can be achieved by installing a bearing bridge structure between two motorized units installed at a 90° angle from one another.

Installation

1- Follow steps 1 through 8 of the instructions for the installation of a bearing bridge setup on p. 37, taking into account that for a corner setup, the bearing bridge must overlap the motorized unit by 12” (30,4 cm).

2- Attach a 6’ (1,8 m) bridge on the corner end of the fi rst motorized unit (fi g. 3.47). Refer to p. 36 for more information on the installation of a cantilever bridge.

Fig. 3.47

Fig. 3.48

ANGLED / CORNER SETUP CAPACITIES AND COUNTERWEIGHT REQUIREMENTS 24’ (7,3 m) motorized unit setups only					
Bearing bridge size (B)		**Counterweight required on cantilever bridge (A)**			
Length	**Capacity**	**5’ (1,5 m)**	**10’ (3 m)**	**15’ (4,6 m)**	**20’ (6 m)**
12’ (3,7 m)	13,000 lb (5897 kg)	**1600 lb (726 kg)**	**900 lb (408 kg)**	**0**	
22’ (6,7 m)	11,500 lb (5216 kg)				
32’ (9,8 m)	10,000 lb (4536 kg)				
42’ (12,8 m)	8500 lb (3856 kg)				
52’ (15,8 m)	7000 lb (3175 kg)				
62’ (18,9 m)	5500 lb (2495 kg)				
Note: If a bearing bridge is used at the “A” position in fi g. 3.49 and fi g. 3.50 instead of a cantilever bridge, that bearing bridge must measure at least 42’ (12,8 m) in length. Refer to the Load Capacities section on p. 64 for more information on the load capacities of motorized units in multiple-unit setups.					
For 14’ (4,3 m) motorized unit setups, contact the Hydro Mobile Technical Support team.					

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Installation (cont'd)

3- Install a cantilever bridge on the fi rst motorized unit ("A", in fi g. 3.49 and fi g. 3.50). This bridge will be used to apply counterweight.

4- Following steps 9 and 10 of the bearing bridge installation instructions on p. 38, lift and install the bearing bridge structure between the two motorized units ("B" in fi g. 3.49 and fi g. 3.50). Secure the bearing bridge as described in step 12, on p. 38.

5- Refer to the *Angled / Corner Setup Capacities and Counterweight Requirements* table (fi g. 3.48, p. 46) for more information on the appropriate counterweight to be applied for the confi guration. Center of counterweight must be at 2' (0,6 m) from the edge of the cantilever bridge ("A", fi g. 3.49 and fi g. 3.50).

6- For more information on the load capacities of corner setups, refer to the *Angled / Corner Setup Capacities and Counterweight Requirements* table (fi g. 3.48, p. 46). It is important to note that all loads applied to the bearing bridge ("B" in fi g. 3.49) must be **evenly distributed**. Refer also to the *Load Capacities* section on p. 64 for more information on the load capacities of motorized units in multiple-unit setups.

7- Once the installation is complete, install the appropriate guardrails. Refer to p. 77 of the *Accessories* section for more information on the installation and use of guardrails.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Power Pack and Operating Components

Motorized unit preparation instructions

1- Remove the transport hook from the cylinder by taking off the lin sliding out the clevis pin.
2- Retrieve a cylinder hook from the storage location.
3- Make sure the rubber is in place and in good condition. Refer to p. 53 for more information about the replacement of the rubber in a cylinder hook. Place a cylinder hook on top of the cylinder. Secure the hook in place with the clevis pin and the linch pin clip.
4- Retrieve the secondary hook and slide it on the secondary hook support. Secure the hook in place with the clevis pin and the linch pin, making sure the back horizontal part of the hook rests on top of the hook piston.
5- Store the transport hook.
6- Repeat steps 1 through 4 for the cylinder and secondary hooks on the other mast.
7- Remove the mast locking bars from both masts (fi g. 4.2) and store them in their storage location (fi g. 4.3).

Fig. 4.1

Fig. 4.2

Fig. 4.3

WARNING
Make sure both mast locking bars are removed before raising the platform.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Power Pack and Operating Components

Engine startup preparation instructions

1- Open the engine access door (fi g. 4.6).

2- Unfold the upper section of the control post (fi g. 4.4) and lock it in place using a 15/16" wrench. **On 14' (4,3 m) motorized units**, the control post must be **rotated by 90 degrees** before being locked in place.

3- Pull the lower spring latch and slide the control post up to its operating position until the lower spring latch is engaged. Secure the control post in position by tightening the bolt on the control post pocket located on the motorized unit (fi g. 4.5).

4- Check the hydraulic oil level to make sure it is at least 3/4 full. Replenish if necessary.

6- Check the gasoline level and refi ll if necessary.

7- Check the engine oil level and refi ll if necessary.

8- If the motorized unit is brand-new or was not used for a signifi cant amount of time, connect the battery.

Fig. 4.4

Upper section of control post

Fig. 4.5

Fig. 4.6

Fig. 4.7

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Power Pack and Operating Components

Engine startup procedure

1- Move the engine gasoline shutoff valve lever to the ON position (fig. 4.9).

2- If the engine is cold, pull out the choke handle to the closed position (blue control cable, fig. 4.10). If the engine is warm, leave the choke handle in the open position. In a bearing configuration, make sure that the bearing bridge is level.

Fig. 4.8

Fig. 4.9

3- Pull out the throttle handle about halfway (yellow control cable, fig. 4.10).

4- Pull out the ignition handle (red control cable, fig. 4.10) and release it as soon as the engine is running (hold for a maximum of 10 seconds). If the engine does not start, wait another 10 seconds before trying again.

4- Once the engine has started, slowly push down the choke handle all the way to the open position.

5- Adjust the engine speed by pulling the throttle handle up to reach maximum RPM.

6- Use the ignition handle to shut down the engine. The choke handle must never be used to shut down the engine, as this will leave the ignition on and drain the battery.

Fig. 4.10

Storage of the control post

To store the control post, loosen the bolt on the control post pocket located on the motorized unit and pull on the lower spring latch. Let the control post slide down slowly until the lower spring latch locks the post in place. Using a 15/16” wrench, loosen the bolt on the upper section of the control post. Fold the upper section of the control post in the storage location.

WARNING

The choke handle (blue control cable) must never be used to shut down the engine, as this will leave the ignition on and drain the battery.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Power Pack and Operating Components

Raising the platform

1- Before initiating the ascent, make sure that the motorized outriggers clear the building, balconies, mast ties, etc. Make sure that the mast locking bars are removed and that the mast tie doors are open when passing mast ties.

2- Lock the lowering cam on both the cylinder hook and the secondary hook by sliding each locking device latch toward the cam and locking it (fi g. 4.14).

3- Make sure that the engine is running at full throttle and that both the cylinder hook and the secondary hook are side by side and properly engaged on the same rung on both masts (fi g. 4.16, p. 52).

4- Push the control levers and let the hydraulic cylinders become fully extended (to a height equal to two rungs, fi g. 4.11). The engine will slow down when the cylinders are fully extended. Make sure that both cylinders are fully extended.

5- Pull the control levers so the cylinder hooks drop slightly, enough to engage onto a mast rung. Before raising the platform, check visually to make sure that the cylinder hooks are properly engaged on the mast rungs. With the control levers still at the down position, let the platform rise until the secondary hooks are also engaged onto a rung. The lift can vary from 10” to 20” (25,4 to 50,8 cm), or a height equal to one or two mast rungs.

6- Repeat steps 3, 4 and 5 to continue raising the platform.

7- Add mast sections and mast ties when required. Refer to p. 54 of the *Masts and Mast Ties* section for instructions on the installation of mast sections.

Fig. 4.11

Fig. 4.12
Incorrect

Correct
Fig. 4.13

Fig. 4.14
Hook in rising position

WARNING

Make sure the cylinder hook and the secondary hook are properly engaged on the mast rung on both masts before raising or lowering platform (fi g. 4.13). Failure to engage hooks properly can cause the platform to drop. For additional safety, it is also recommended that any rise or descent operation be initiated only when the cylinder and secondary hooks are side by side on the same mast rung on both masts (fi g. 4.16, p. 52).

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Power Pack and Operating Components

Lowering the platform

1- Before initiating the descent, make sure that the motorized unit outriggers clear the building, balconies, mast ties, etc. Make sure that the mast tie doors are open when passing mast ties.
2- Unlock the lowering cam on the cylinder hooks and the secondary hooks by sliding the locking device latch away from the cam and locking it (fi g. 4.15).
3- Make sure that the engine is running at full throttle and that both the cylinder hook and the secondary hook are side by side and properly engaged on the same rung on both masts (fi g. 4.16).
4- Pull the control levers so the lowering cams of the secondary hooks can swing toward the mast. The engine will slow down when the cylinders have retracted completely. Make sure that both cylinders are fully retracted.
5- Push the control levers to extend the cylinders completely. The engine will slow down when the cylinders are fully extended. Make sure that both cylinders are fully extended.
6- Pull the control levers so the cylinders retract enough to engage the secondary hook onto the mast rung on both masts (and not the lowering cams).
7- Push the control levers again to extend the cylinders completely and force the lowering cams to swing toward the mast.
8 Pull the control levers so the cylinders retract completely. Push the control levers until the cylinder hook is engaged on the mast rung on both masts. Both the cylinder and secondary hooks will be side by side on the same rung on both masts.
9- Repeat steps 3 through 8 to continue lowering the platform.
10- Remove mast ties and mast sections when required during the descent. Refer to the *Masts and Mast Ties* section on p. 54 for instructions on dismantling masts and removing mast ties.
11- Monitor the last 10' (3 m) of descent to base level to ensure the proper seating of the access walkway.

Fig. 4.15

Fig. 4.16

Hooks side by side on the same mast rung (lowering cams are locked in this view)

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Power Pack and Operating Components

Maintenance of the cylinder hooks

To ensure safe and trouble-free operation of the cylinder hooks, to inspect the hooks **daily** or before every working shift. Worn rubbers must be replaced immediately, before operating the motorized unit. Worn and defective rubbers will prevent the cylinder hooks from working correctly and engage properly on mast rungs.

Inspection

1- Hold the cylinder fi rmly (fi g. 4.17) and pull the hook all the way back.

2- Let go of the hook and verify its position.

Fig. 4.17

Cylinder hook in idle position

Fig. 4.18

3- The cylinder hook **must not** lean towards or away from the mast, but stand up straight as in “B” in fi g. 4.18. If the position of the hook is as in “A” or “C” in fi g. 4.18, the rubber must be replaced immediately.

Replacement of the rubber

1- Remove the linch pin and slide out the clevis pin (fi g. 4.19). Lift the hook from the cylinder.
2- Remove the defective rubber.
3- Cut **slight** beveled edges lengthwise on the replacement rubber (see fi g. 4.20) so that it fi ts snugly against the welding tracks at the bottom of the pocket.
4- Insert the replacement rubber in the top part of the cylinder. Slide in the hook and verify that the holes in the hook and the holes in the top part of the cylinder align properly, with no more than 1/16” to 1/8” (1,6 mm to 3,2 mm) of play. **The rubber must be lightly compressed**. Trim the bottom part of the rubber until the holes align correctly.
5- Once the rubber fits correctly, replace the hook and secure it in place with the clevis and linch pins.
6- Test the operation of the cylinder hook as described in steps 1 through 3 of the inspection instructions.

Fig. 4.19

Fig. 4.20

Cut beveled edges on the replacement rubber only deep enough for fi tting

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Masts

Installation

1- To connect one mast section to another, insert the connecting lug mast section into the bottom mast section, making sure the masts line and that rungs for the hooks are on the same side.

2- Flip the 5/8” x 6 1/2” toggle bolt, mast clamp and flange nut onto the connecting lug (fig. 5.2) and tighten by hand. Perform this operation for all (4) corners.

3- Tighten all toggle bolts to 120 lb-ft (163 N-m) of torque. Use a cross pattern sequence when tightening (fig. 5.1).

Fig. 5.1

4- Repeat steps 1, 2 and 3 for each mast section to be installed at every 5’ (1,5 m) of rise.

5- For faster assembly, 20’ (6,1 m) sections of masts can be pre-assembled. Similarly, masts can be dismantled in 20’ (6,1 m) sections. For personal safety, the use of a sling is recommended when manipulating pre-assembled mast sections.

6- Always make sure that the mast assembly is plumb on both the front and side axis.

7- When using **brand-new mast sections**, mast sections must be **pre-installed to the top of the work area**. Make sure to verify all mast bolts on the way down to make sure they are all tightened and that the proper torque was used as the galvanized coating on brand-new mast sections may have compressed. In all cases, tighten mast bolts to a torque of 120 lb-ft (163 N-m). Failure to tighten bolts properly may lead to serious injury or death.

Removal and transport

1- To remove one mast section, loosen the toggle bolt assembly and disengage from the connecting lug (fig. 5.2). Perform this operation for all four (4) corners.

2- Pull the top mast section off the bottom mast section. If mast sections are to be stored on the platform during dismantling, make sure they are distributed equally on the motorized unit to ensure good balance.

Fig. 5.2

3- Store mast sections on a flat surface away from work areas and construction traffic.

4- Masts can be carried in 20’ (6,1 m) sections provided they are set down horizontally on a flat surface.

5- For best results when carrying mast sections in bundles, it is recommended to strap them in groups of nine (9). Make sure that mast sections positioned in the middle are securely strapped to the other sections to prevent them from slipping out during transport.

WARNING

When using brand-new mast sections, mast sections must be pre-installed to the top of the work area. Verify all mast bolts on the way down to make sure they are all tightened to a torque of 120 lb-ft (163 N-m) as the galvanized coating may have compressed..

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Mast Ties

Installation of mast ties

1- Loosen and remove the 5/8” bolt and nut assemblies o attachment assembly.

2- Slide the mast tie attachment assembly diagonally into the mast, making sure to install the mast tie attachment as close as possible to the upper rung so as not to impede footing when climbing up or down.

3- Replace and tighten the bolt and nut assemblies between the mast tie attachment until the bracket holds the mast firmly [60 lb-ft (80 N-m) of torque].

MAST TIE INSTALLATION SCHEDULE

	Platform height	Standard setup (2 to 4 planks)	Setup with hoist, monorail, weather protection, forward extension or 5 to 8 planks	Split base
	14’ (4,3 m) units 0 - 25’ (0 - 7,6 m)	Freestanding	**No freestanding allowed**	**No freestanding allowed**
	24’ (7,3 m) units 0 - 35’ (0 - 10 m)	Freestanding	**No freestanding allowed**	**No freestanding allowed**
	0 - 250’ (21 m - 76 m)	Every tie at 20’ (6 m) or 30’ (9,1 m) if setup is pre-installed to the top of the work	Every tie at 10’ (3 m) or 20’ (6 m) if setup is pre-installed to the top of the work	First tie as close to base level as possible Second tie at 10’ (3 m) Every subsequent tie as per setup (see corresponding column at left)
	Maximum overhang	20’ (6,1 m)	10’ (3 m)	See corresponding column at left

Fig. 5.3

4- Refer to the diagrams illustrated on p. 59 and p. 60 for the plank confi guration appropriate for the setup. Refer to the *Mast Tie Components Requirements* table in fi g. 5.20, on p. 61, and choose the components required according to the plank configuration. If required, refer to the extended mast tie assembly procedure on p. 56.

5- Pin the required center mast tie to the mast tie attachment using a clevis pin and a linch pin (fi g. 5.5).

6- Pin the center mast tie to the wall tie (see p. 62 for information about wall ties) and adjust its length until the mast is perfectly plumb on the front axis. Use the threaded rod and the pin for adjustment, leaving a maximum length of threaded rod inside the mast tie tube for added strength.

NOTE – CHANGE IN TERMINOLOGY

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.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Mast Ties

Installation of mast ties (cont'd)

7- Install the required angle mast tie (25° angle, fig. 5.4) and use the rods to adjust its length until the mast is perfectly plumb on the. In an 8-plank setup, install a second angle mast tie on the opposite side of the mast.

8- Repeat steps 1 through 7 for the installation of mast ties on the other mast section and for each mast tie installation required. Refer to the *Mast Tie Schedule* table (fig. 5.3, p. 55) for the number of mast ties required in a configuration.

Fig. 5.4

Fig. 5.5

Assembly of an extended mast tie

1- Remove the linch pin and clevis pin joining the two parts of the mast tie assembly together.

2- Insert the male part of the mast tie assembly into an optional mast tie extension. Secure with a clevis pin and a linch pin.

3- Insert this new assembly into the female part of the mast tie assembly. Secure with a clevis pin and a linch pin.

4- Refer to steps 5 through 7 of the mast tie installation procedure on p. 55 to install the extended mast tie assembly.

Passing mast ties

To safely pass mast ties, slide planks away from the front area of the masts and open the mast tie doors. The use of appropriate fall protection equipment is recommended when modifying the plank configuration. The use of shorter planks will facilitate this task. It is recommended to use the designated tie points located on the motorized unit and on the bridge substructure to anchor the fall protection equipment.

WARNING - WIND SPEEDS

Wind speeds must not exceed 28 mph (45 km/h) during the erection and dismantling 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). A motorized unit setup with mast ties must not be exposed to wind speeds exceeding 35 mph (56 km/h) when in operation. A motorized unit setup equipped with weather protection must not be exposed to wind speeds exceeding 20 mph (32 km/h). Wind speeds must not exceed 94 mph (150 km/h) when the motorized unit setup is not in use.

When motorized unit is not in use

- It is **mandatory** to leave the platform between two anchor points when the motorized unit is not in use.
- Remove all loads from the setup when the motorized unit is not in use.
- It is **mandatory** to leave all the counterweights applied on the setup in place when the motorized unit is not in use.
- In a freestanding installation, the motorized unit must be brought down to base level when not in use.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Mast Ties

Angled Mast Ties

Some mast tie confi gurations require that the mast ties be attached at an angle (between 5 and 30 degrees from horizontal) through windows or other building openings (fi g. 5.6).

Fig. 5.6

These angled mast tie confi gurations require the use of the optional 30-degree mast tie kit and fl oor/wall ties. It is **mandatory** to use **three** mast ties for an angled mast tie installation. An angled mast tie installation **must not exceed** a 30-degree angle (fi g. 5.7).

It is also **mandatory** to use **only** a combination of the standard mast tie assembly and **one** optional mast tie extension for angled mast tie confi gurations. For any other confi guration requiring longer angled mast ties, contact the Hydro Mobile technical support team.

Fig. 5.7

0 to 30-degree **upper** angle

OR

0 to 30-degree **lower** angle

Calculation of a mast tie angle

A 5-degree slope represents a 12” to 1” (30 cm to 2,5 cm) ratio

A 30-degree slope represents a 12” to 7” (30 cm to 18 cm) ratio

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Mast Ties

Angled Mast Ties

Installation of an angled mast tie

1- Install the mast tie attachment assembly as described in steps 1 through 3 of the mast tie installation procedure on p. 55.

2- Slide the top part (two angle bars) of the 30-degree mast tie bracket in the mast over the mast tie attachment assembly and make sure they are inserted in both the front and back mast rungs (fig. 5.8).

3- Slide the bottom part of the 30-degree mast tie bracket in the mast under the mast tie attachment assembly.

4- Align the top two angle bars with the bottom part of the 30-degree mast tie bracket and bolt them together using 5/8" bolt and nut assemblies (4).

5- Attach the angle bracket (fig. 5.9) to the front of the mast tie attachment assembly with 9/16" bolt, washer and nut assemblies (3).

6- Tighten all the nut and bolt assemblies to 60 lb-ft (81 N-m) of torque.

7- Assemble and install the angled mast ties as described in steps 1 through 4 of the extended mast tie assembly procedure on p. 56. Refer to the *Mast Tie Schedule* table (fig. 5.3, p. 55) for the number of mast ties required in a configuration.

Fig. 5.9

Fig. 5.8

Fig. 5.10

Location of bolts shown in red

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Mast Ties

Fig. 5.11 **Diagram A**

Fig. 5.12 **Diagram B**

Fig. 5.13 **Diagram C**

APPROPRIATE MAST TIE INSTALLATION

Fig. 5.14 **INSIDE**

OR

Fig. 5.15 **OUTSIDE**

INCORRECT MAST TIE INSTALLATION

Fig. 5.16 **PARALLEL**

Mast ties must always be installed with the angled mast tie outside or inside, as shown in fi g. 5.14 and 5.15, using the same confi guration for both masts. Mast ties **must never be installed** in a **parallel** fashion as shown in fi g. 5.16.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Mast Ties

Fig. 5.17 **Diagram D**

Fig. 5.18 **Diagram E**

Fig. 5.19 **Diagram F**

NOTE

The setups shown in the diagrams above require the use of optional outriggers and accessories. Refer to p. 71 of the *Accessories* section for more information about outrigger and planking confi gurations.

Mast Ties

Reviewed for Code Compliance
Approved with Conditions
Approved with Conditions

Date: 05/12/16

MAST TIE COMPONENTS REQUIREMENTS							
			COMPONENTS				
Diagram	**Number of planks**	**Distances from motorized unit to face of work (H)**	**Mast tie male assembly**	**Mast tie female assembly**	**Mast tie pin assembly**	**Mast tie extension assembly**	**Center to center distances (C/C)**
A	0	9” (23 cm)	2	0	4	0	11” (28 cm)
A	1	17” (43 cm)	2	0	4	0	15” (38 cm)
B	2	27” (69 cm)	2	1	5	0	21” (53 cm)
C	3	37” (94 cm)	2	2	6	0	24” (61 cm)
C	4	47” (119 cm)	2	2	6	0	33” (84 cm)
D	5	57” (145 cm)	2	2	7	1	34” (86 cm
E	6	68” (173 cm)	2	2	8	2	38” (97 cm)
E	7	78” (198 cm)	2	2	8	2	42” (107 cm)
F	8	88” (223 cm)	3	3	12	3	47” (119 cm)

1- Parts required are based on number of planks x 10” (25,4 cm) + 6 to 8” (15,2 to 20,2 cm) of play.
2- The H and C/C distances are given only as a reference. Tolerance rate is of ± 2” (5 cm).

Fig. 5.20

NOTE

The information displayed in the table above is for reference only. Distances can vary according to the confi guration. It is important to make sure that there is a 25° angle between mast ties **at all times**.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Mast Ties

Anchoring System

Wall tie types

Before attaching masts to the building using the wall tie system, wall ties 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 and the anchoring system used can sustain 3000 lb (1360 kg) of tension / compression and 1000 lb (454 kg) of shear force.

There are 4 types of wall ties that can be used. **It is important to use only M2 Series wall ties for M2 Series setups**. As the installation is rising, install the wall ties as per the mast tie schedule (fi g. 5.3, p. 55).

Fig. 5.21

Welded wall tie

Fig. 5.22

Fixed wall tie

Floor or wall tie *Fig. 5.23*

Re-usable wall tie
(welded at bottom) *Fig. 5.24*

Re-usable wall tie
(welded in center) *Fig. 5.25*

WARNING / AVERTISSEMENT / AVISO		
Wall ties must be installed on a structure capable of withstanding 3000 lb (1360 kg) of tension or compression and 1000 lb (454 kg) of shear. Adjust mast ties until mast is plumb.	Les attaches murales doivent être installées sur une structure pouvant résister à une traction ou compression de 1360 kg (3000 lb) et une force de cisaillement de 454 kg (1000 lb). Ajuster les attaches de mât de façon à ce que le mât soit d'aplomb.	Las ataduras murales deben ser puestos sobre una estructura capaz de resistir a una tracción o compresión de 1360 kg (3000 lb) y una fuerza de cizallamiento de 454 kg (1000 lb). Ajustar las ataduras de mástil para poner el mástil de plomo. A0800000-0017

Fig. 5.26

WARNING

It is **important** to note that M1 Series wall ties do not meet the minimum strength requirements for M2 Series setups. **It is important to use only M2 Series wall ties for M2 Series setups**.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Mast Ties

Anchoring System

Suggested installation of the welded wall tie on a beam

The welded wall tie is 6 7/8” (17,5 cm) long and should protrude from the beam by a maximum of 3 7/8” (10 cm), as shown in fi g. 5.26.

The welded wall tie can be fi xed to the beam by three 3/16” (5 mm) wide weld beads. The two weld beads along the length of the wall tie will be 3” (5 cm) long, while the weld bead along the width of the wall tie will be 2” (5 cm) long.

Fig. 5.26

Wall tie welded to beam

Fig. 5.27

Suggested installation of the re-usable wall tie

Fig. 5.28

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Load Capacities

Changes to the calculation method of load capacities

It is important to note that in versions **prior to version 4.0** of the owner's manual, the load allowed to be placed on a bridge or a unit was in the load capacities charts: users did not have to take into account the weight of planks or the weight of workers (including their personal tools) on the setup, except for the number of workers.

The interpretation of the M2 Series load capacities diagrams has been modifi ed in order to standardize the method used for all Hydro Mobile series.

For point load confi gurations, contact the Hydro Mobile technical support team.

Load capacity calculation guidelines

The load capacities charts included in this owner's manual apply to confi gurations using modular bridges or old-style bridges, as well as a combination of both.

1- **The weight of planks and any additional accessory being used must be deducted from the load capacities.**
2- **Each worker's weight (personal tools and equipment included) must be deducted from load capacities.**
3- To ensure stability in a single unit modular setup, the length of cantilever bridges on either side of the unit must be equal at all times, with the exception of the setup shown in the single unit capacity chart for 24' (7,3 m) units. It is also recommended that the loads applied on the platform be as evenly distributed as possible.
4- To ensure stability in a multiple unit modular setup, the minimum load applied on the bearing bridge must be similar to the total load applied on the cantilever bridges.
5- It is mandatory to have a minimum of two (2) workers per motorized unit or a maximum of one (1) worker per bridge area of 7 linear feet (2,1 linear meters).
6- The weight of each person working in a given area reduces the load capacity of that area.
7- **The load capacities charts stickers displayed on the motorized unit used in the setup will take precedence over the information included in this owner's manual.**
8- The load capacity for the unit is shown in the green box on the same line as the cantilever bridge chosen, both on single and multiple unit setups load capacity charts.
9- Multiple unit setups can be a combination of any cantilever bridge on one side with any bearing bridge shown on the charts. Exclusions are shown in red in the charts (see fi g. 6.3 on p. 66 and fi g. 6.4 on p. 67).
10- To calculate the load capacity of a standard, authorized multiple unit confi guration that is not shown in the charts included in this manual, take the length of the bearing bridge to be installed and refer to the capacities of the bearing bridge in the chart that is longer and closest to it. For example, for a 48' (15 m) bearing bridge, the load capacities and positioning of a 52' (16 m) bearing bridge would be used.

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.

Make sure that there is never two workers standing on the same plank outrigger at the same time.

LEGEND

- Motorized unit
- 5' (1,5 m) modular bridge assemblyy
- 10' (3 m) modular bridge assembly
- 6' (1,8 m) bearing bridge adapter
- Length of bridge setup

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Load Capacities

Single unit setups [14' (4,3 m) motorized unit] – Evenly distribut

Fig. 6.1

Single unit setups [24' (7,3 m) motorized unit] – Evenly distributed

Fig. 6.2

To ensure safety at all times, refer to guidelines, warnings and legend on p. 64 for more information on load capacities. These load capacities charts apply to confi gurations using modular bridges or old-style bridges, as well as a combination of both.

Load Capacities

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Multiple unit setups [14' (4,3 m) motorized units] – Evenly distributed

Fig. 6.3

For point load confi gurations, contact the Hydro Mobile technical support team.

To ensure safety at all times, refer to guidelines, warnings and legend on p. 64 for more information on load capacities. These load capacities charts apply to confi gurations using modular bridges or old-style bridges, as well as a combination of both.

Load Capacities

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Multiple unit setups [24' (7,3 m) motorized units] – Evenly distribu

For point load confi gurations, contact the Hydro Mobile technical support team.

Fig. 6.4

To ensure safety at all times, refer to guidelines, warnings and legend on p. 64 for more information on load capacities. These load capacities charts apply to confi gurations using modular bridges or old-style bridges, as well as a combination of both.

Load Capacities

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Multi purpose insert bridge (MPI) – Evenly distributed
Lateral cantilever setups – with 24' (7,3 m) motorized unit

Fig. 6.5

Maximum load capacities

Bearing	A			24' (7,3 m) motorized unit	Cantilever			Minimum length with 24' (7,3 m) MU
	Cantilever min.	Cantilever max.			B	C	D	
Any length of standard bearing bridge (for capacities, refer to bearing bridge load capacity charts)	No cantilever	5' (1,5 m)		10,600 lb (4808 kg)	800 lb (363 kg)	not used	not used	31' (9,4 m)
	No cantilever	5' (1,5 m)		10,600 lb (4808 kg)	800 lb (363 kg)	not used	Outriggers extended (3 planks)	34' (10,4 m)
	5' (1,5 m)	10' (3 m)		9700 lb (4400 kg)	450 lb (204 kg)	450 lb (204 kg)	not used	44' (13,4 m)
	5' (1,5 m)	10' (3 m)		9700 lb (4400 kg)	450 lb (204 kg)	450 lb (204 kg)	Outriggers extended (3 planks)	46' (14 m)

To ensure safety at all times, refer to guidelines, warnings and legend on p. 64 for more information on load capacities.
For any confi guration other than shown in this chart, contact the Hydro Mobile technical support team.

Load Capacities

CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Multi purpose insert bridge (MPI) – Evenly distributed Forward extension setups - with 24' (7,3 m) motorized un

Fig. 6.6

Maximum load capacities

Bearing	A Cantilever min.	A Cantilever max.	24' (7,3 m) motorized unit	F (CW)	B	C	D	E	Length of forward extension
Any length of standard bearing bridge (for capacities, refer to bearing bridge load capacity charts)	No cantilever	5' (1,5 m)	10,000 lb (4536 kg)	not used	600 lb (272 kg)		not used	Outriggers extended (3 planks)	10' (3 m)
	No cantilever	5' (1,5 m)	8500 lb (3856 kg)	250 lb (113 kg)	1050 lb (476 kg)		not used	Outriggers extended (3 planks)	10' (3 m)
	5' (1,5 m)	15' (4,6 m)	7100 lb (3221 kg)	1000 lb (454 kg)	450 lb (204 kg)		450 lb (204 kg)	Outriggers extended (3 planks)	18' (5,5 m)
	5' (1,5 m)	15' (4,6 m)	7400 lb (3357 kg)	1000 lb (454 kg)	600 lb (272 kg)			Outriggers extended (8 planks)	21' (6,4 m) **

** *Eight-plank setup: special 10' (3 m) doubled outriggers are required*

To ensure safety at all times, refer to guidelines, warnings and legend on p. 64 for more information on load capacities.

For any configuration other than shown in this chart, contact the Hydro Mobile technical support team.

Load Capacities

Multi purpose insert bridge (MPI) – Evenly distributed Narrow bearing bridge setups - with 24' (7,3 m) motorized unit

Bearing	Cantilever min.	Cantilever max.	A: 24' (7,3 m) motorized unit	B	C	D	E	F	24' (7,3 m) motorized unit	Minimum length with 24' (7,3 m) MU
Any length of standard bearing bridge (for capacities, refer to bearing bridge load capacity charts)	No cantilever	10' (3 m)	8000 lb (3629 kg)	5700 lb (2585 kg)	not used	not used	not used	not used	8000 lb (3629 kg)	66' (20,1 m)
	No cantilever	10' (3 m)	8100 lb (3674 kg)	2400 lb (1089 kg)	2400 lb (1089 kg)	not used	not used	not used	8100 lb (3674 kg)	73' (22,3 m)
	No cantilever	10' (3 m)	7800 lb (3538 kg)	1550 lb (703 kg)	1550 lb (703 kg)	1550 lb (703 kg)	not used	not used	7800 lb (3538 kg)	80' (24,4 m)
	No cantilever	10' (3 m)	7700 lb (3493 kg)	1000 lb (454 kg)	1000 lb (454 kg)	1000 lb (454 kg)	1000 lb (454 kg)	not used	7700 lb (3493 kg)	87' (26,5 m)
	No cantilever	15' (4,6 m)	7500 lb (3402 kg)	700 lb (318 kg)	700 lb (318 kg)	700 lb (318 kg)	700 lb (318 kg)	700 lb (318 kg)	7500 lb (3402 kg)	95' (29 m)

Maximum three-plank configurations only at all times

*Configurations shown above authorized for multi purpose insert bridges (MPI) with serial number **EXT01-134 and up ONLY**. Special reinforcing kit must be used with MPI bridges having previous serial numbers.*

To ensure safety at all times, refer to notes, warnings and legend on p. 64 for more information on load capacities.
For any configuration other than shown in this chart, contact the Hydro Mobile technical support team.

Fig. 6.1

Date: 05/12/16

Reviewed for Code Compliance
by Walter Hutchinson
Approved with Conditions

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Outriggers

Outriggers can be installed on two levels on M2 Series motorized un top and bottom. M2 Series motorized units and bridges are shippe outriggers that may be used at the top or bottom position.

Plank support outriggers must be installed 5' (1,5 m) from one another. On some unit models, the 56" (1,4 m) special outrigger must be installed at the bottom position, close to the walkway assembly and **must not be replaced** by any other outrigger. Installing any outrigger other than the 56" (1,4 m) special outrigger in front of the walkway on those specifi c unit models will lead to damages to the walkway assembly and could lead to injuries. For more information about the 56" (1,4 m) special outrigger, contact the Hydro Mobile technical support team.

The size and number of outriggers required will vary according to the planking confi guration. Planking confi gurations of fi ve to eight planks will require the use of additional, optional components such as longer outriggers and cross boxes. Refer to the *Outrigger Selection* table (fi g. 7.1) for more information about the size and number of outriggers required for each planking confi guration. Refer also to p. 73 for more information on the installation and use of doubled outriggers.

For any outrigger confi guration other than those described in this owner's manual, contact the Hydro Mobile technical support team.

Planking confi gurations

OUTRIGGER SELECTION TABLE			
Planking confi guration	**Outrigger size**		**Order code**
4 planks	**2 1/2" x 1 1/2" x 3/16" x 72" (6,4 cm x 3,8 cm x 0,5 cm x 183 cm) (standard outrigger, as provided with unit or bridge)**	**SINGLE**	**11008700-K-0000-2**
5 planks *	**2 1/2" x 1 1/2" x 1/4" x 84" (6,4 cm x 3,8 cm x 0,6 cm x 213 cm)**	**SINGLE**	**20008E00-K-01000-2**
6 planks *	**2 1/2" x 1 1/2" x 1/4" x 120" (6,4 cm x 3,8 cm x 0,6 cm x 305 cm)**	**DOUBLED**	**20008000-K-01000-2**
7 planks *	**2 1/2" x 1 1/2" x 1/4" x 120" (6,4 cm x 3,8 cm x 0,6 cm x 305 cm)**	**DOUBLED**	**20008000-K-01000-2**
8 planks *	**2 1/2" x 1 1/2" x 1/4" x 120" (6,4 cm x 3,8 cm x 0,6 cm x 305 cm)**	**DOUBLED**	**20008000-K-01000-2**

* Requires approval by Hydro Mobile **prior** to installation on specifi c setups. Refer to the planking confi guration guidelines for more information.

Fig. 7.1

Planking confi guration guidelines

The planking confi gurations listed in the *Outrigger Selection* table (fi g. 7.1) are **permitted** on the **entire width** of **motorized units** and on the **entire width** of the **longest cantilever setup allowed** with an M2 Series motorized unit.

On **bearing bridge setups**, planking confi gurations requiring fi ve to eight planks are **allowed only on 50% of the length** of the bearing bridge structure.

It it important to note that the use of planking confi gurations requiring fi ve to eight planks on forward extension setups, narrow bearing bridge setups, installations with weather protection, installations with a monorail or a hoist, or on any setup where custom equipment not included in this owner's manual is used, must be approved by Hydro Mobile prior to installation.

CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Outriggers

Top outriggers
(optional)

Outriggers used at the top position must be installed from the **front** of the unit or the bridge, **before** the motorized unit or the structure is installed close to the face of the work.

In a confi guration where 72” (183 cm) outriggers are used at the **top** position only, the maximum width of planking allowed is four planks. In a confi guration where 72” (183 cm) outriggers are used at both the **top** and **bottom** position (fi g. 7.2), the maximum width of planking allowed at the **top** position is **three** planks. Refer to the outrigger selection table and the planking confi guration guidelines for more information.

Each outrigger installed at the top position has a maximum capacity of 265 lb (120 kg) and can be used for workers and material.

Installation

1- Remove the hitch pin clip, the clevis pin and the plank stop pin (fi g. 7.3) and slide the outrigger in the top outrigger pockets on the motorized unit or the bridge, leaving no more than 30” (76,2 cm) protruding from the structure if bottom outriggers are installed, or no more than 41” (104 cm) if there are no bottom outriggers installed. Replace the hitch pin clip, the clevis pin and 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 tightening the outrigger pocket bolts to a torque of 30 lb-ft (41 N-m)..

Fig. 7.2

Fig. 7.3

The outrigger confi guration shown in fig. 7.2 requires the use of additional outriggers not factory-provided with M2 Series bridges and units.

Bottom outriggers

Outriggers used at the bottom position can be installed either from the **front** or the **back** of the motorized unit or the bridge. Each outrigger at the bottom position can be used by **workers only** (including personal tools and equipment). The bottom outriggers **cannot be used** to store material, tools, equipment or to support any other load. In a confi guration where 72” (1,8 cm) outriggers are used at the **bottom** position, the maximum width of planking allowed is **four** planks. Refer to the outrigger selection table and the planking confi guration guidelines for more information.

Installation

1- Remove the hitch pin clip, the clevis pin and the plank stop pin (fi g. 7.3). Slide the outrigger in the bottom outrigger pockets on the motorized unit or the bridge, leaving no more than 41” (104 cm) protruding from the structure. Replace the hitch pin clip, the clevis pin and 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 tightening the outrigger pocket bolt to a torque of 30 lb-ft (41 N-m).

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Outriggers

Doubled outriggers
(optional)

Planking confi gurations of seven and eight planks wide require the outriggers and optional M2 Series cross boxes. Refer to the *Outrigger Selection* table (fi g. 7.1, p. 71) for more information on the outrigger size required for each planking confi guration.

Installation

1- Remove the hitch pin clip and the clevis pin (fi g. 7.3, p. 72) and slide one outrigger in the **top section** of the bottom outrigger pockets on the motorized unit or the bridge.

2- Slide the **top section** of a cross box on the outrigger until it is about halfway through (fig. 7.4). Slide the **top section** of a second cross box on the end of the outrigger (fi g. 7.5). Lightly tighten the bolt on the cross boxes to hold them in place.

4- Slide the second outrigger into the **bottom section** of the bottom outrigger pockets and the **middle section** of the cross box until its end is pushed in by about 6” (15 cm) from the end of the top outrigger.

5- Insert the clevis pin into the top outrigger (fi g. 7.3, p. 72) and pull it up until its head is snug against the outrigger.

6- Still holding up the clevis pin on the top outrigger, pull out the bottom outrigger until both outriggers are even (fi g. 7.7). Secure the clevis pin on the top outrigger with a hitch pin clip. Insert a clevis pin in the bottom outrigger and secure it in place with a hitch pin clip.

7- Tighten the bolts on all the outrigger pockets and on the top and middle sections of the cross boxes to a torque of 30 lb-ft (41 N-m).

Fig. 7.7. *Fig. 7.8.*

8- Repeat steps 1 through 7 for each doubled outrigger required.

9- Slide a transverse outrigger through the bottom section of the cross boxes on the end of the doubled outriggers (fi g. 7.4). Secure in place by tightening the bottom bolt on the cross boxes to a torque of 30 lb-ft (41 N-m).

CITY OF PORTLAND, MAINE RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Cantilever Outrigger Supports
(optional)

In a cantilever installation, it is possible to install cantilever outrigger supp ends of the cantilever bridges on both sides of the mast to complete the of planking on bottom outriggers along the entire length of the setup, if necessary.

Installation

1- Align and insert the top tube of the cantilever outrigger support into the end tube of the bridge. Push in the support as far as possible.
2- Lift up the U-bracket and hold it up against the end tube of the bridge, making sure the holes align properly. Secure the U-bracket in place by sliding a clevis pin through the holes and locking it with a hitch pin clip.
3- Insert a 72" (183 cm) outrigger in the bottom tube of the cantilever outrigger support and tighten the tube bolt slightly.
4- Once the planking is installed, install a plank stop pin in the outrigger on the cantilever support. Push the outrigger in until it is snug against the planking and tighten the tube bolt properly to secure the outrigger in place.

Fig. 7.9

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. 7.10

Fig. 7.11

Installation

1- Remove the stop pin (fi g. 7.11) 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 (fi g. 7.10).

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Cross Boxes
(optional)

Cross boxes are used to install auxiliary outriggers, as required wh inside corner of a forward extension or the recessed area in a wall.

Installation

1- Remove the clevis pin, hitch pin clip and plank stop pin from two outriggers.

2- Slide a cross box on the back and the front of each of the two outriggers (fi g. 7.12). Replace the clevis pin, hitch pin clip and plank stop pin on each outrigger and tighten the pocket bolts on both outriggers.

3- Slide the transverse outriggers through the cross boxes until they are halfway through.

4- Install a cross box on each transverse outrigger and extend each outrigger in position.

5- Slide auxiliary outriggers through the cross boxes on the transverse outriggers until they are in position. Secure them in place with a clevis pin and a hitch pin clip. 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.

Fig. 7.13

Fig. 7.12

Sliding Doors

Two sliding doors allow the safe loading and unloading of materials and equipment onto M2 Series motorized units.

Installation

1- Retrieve the sliding doors and the door guardrails from their storage location on the motorized unit (fi g. 7.14).

Fig. 7.14

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Sliding Doors

Installation (cont'd)

2- Install the two door guardrails (84" or 213 cm) at each end of the b motorized unit, making sure that their mid rail tubes are slanting **toward** the opening (fi g. 7.16). For more information on the installation and use of guardrails, refer to p. 77 of the *Accessories* section.

Fig. 7.15

Sliding door

Fig. 7.17

Door guardrail *Fig. 7.16*

3- Take the left sliding door. Push the bottom wheel guide up to release the eye bolt. Let the bottom wheel guide drop.

4- Install the left sliding door on the left door guardrail, making sure the top wheel guide is engaged on the top mid rail tube.

5- Slightly raise the extremity of the sliding door and lift the bottom wheel guide (fi g. 7.15), making sure it is engaged on the bottom mid rail tube. Secure the bottom wheel guide in place by lifting and locking in the eyebolt. The sliding door should be at a factory default distance of 1/4" (0,6 cm) over the motorized unit deck. If necessary, adjust the height of the sliding door using the eyebolt on the wheel guide.

Fig. 7.19

Gravity lock

Fig. 7.18

6- Repeat steps 3 through 5 to install the right sliding door.

7- To open the sliding doors, push up and hold the gravity locks on the door guardrails and slide the door toward the door guardrails (fi g. 7.18).

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Guardrails

Appropriate guardrails must be installed on each M2 motorized unit or the safety of workers at all times.

Standard Guardrails

The following installation steps apply to all models of M2 Series standard bridge guardrails.

Installation

1- Slide the guardrail legs in the guardrail pockets at the top of the motorized unit or the bridge (fig. 7.20).

2- Tighten the bolt in each guardrail pocket to secure the guardrail in place.

3- Install as many guardrails as is required by the setup.

Fig. 7.20 *Fig. 7.21*

End Guardrails

The following installation steps apply to the end guardrails used on the end of M2 Series motorized units and bridges.

Installation

1- Align a corner guardrail pocket with an outer assembly socket at one end of the motorized unit or the bridge (fig. 7.22). Secure in place with a 1” x 2” long (GR5 UNC) bridge bolt assembly.

2- Repeat step 1 to install the second guardrail pocket in the opposite corner.

3- Slide the guardrail legs in the corner guardrail pockets (fig. 7.23).

4- Tighten the bolt on each guardrail pocket to secure the guardrail in place.

3- Install as many end guardrails as is required by the setup.

Fig. 7.22 *Fig. 7.23*

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Guardrails

Face Guardrail Brackets
(optional)

Face guardrail brackets must be installed when the distance between the end of planking (or deck, if not using planks) and the structure is greater than what local regulations allow or 6" (15 cm) (ex. recess in a wall, end of a building, etc.), the most stringent of conditions taking precedence over the others. On all M2 Series motorized units and bridges, the face guardrail brackets can be installed at the **bottom** or **top** outrigger position.

Fig. 7.24

Fig. 7.26

Fig. 7.25

Installation

1- If there are no outriggers installed, install the outriggers at the top or bottom position, as required. Refer to p. 71 for instructions on the installation of outriggers. Make sure not to install any plank stop pins. If outriggers are already installed, remove the plank stop pins and proceed to step 2.

2- Slide the face guardrail bracket over the outrigger tube.

3- Secure in place by sliding a clevis pin through the face guardrail bracket and the outrigger. Secure the bracket in place with a hitch pin clip.

4- Repeat steps 2 and 3 for each guardrail face bracket required to secure the hazardous opening.

5- Insert planks in the hooks of each face guardrail bracket to cover the hazardous opening (fi g. 7.25). Secure the planks in place with nails or screws.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Adjustable Guardrails
(optional)

To ensure the safety of workers in a more fl exible way, adjustable guardrails may be installed on bridges. Install standard guardrails and secure the adjustable guardrail to the standard guardrails with toggle pins (as shown in fi g. 7.27). Refer to p. 77 for more information on the installation of standard guardrails.

Fig. 7.28

Fig. 7.27

Fig. 7.29

Plank-End Guardrails

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

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 confi guration using two plank-end guardrails, make sure the fi rst guardrail is installed **backwards**. Repeat steps 1 and 2 for the installation of the second guardrail.

Fig. 7.30

Note: Two plank-end guardrails face to face are shown above

Fig. 7.31

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Access Equipment
Retractable Rest Platform
(optional)

The use of an automatically retractable rest platform is recommende work areas at heights between 30' and 69' (9 m and 21 m). It is not recc to climb up the mast to reach work areas at heights over 69' (21 m) because of the time and effort required to reach such heights. The use of alternate equipment such as a rapid mast climber, for instance Hydro Mobile's F Series, or a conventional scaffold stair system will prove to be more effi cient.

Installation

1- For safety reasons, it is recommended that the rest platform be installed from the platform of the motorized unit or from a man basket underneath the motorized unit. The rest platform must be installed on the back side of the mast, when the platform of the motorized unit has been raised to more than 30' (9 m) from base level.
2- Remove the 3/8" nuts and bolts from the folder part.
3- Unfold the rest platform and leave the handle on top (fi g. 7.34).
4- Slide the rest platform inside the mast with its rectangular step resting against the back side of the mast (fi g. 7.33).
5- Install the folder part on a rung facing the wall using 3/8" bolts and nuts.
6- Let the rest platform retract slowly inside the mast.
7- Remove the 3/8" bolt and nut from the handle.
8- Install the handle 5 rungs above the rest platform (fi g. 7.35). Fasten with the 3/8" bolt and nut.
9- Test the rest platform by raising the handle. Doing so will retrieve the rest platform from inside the mast. When the handle is released the rest platform will fold and retract inside the mast.
10- If the rest platform unfolds and retracts as and when it should, it is safe to use the rest platform.

Fig. 7.32

Fig. 7.33

Fig. 7.34

Using the retractable rest platform

1- Climb up the mast until one step above the rest platform.
2- Raise the handle to a vertical position to retrieve the rest platform from inside the mast.
3- Step on the rest platform only when the handle is in a vertical position.
4- Once on the rest platform, release the handle.
5- Resuming the climb up the mast will make the rest platform retract into the mast automatically.

Fig. 7.35

WARNING

The use of a retractable rest platform is recommended to access work areas at heights between 30' and 69' (9 m and 21 m). It is not recommended to climb up the mast to reach work areas at heights over 69' (21 m) because of the time and effort required to reach such heights.

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Wheel Set
(optional)

The optional M2 Series wheel set facilitates the relocation of a mot wheel set can also be used to move a cantilever setup measuring up or a bearing bridge structure of a length of up to 62' (18,9 m). On job sites where space is limited, the wheel set can be unlocked and set in a "crab mode" to enable steering with the two-part tongue. It is important to use extreme care when lifting and moving a motorized unit or a setup with the wheel set.

Installation on a motorized unit

1- Remove all loads and equipment from the deck and make sure there are no bridges bolted to the motorized unit. Make sure all doors and guardrails are secure and that there is no one on the platform.
2- Make sure that there is not more than one mast section on top of each of the bottom mast sections welded on the base of the unit. Raise the motorized unit to the top of the mast sections.
3- Using the handle bars, move the wheel set under one end of the motorized unit. Make sure the wheel set is positioned under a vertical member.
4- Unlock the lowering cams on both secondary hooks.
5- Lower the motorized unit onto the wheel set with precaution, making sure the deck of the motorized unit remains level.
6- Secure the wheel set in place with the four locking pins.
7- Slide chains, cable or slings through the other end of the motorized unit and secure them crosswise to the forks of a rough terrain forklift, making sure the deck of the motorized unit remains level.
8- Make sure both cylinders are fully retracted. Retrieve the transport hooks from their storage location. Remove the cylinder hooks and install the transport hooks. Store the cylinder hooks in their storage location. For more information, refer to p. 48 of the *Power Pack and Operating Components* section.
9- Make sure the secondary hooks are not engaged on a mast rung. Proceed with caution and extend the cylinders to raise the base off the ground by about 12" (30,5 cm).
10- Retrieve the mast locking bars from their storage location and insert them in the masts. Refer to p. 48 of the *Power Pack and Operating Components* for more information. Lower the motorized unit until the base rests on the mast locking bars. Raise the base jacks, if necessary.
11- Move the motorized unit like a trailer to its new location. For more information about the lifting and moving of a motorized unit, refer to p. 25 of the *Motorized Unit* section.

Installation on a cantilever setup

1- Follow steps 1 and 2 of the instructions for the installation of the wheel set on a motorized unit.
2- Using the handle bars, move the wheel set under the bridge at one end of the cantilever setup. Make sure the wheel set is positioned under a vertical member.
3- Follow steps 4 through 10 of the instructions for the installation of the wheel set on a motorized unit.
4- Move the cantilever setup like a trailer to its new location. For more information about the lifting and moving of a cantilever setup, refer to p. 26 of the *Motorized Unit* section.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Wheel Set

Installation on a bearing bridge setup

1- Make sure the bearing bridge structure is not attached to any unit.
2- Using the handle bars, move the wheel set under the bridge at one end of the bearing bridge structure. Make sure the wheel set is positioned under a vertical member.
4- Secure the wheel set in place with four locking pins.
5- Secure the opposite end to a rough terrain forklift with slings.
6- Move the bearing bridge structure like a trailer to its new location. For more information about the lifting and moving of a bearing bridge structure, refer to p. 26 of the *Motorized Unit* section.

Fig. 7.36

Hoist
(optional)

Designed to fi t M2 Series motorized units, the hoist system is used to supply material on the work platform. With a nominal capacity of 4000 lb (1815 kg) and equipped with 250' (76 m) of cable, the hoist can lift and handle large bulks of material such as full pallets of blocks or bricks.

The hoist engine must be installed in the rack mounting pockets on the **right side** of the motorized unit (fi g. 7.37). The installation of the hoist engine on a 14' (4,3 m) motorized unit will require the use of the rack adaptor (fi g. 7.38).

It is important to note that the weight of the hoist system and its components totals 2500 lb (1134 kg) and this weight must be deducted from the load capacities of the setup. Refer to the *Load Capacitie*s section on p. 64 to avoid overloading the platform. For more information on the installation, use and specifi cations of the hoist system, refer to the Hoist System owner's manual.

Fig. 7.37

Fig. 7.38

Fig. 7.39

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Weather Protection
(optional)

The weather protection system can increase work effi ciency by prot material and equipment against adverse climatic conditions. A stı combination of steel and wood allows users to fasten tarpaulins quickly. A lower structure can also be installed to cover up to 7' (2,1 m) of wall underneath the platform as an additional protection against cold weather conditions. The weight of the weather protection structure and its accessories must be deducted from the load capacities of the setup. Refer to the *Load Capacities* section on p. 64 for more information.

Installation of the bottom support structure

1- With the motorized unit at base level, slide a bottom support assembly under the motorized unit or the bridge (fi g. 7.42). Hook the clamp-end tubes (fi g. 7.50) on the deck.

2- Slide a taper pin from right to left in each clamp-end tube and secure in place with a hitch pin clip. Secure each grip end tube to the deck by tightening the bolt at the bottom (fi g. 7.51).

3- Install as many bottom support assemblies as is required by the setup. The distance between two bottom supports must not exceed 8' (2,4 m).

Fig. 7.40

Fig. 7.41

Fig. 7.42

Installation of the top support structure

1- Insert a rear vertical post into the bottom support bracket (fi g. 7.43). The diagonal brace on the vertical post must be turned **toward** the face of the work.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Weather Protection

Installation of the top support structure (cont'd)

Fig. 7.43

Fig. 7.44

Fig. 7.45

Diagonal brace of post facing toward face of work

2- Slide a taper pin through the **second lowest** adjustment hole in the vertical tube and secure it in place with a hitch pin clip (fig. 7.43).

3- Tighten the bolt on the bottom support bracket (fig. 7.44).

4- Insert a front vertical post into the bottom support bracket (fig. 7.45). The diagonal brace on the vertical post must be turned **toward** the face of the work.

5- Slide a taper pin through the **lowest** adjustment hole in the vertical post and secure it in place with a hitch pin clip. The front vertical posts must be higher than the rear vertical posts.

Fig. 7.47

Fig. 7.46

6- Remove the locking device from a 10' (3 m) roof support tube (fig. 7.46). Slide the roof support tube into the pocket of the rear vertical post. Make sure that the holes at the end of the roof support tube are **toward** the face of the work.

7- Insert a sliding tube into the roof support tube (fig. 7.46).

8- Pull the roof and sliding tube assembly and slide it into the pocket of the front vertical post (fig. 7.47).

9- Tighten the pocket bolt on both vertical posts to secure the assembly in place.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Installation of the top support structure (cont'd)

10- Replace the locking device on the sliding tube, making s horizontal, aligned with the roof support tube and on the side opposite to the angle bracket located on the vertical post (fi g. 7.48). Adjust the sliding tube to bridge the distance to the face of the work and tighten the bolt to hold the sliding tube in place.

11- Install as many roof support tubes as is required by the setup.

12- Slide a 2" x 4" (5 cm x 10 cm) plank through the lateral angle brackets at the top of each vertical post. Measure and adjust the length of the plank to reach up the face of the work.

Fig. 7.48

Fig. 7.49

Back of unit

Fig. 7.50

Front of unit

Installation of bracing

1- To install **front** bracing, slide a 2" x 4" (5 cm x 10 cm) plank through the rear angle brackets located on the front vertical posts. Secure the plank in place using 1 1/2" (3,8 cm) nails or screws.

2- To install **rear** bracing, slide a 2" x 4" (5 cm x 10 cm) plank through the top and bottom angle brackets located on the back of the rear vertical posts. Secure the planks in place using 1 1/2" (3,8 cm) nails or screws.

3- It is **mandatory** to install a diagonal brace every two bays. A bay could be left opened if there is diagonal bracing on both sides of the opening (fi g. 7.49).

Installation of the roof tarpaulin

1- Install a 2" x 4" (5 cm x 10 cm) plank in the angle brackets located at the front end of the sliding tubes, parallel to the face of the work. Secure the plank to the angle brackets with nails or screws.

2- Install 2" x 4" (5 cm x 10 cm) support planks at intervals on top of the roof section (fi g. 7.51, p. 86). Make sure that there isn't any plank installed over the locking devices and that the sliding tubes can be retracted if necessary. Secure the planks with nails or screws to the planks attached to the roof structure.

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Weather Protection

Installation of the roof tarpaulin (cont'd)

3- Install a tarpaulin over the roof structure, using the planks in place.

Fig. 7.51

Fig. 7.52

Fig. 7.53

Fig. 7.54

Fig. 7.55

Installation of the lower level structure

1- With the motorized unit at 10' (3 m) above base level, insert a vertical post into the pockets located on the **front** bottom support bracket **under** the platform (fi g. 7.52 and fi g. 7.53). The diagonal brace on the vertical post must be turned **away** from the face of the work.

2- Slide a taper pin through the **highest** adjustment hole in the vertical post and secure it in place with a hitch pin clip.

3- Tighten the bolts on the pockets of the bottom support bracket.

4- Insert a 5' (1,5 m) outrigger in the pocket at the bottom of the vertical post, leaving not more than 3' (0,9 m) protruding from the pocket toward the face of the work. Tighten the pocket bolt only slightly.

5- Install as many vertical posts and outriggers as is required by the setup.

6- Install planking and push in the outriggers until the plank stop pin is snug against the planks. Tighten all the pocket bolts appropriately to secure the outriggers in place.

7- Slide 2" x 4" (5 cm x 10 cm) planks in the middle and bottom angle brackets on the vertical posts to secure the hazardous opening at the back of the lower level structure (fig. 7.54). Secure the planks in place with nails or screws.

Installation of the bottom tarpaulin

1- Install 2" x 4" (5 cm x 10 cm) planks in the angle brackets located on the bottom support tubes. Secure the planks to the angle brackets with nails or screws.

2- Install a tarpaulin underneath the platform, using the planks to hold it in place.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Monorail
(optional)

Using the same support structure as the weather protection system monorail system allows loads of up to 1000 lb (454 kg) to be mov the installation. The M2 Series monorail system can be used or maximum planking confi guration of three planks wide. For an installation on a setup requiring a wider planking confi guration, contact the Hydro Mobile technical support team.

It is important to note that only one monorail installation per motorized unit setup is allowed. It is recommended to refer to and comply with the monorail capacities tables on p. 89 before using a monorail installation. The weight of the monorail structure must also be deducted from the load capacities of the setup. Refer to the *Load Capacities* section on p. 64 to avoid overloading the platform.

Installation of the support structure

1- Follow steps 1 through 3 of the installation procedure for the bottom support structure on p. 83 for each bottom support tube required by the setup. The distance between two bottom supports must not exceed 8’ (2,4 m), as shown in fi g. 7.56.

2- Follow steps 1 through 5 of the installation procedure for the top support structure on p. 83 for each vertical post installation (front and back) required by the setup.

3- Remove the locking device and the sliding tube from a 10’ (3 m) outrigger and slide the outrigger into the pockets of the front and back vertical posts. Secure the outrigger in place by tightening the pocket bolts

4- Repeat step 3 for each 10’ (3 m) outrigger required by the setup.

Fig. 7.56

Installation of the monorail beam

1- Slide a monorail beam attachment assembly on a top support outrigger of the monorail structure. If the monorail structure runs over a bearing bridge, use the upper tube of the monorail attachment to secure it to the top support outrigger (fi g. 7.58, p. 88).

CITY OF PORTLAND, MAINE
RESURGAM
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Monorail

Installation of the monorail beam (cont'd)

2- Secure the monorail beam attachment in place by tightening the p

3- Repeat steps 1 and 2 for each of the monorail beam attachments required by the setup.

4- Once all the monorail beam attachments are secure, slide the top of monorail beams between two attachment plates at the bottom of the beam attachment assemblies, using monorail beam junction plate kits (fi g. 7.59) to join beams together. Secure the monorail beams in place by tightening the four bolts on each of the attachment plates.

5- Make sure that the monorail beam overhang does not exceed 4' (1,2 m), as shown in fi g. 7.56, on p. 87.

6- Slide the trolley on the monorail beam.

Fig. 7.58

Monorail beam attachment assembly

Fig. 7.57

Fig. 7.59

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

	Monorail capacities – single installation as per distance from face of work			
	Distance "A"			
	20" (50,8 cm)	30" (76,2 cm)	40" (101,6 cm)	50" (127 cm)
Capacity (lb)	1000	700	500	300
Capacity (kg)	454	318	227	136

Fig. 7.60

	Monorail capacities – double installation (each monorail) as per distance from face of work			
	Distance "A"			
	20" (50,8 cm)	30" (76,2 cm)	40" (101,6 cm)	50" (127 cm)
Capacity (lb)	1000	700	500	300
Capacity (kg)	454	318	227	136

Fig. 7.61

	Monorail capacities single installation
Capacity (lb)	1000
Capacity (kg)	454

Fig. 7.62

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Transport and Storage

Transport of the motorized unit

1- Lower the motorized unit, removing wall ties, mast ties and mast s the way down. Refer to the *Masts and Mast Ties* section on p. 54 for instructions on dismantling masts and removing mast ties. If mast sections are to be stored on the platform during dismantling, make sure they are distributed equally on on the motorized unit to ensure good balance. Refer to the *Load Capacities* section on p. 64 to avoid overloading the platform.

2- Remove all bridges and their guardrails.

3- Lower the motorized unit to base level. Monitor the last 10' (3 m) of descent to base level to ensure the proper seating of the access walkway.

4- Turn off the engine. Open the engine access door and store the control post. Move the engine gasoline shutoff valve lever to the OFF position.

5- Remove the cylinder and secondary hooks. Install the transport hooks on the cylinders. Store the cylinder and secondary hooks in their storage location and secure them in place (fi g. 4.3, p. 48).

6- Retrieve the mast locking bars from their storage location and insert them in each mast.

7- Remove all the motorized unit guardrails and secure them for transport.

8- Refer to p. 23 of the *Motorized Unit* section for more information on the lifting and transport of a motorized unit.

Storage of the motorized unit

1- Follow all the steps described in the transport procedure.

2- If the motorized unit is to be stored for any signifi cant length of time, disconnect the battery.

3- Before storing the motorized unit, make sure to place suffi cient cribbing under the base to prevent freezing water from causing damages to the bottom of the structure.

WARNING

Before transporting or storing a motorized unit, make sure that the gasoline valve lever has been turned off. Disconnect the battery if the motorized unit is to be stored for any signifi cant length of time. When storing a motorized unit, there should be suffi cient cribbing under the base to prevent freezing water from causing damages to the bottom of the structure.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Maintenance

Proper maintenance and service will warrant safe, economical, a operation of an M2 Series motorized unit [24' (7,3 m) and 14' (4,3 m) m and periodic inspection operations must be carried out by a compete corrective action further to these inspection operations must be carried out by a person qualifi ed for such corrective action. Annual inspections must be carried out by a qualifi ed technician.

Inspection operations are only necessary when the motorized unit is in use. The owner and/or user is responsible for all inspection and maintenance operations (frequent and periodic). Before being fi rst used on a job site, this motorized unit and its accessories must be inspected effectively and timely, according to the schedules recommended for M2 Series motorized units.

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 the M2 Series motorized units. Blank copies of the frequent and periodic inspection checklists should be available on job sites at all times to be fi lled out when these 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 the M2 Series motorized units can be obtained by contacting the service center 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.

Tools required on job site	
Quantity	**Description**
1	15/16" open end wrench (supplied)
1	measuring tape
1	banding cutter
1	2-lb hammer
1	1/2" drive 18" ratchet
1	15/16" x 1/2" drive deep socket
2	4" x 20' (10 cm x 6 m) straps

Fig. 8.1

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Maintenance

Hydraulic Diagram

Fig. 8.2

* *Part not shown in drawing*

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	ENGINE HONDA 9 HP	7	HYDRAULIC VALVE SD4-ED-SAE (PPWK M2)
2	BELL HOUSING	8	VALVE COUNTERBALANCE SUN 3000 PSI(W/CAP)
3	COUPL KIT L-095 1 1/8-KW 1/4x5/8-KW 5/32	9	CYLINDER 3 1/2x23 1/2x1 1/2
4	PUMP DOUB GEAR (COMMERCIAL)	10	CYLINDER ASS'Y - M2
5	POWERPACK HYDR. FRAME ASS'Y 5.3 US GAL	* 11	CAP. HYD. OIL TANK W / STRAINER (24 HP)
6	ENGINE FILTER OIL W/INDICATOR	* 12	SWITCH GAUGE LEVEL/TEMP (EXT. TANK-LS5)

* *Part not shown in fi g. 8.2*

FREQUENT INSPECTION CHECK

(to be performed by a competent person daily or before every w and every week)

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Maintenance and inspection logs must be kept on record for warra purposes. Blank copies of the frequent inspection checklist should job sites at all times to be fi lled out when these frequent inspection carried out. The notes and comments form must be used to indicate any discrepancy or any item found to be not acceptable. Any discrepancy must be reported to the owner/user and appropriate corrective action must be taken immediately. Corrective actions must be performe by qualifi ed personnel.

Copies of the frequent inspection checklist recommended for the M2 Series motorized units (fi g. 8.3) and the notes and comments form can be obtained by contacting the service center or the Hydro Mobile technical support team, or be downloaded directly from the Hydro Mobile website at www.hydro-mobile.com.

The Notes and Comments form is not shown in fi g. 8.3

M2 SERIES 2.9' (0.3 m) MOTORIZED UNITS AND ACCESSORIES
1.4' (0.3 m) MOTORIZED UNITS AND ACCESSORIES

FREQUENT INSPECTION CHECKLIST

PROJECT: COMPETENT PERSON (full name):

LOCATION: MOTORIZED UNIT SERIAL NUMBER:

CONTRACTOR: DATE (WEEK OF):

IMPORTANT NOTE: ON MULTIPLE UNIT SETUPS, ALL INSPECTION STEPS MUST BE PERFORMED ON EACH MOTORIZED UNIT AND ITS ACCESSORIES. USE ONE INSPECTION FORM PER MOTORIZED UNIT.

Each Hydro Mobile setup must be inspected daily or before every working shift, as well as weekly. Use the spaces below to monitor 5 days of daily inspection and the weekly inspection of a motorized unit and its accessories. Use the *Notes and Comments* form to indicate any discrepancy or any item found to be not acceptable. Any discrepancy must be reported and appropriate corrective action must be taken immediately. Corrective actions must be performed by qualified personnel.

USE CHECKMARKS FOR EACH ENTRY VERIFIED. IF NECESSARY, TAKE CORRECTIVE ACTION BEFORE INSERTING CHECKMARK.	1	2	3	4	5	6	WEEK
BASE							
1 Base is level and cribbing under metal mudsills has not moved.							
2 Perimeter of setup is safe and delimited (warning tape, concrete blocks).							
3 Construction traffic is controlled on and around job site (proper barrier is installed).							
4 Base outriggers are in good condition.							
MASTS							
5 Mast climbing is not impeded in any way and access walkway is clear of debris and working properly.							
6 If the work platform is accessed from inside the building or off a scaffold stair tower, transfer is safe and free from obstruction.							
MOTORIZED UNIT							
7 All safety guardrails are in position and sliding doors are operational (no fall hazard).							
8 Work and circulation areas on the platform are clear of debris.							
9 On special façade shapes, cross box kits, face guardrails and plank guardrails are properly installed and stable.							
10 Lifting mechanism is clear of debris (mortar, masonry material, etc.). Safety hooks can move freely. Cylinder hooks, secondary hooks and lowering arms are in good condition and properly locked. The pressure switch and safety locks have been verified as described in Owner's manual procedure and are in good condition.							
11 Cylinders, hydraulic hoses and all other hydraulic components are free of leaks and signs of wear.							
12 Gasoline and engine oil levels are appropriate or have been replenished. Air filter has been verified and is in good condition.							
13 Hydraulic oil level is between 3/4 and 7/8 full with cylinder in closed position. The unit can be replenished with AT Dextron III, if required.							
14 The platform clears all obstacles (building, balconies, etc.) and can be raised or lowered.							
15 Structure and components have been inspected and show no signs of damage or distortion due to overload conditions.							
16 Rollers (32 per motorized unit) are all in position and operational. Rollers must be greased weekly using Prolab GS100/228440 only.							
17 Cable and control levers have been verified and are functioning properly.							
INITIALS OF COMPETENT PERSON CONDUCTING DAILY OR WEEKLY INSPECTION							

The undersigned certifies that this unit and its accessories have been properly inspected, in due time, that any discrepancy has been brought to the attention of the owner/user and that all discrepancies have been corrected prior to further use of this unit or its accessories.

Signature of competent person _____ Name of competent person (IN PRINT) _____ Date _____

USE CHECKMARKS FOR EACH ENTRY VERIFIED. IF NECESSARY, TAKE CORRECTIVE ACTION BEFORE INSERTING CHECKMARK.	1	2	3	4	5	6	WEEK
MASTS AND MAST TIES							
18 Mast is in plumb both front and side axis) and all toggle bolts and nuts are in position.							
19 Mast bolts are tightened at the proper torque (120 lb-ft or 163 N-m). Mast bolt washers have been replaced if bent.							
20 Mast ties are in good condition, show no signs of distortion and are secure (collision with planks or mast tie doors can damage ties).							
LOADS							
21 Loads on the platform do not exceed those prescribed by the capacity charts and are equally distributed.							
22 All access doors and mast tie doors are clear of material and equipment.							
BRIDGES							
23 On level bearing bridges, there is a 6" to 12" (15 cm to 30 cm) overlap at each end and bridge safety chains are tied properly with a slack not exceeding 1" (2.5 cm).							
24 On angled bearing bridges, there is proper overlap and special chains are installed on the bridge and the motorized unit undercarriage.							
25 Bridges have been inspected and their structure shows no signs of damage or distortion due to overload conditions.							
GENERAL							
26 Planking is in good condition and set properly. Planking clears all obstacles (building, balconies, etc.) and is properly supported, overlapped and secured.							
27 Plank outriggers are clean and in good condition. Outrigger lock bolts are all tightened properly and plank stop pins are in place.							
28 Minimum clearance from overhead power lines is maintained according to local regulation.							
29 An evacuation plan specific to the job site is available to all workers and a legible copy of the owner's manual is in the tool box.							
INITIALS OF COMPETENT PERSON CONDUCTING DAILY OR WEEKLY INSPECTION							

WARNING - WIND SPEEDS

A motorized unit setup with mast ties must not be exposed to wind speeds exceeding 28 mph (45 km/h). A motorized unit setup equipped with weather protection must not be exposed to wind speed exceeding 20 mph (32 km/h). Fleet anding instructions must be followed when exposed to wind speeds exceeding 28 mph (45 km/h).

For orders or information:
www.hydro-mobile.com
1.866.469.9763
(toll free in the United States)
450.589.9100 (Canada)

M2_MAINTFREQ_1010_EN

Fig. 8.3

PERIODIC INSPECTION CHECKLIST

(to be performed by a competent person every month or every three mo

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/12/16

Maintenance and inspection logs must be kept on record for warranty purposes. Blank copies of the periodic inspection checklist should be avail sites at all times to be fi lled out when these periodic inspection operations out. The notes and comments area of the form must be used to indicate any discrepancy or any item found to be not acceptable. Any discrepancy must be reported to the owner/user and appropriate corrective action must be taken immediately. Corrective actions must be performe by qualifi ed personnel.

Copies of the periodic inspection checklist recommended for the M2 Series motorized units (fi g. 8.3) can be obtained by contacting the service center or the Hydro Mobile technical support team, or be downloaded directly from the Hydro Mobile website at www.hydro-mobile.com.

M2 SERIES 24 (7.3 m) MOTORIZED UNITS AND ACCESSORIES
14 (4.3 m) MOTORIZED UNITS AND ACCESSORIES

PERIODIC INSPECTION CHECKLIST

PROJECT:

LOCATION:

CONTRACTOR:

COMPETENT PERSON (full name):

MOTORIZED UNIT SERIAL NUMBER:

DATE:

IMPORTANT NOTE: ON MULTIPLE UNIT SET-UPS, ALL INSPECTION STEPS MUST BE PERFORMED ON EACH MOTORIZED UNIT AND ITS ACCESSORIES. USE ONE INSPECTION FORM PER MOTORIZED UNIT. PERFORM PERIODIC UNIT INSPECTION BEFORE PERIODIC INSPECTION.

In addition to frequent inspections, each Hydro Mobile motorized unit or accessory must be inspected periodically. This form can be used to monitor inspections that need to be performed each month or every three months. Use the *Notes and Comments* area below to indicate any discrepancy or any item found to be not acceptable. Any discrepancy must be reported and appropriate corrective action must be taken immediately. Corrective actions must be performed by qualified personnel.

USE CHECKMARK ☑ FOR EACH ENTRY VERIFIED. IF NECESSARY, TAKE CORRECTIVE ACTION BEFORE INSERTING CHECKMARK.

		MONTH	3-MONTH
GENERAL			
1	Base jacks have been cleaned and lubricated.		
Axles			
2	Doors have been adjusted and repaired, as required.		
3	Access walkway and components are in good condition.		
Mechanical Units			
4	Safety hooks have been cleaned up and greased at pivot points.		
5	Lowering cams have been adjusted to move freely (not too loose).		
6	The bridge connector angles have been inspected and show no signs of damage or distortion.		
7	Engine has been serviced according to the instructions of the manufacturer's user's manual.		
Bridges			
8	Bridge link plates, pins and fastening bolts are all in place and in good condition.		
Control			
9	All steps of the frequent inspection checklist recommended for this motorized unit and its accessories have been performed daily or before every working shift and at the end of every assembly operation, any discrepancy, unacceptable item or malfunctioning operation.		
10	Welding has been inspected on the motorized unit, masts and bridge structures and shows no signs of cracks or has been repaired by the authorized distributor prior to resuming operation.		
11	Paint has been verified and is in good condition or was repaired properly (touch-ups or complete repainting of unit).		
	INITIALS OF COMPETENT PERSON CONDUCTING INSPECTION (AND CORRESPONDING COLUMN) ↑		

NOTES AND COMMENTS

DATE	NOTE OR COMMENT	CORRECTIVE ACTION REQUIRED	DATE OF REPAIR	DATE COMPL.

WARNING - WIND SPEEDS

A motorized unit setup with mast ties must not be exposed to wind speeds exceeding 35 mph (56 km/h) when in operation. A motorized unit setup equipped with weather protection must not be exposed to wind speeds exceeding 20 mph (32 km/h). Equipment with weather protection must not be exposed to wind speeds exceeding 28 mph (45 km/h).

HYDRO MOBILE
For more information:
1-888-494-9376 (US)
(toll free in the United States)
1-450-688-2000 (Canada)
M2_MAINTPERIOD_1010_EN

The undersigned certifies that this unit and its accessories have been properly inspected, in due time, that any discrepancy has been brought to the attention of the owner/user and that all discrepancies have been corrected prior to further use of this unit or its accessories.

Signature of competent person | Name of competent person (IN PRINT) | Date

Fig. 8.4