



LiteMast

Operating and Maintenance Manual

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Operating & Maintenance Instructions

Date: 13/07/2009
Equipment: **LiteMast**

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Operating & Maintenance Instructions

1.0 INTRODUCTION

Litestructures GB Ltd design and manufacture a wide range of structural, display and staging equipment for the Entertainment, retail, commercial and industrial sectors which are carefully designed and tested prior to dispatch.

The operating and maintenance instructions should be strictly adhered to and is essential for the safety of operating and maintenance personnel, as well as the efficiency and long life of the equipment itself.

Failure to implement the recommendations contained in this manual, to use the equipment in a manor the equipment was not designed for or the addition and adaptation of the equipment without permission of Litestructures GB Ltd will negate the equipment guarantee and could present a safety risk.

This equipment has been designed, manufactured and assembled in accordance with normal industry practices and within the parameters of the Health and Safety at Work Principles & Practices

Operating & Maintenance Instructions

2.0 SAFETY

All personnel concerned with the operation, maintenance or those in contact with the equipment for any other reason, must first be fully aware of the contents of this manual, especially with regards to the following safety check list.

- (a) Ensure that the equipment is electrically isolated before commencing any maintenance procedure or removing safety devices.
- (b) Do not remove any safety devices while the equipment is operating.
- (c) Do not attempt to override any of the safety features of the equipment.
- (d) Ensure that all the safety devices are secure before use.
- (e) Ensure that all equipment is free from any personnel and obstructions before use.
- (f) Maintenance personnel must account for all tools and equipment following a maintenance routine.

A full copy of the structural calculations for the LiteMast you have purchased will be attached to this manual.

3.0 FUNCTION

The LiteMast as a hoist system designed for raising PA systems at entertainment venues.

The LiteMast is essentially a central mast that is raised to near vertical and braced against two support legs. A hoist system can then be used to raise a PA stack to a higher level.

The build and safety procedures are based on an assumption that the surface that the LiteMast is being erected on is flat, firm and fit for purpose.

Operating & Maintenance Instructions

LiteMast 7.5m HD

7.5 HD METRE LITEMAST KIT			
ITEM	DESCRIPTION	DRAWING No.	QUANTITY
1	290 TOWER 1 TONNE HEADBLOCK	LM290-HB	1
2	BRACE ARM JOINT FRAME	LM290-BJF	1
3	BRACE ARMS 2" TUBE FOR 7.5HD METRE LITEMAST	LM290-7.5HD-BA	2
4	290 LITEMAST BASE SECTION C/W CONNECTIONS	LM290-BSA	1
5	290 LITEMAST END SECTION FOR SCREWJACK	LM290-EFS	2
6	450MM SCREWJACKS	BOUGHT IN	5
SUGGESTED TRUSS			
7	4 METRE SECTION LITEPRO 290-4-HD	LP290-4HD-S4000	3
8	3 METRE SECTION LITEPRO 290-4-HD	LP290-4HD-S3000	1
CONNECTOR PACKS		LP4/ACP	3

REV	WORKING	DATE	BY	CHKD	DESCRIPTION	APPROVED	DATE

		TITLE: 7.5M LITEMAST HD ORIGINAL ASSEMBLY
IF IN DOUBT ASK		DRAWN BY: [Name] CHECKED BY: [Name] DATE: [Date] SCALE: [Scale] SHEET NO: [Number] TOTAL SHEETS: [Total]
		PROJECT NO: [Number] DRAWN BY: [Name] CHECKED BY: [Name] DATE: [Date]

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LiteMast 7.5m SD

7.5 SD METRE LITEMAST KIT

ITEM	DESCRIPTION	DRAWING No.	QUANTITY
1	290 TOWER 1 TONNE HEADBLOCK	LM290-HB	1
2	BRACE ARM JOINT FRAME	LM290-BJF	1
3	BRACE ARMS 2" TUBE FOR 7.5SD METRE LITEMAST	LM290-7.5SD-BA	2
4	290 LITEMAST BASE SECTION C/W CONNECTIONS	LM290-RSA	1
5	290 LITEMAST END SECTION FOR SCREWJACK	LM290-EFS	2
6	450MM SCREWJACKS	BOUGHT IN	5
SUGGESTED TRUSS			
7	4 METRE SECTION LITEPRO 290-4-SD	LP290-4SD-S4000	3
8	3 METRE SECTION LITEPRO 290-4-SD	LP290-4SD-S3000	1
	CONNECTOR PACKS	LP4/ACP	3

REV	DESCRIPTION	DATE	BY	CHECKED	APPROVED	SCALE	TITLE
							7.5M LITEMAST SD GENERAL ASSEMBLY
							DESIGNER
							LITERATURE/DESIGN
							290-7.5-SD
							ISSUED BY
							DATE
							BY
							DATE
							BY
							DATE
							BY
							DATE

5.0 OPERATION DESCRIPTION

To be read with reference to the general assembly drawing.

ASSEMBLY PROCEDURE

Ensure the area the LiteMast is being built is free from obstruction and people.

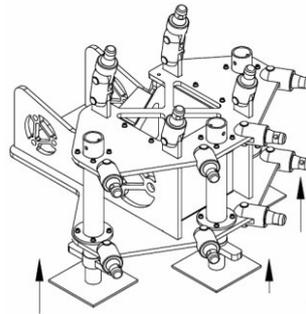
Before the LiteMast is assembled a full visual inspection must be performed on all equipment paying special attention to missing pins, dented truss & damaged clamps. If damage is seen **DO NOT ATTEMPT TO RAISE THE MAST NOR LIFT ANY WEIGHT**. Contact your supplier for replacement parts.

DO NOT RAISE THE MAST IF THE WIND SPEEDS ARE ABOVE 16m/s

Under no circumstances should any weight be lifted until the mast has been raised completely. The diverter rigging frame is not designed to be load bearing and could fail if more than the weight of the mast is raised on it.

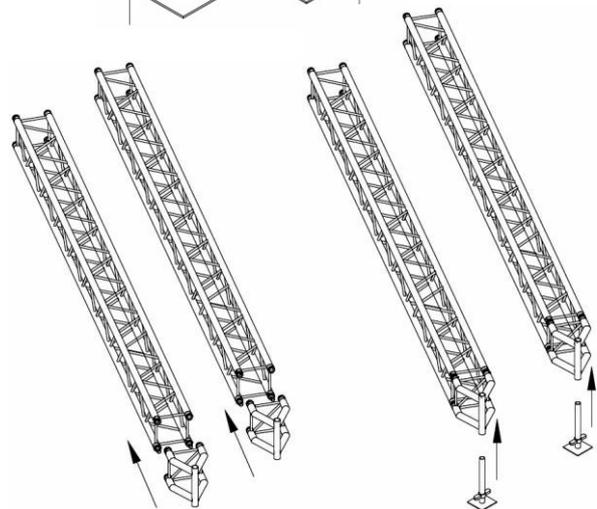
The LiteMast should only be assembled by competent personnel. If in any doubt **DO NOT ATTEMPT MAST ASSEMBLY**, contact your supplier or Litestructures directly who can give advice and training as necessary. Assembly requires knowledge of our LitePro system and how it connects. This knowledge is assumed through-out.

1. Place three screw jacks into the tubes of the ProBase and level the ProBase by turning the screw jack nuts.



2. Connect each FOOT to the legs Truss (4.5m = 2m, 7.5m = 4m, 9.5m = 5m heavy load)

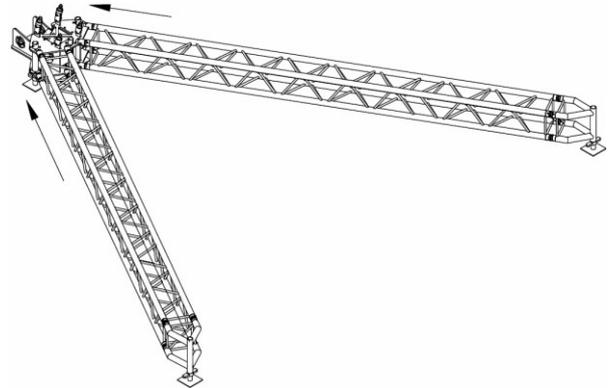
3. Insert a screw jack into each foot



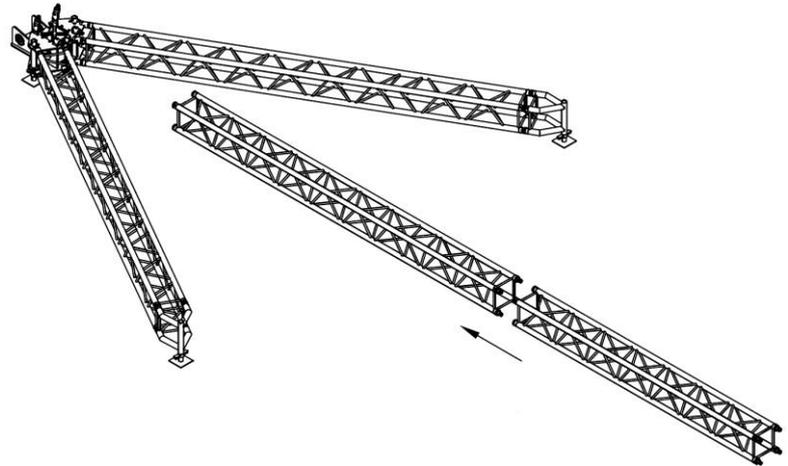
Ensure all parts are level before proceeding to the next step

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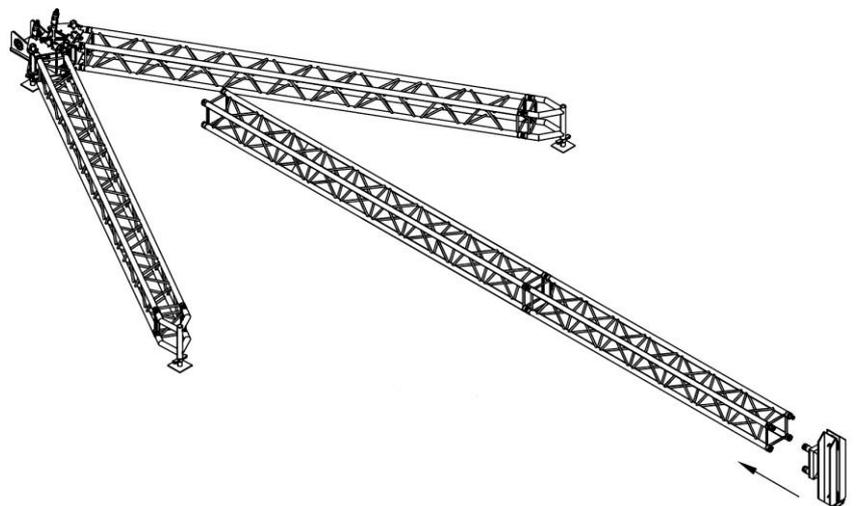
4. Connect the leg assemblies to the ProBase



5. Connect the mast truss together (4.5m = 2x2m, 7.5m = 1x3m & 1x4m, 9.5m = 3x3m heavy load)

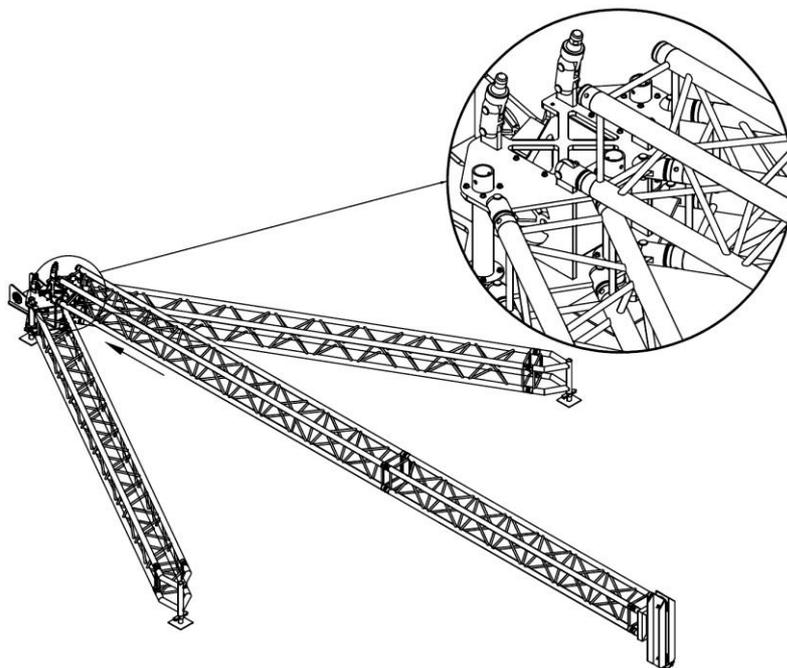


6. Connect the MAST HEAD to the mast truss

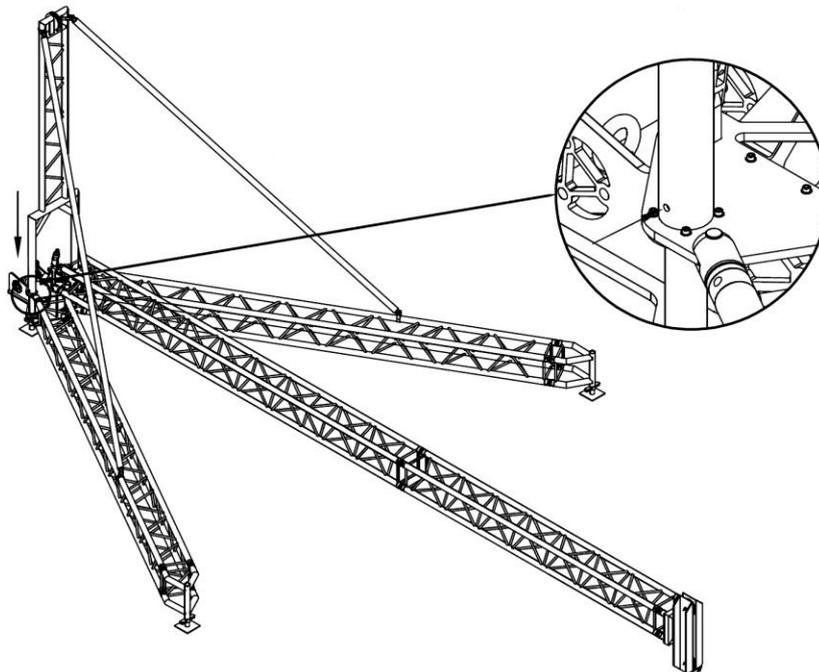


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7. Connect the mast assembly to the front two conical connectors.

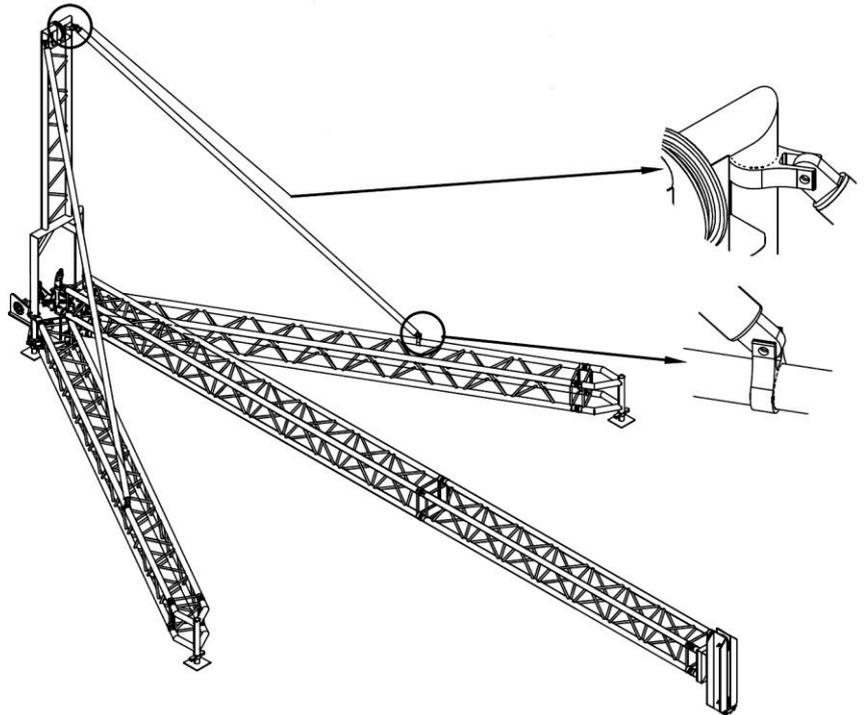


8. Place the Diverter Rigging Frame onto the top of the back two screw jacks mounting tubes and pin in position.
THE LOCKING PINS MUST BE USED AND SECURE THE DIVERTER FRAME.

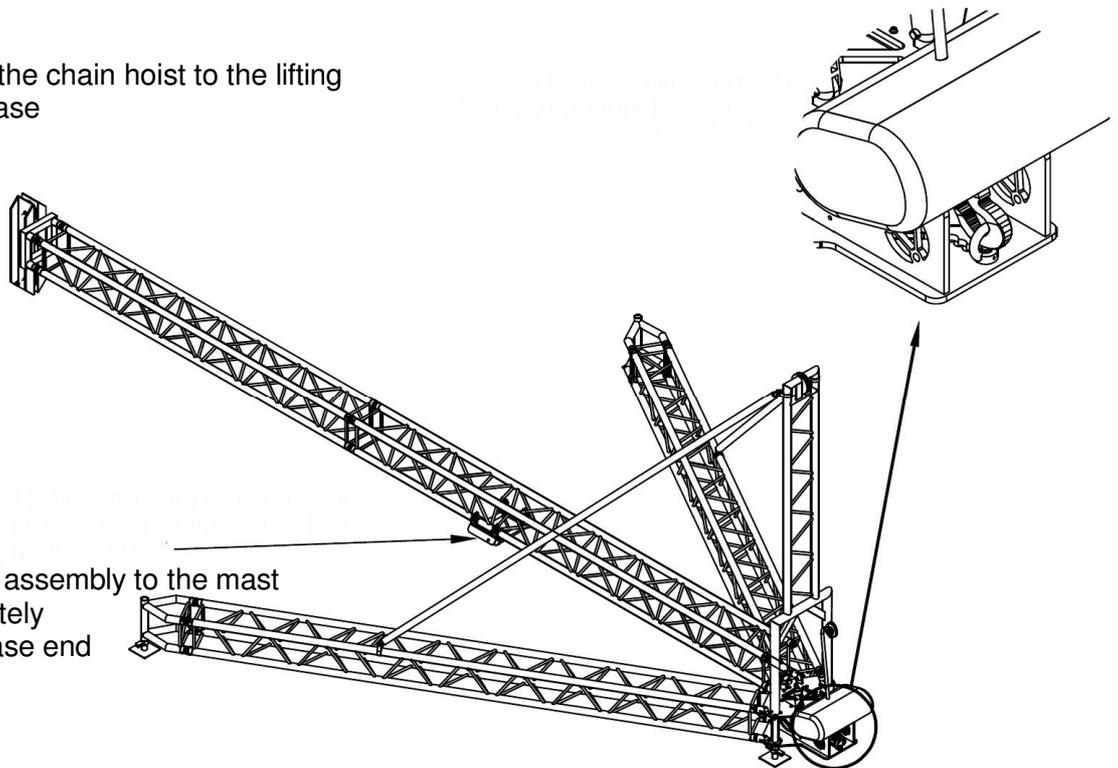


Operating & Maintenance Instructions

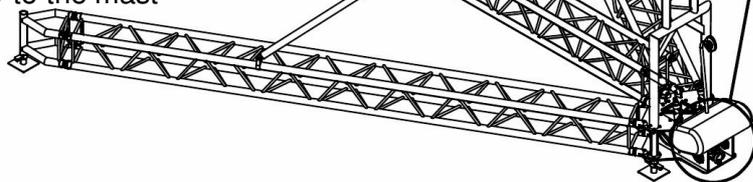
9. With the Diverter Frame vertical clamp the leg trusses using the clevis assemblies.
MAKE SURE THE CAPTURED ROTATING PIVOTS ARE AT THE TOP OF THE DIVERTER FRAME BEFORE CLAMPING THE BRACES IN PLACE.



10. Hook the end of the chain hoist to the lifting eye on the ProBase



11. Attach the brace assembly to the mast truss, approximately 2.5m from ProBase end



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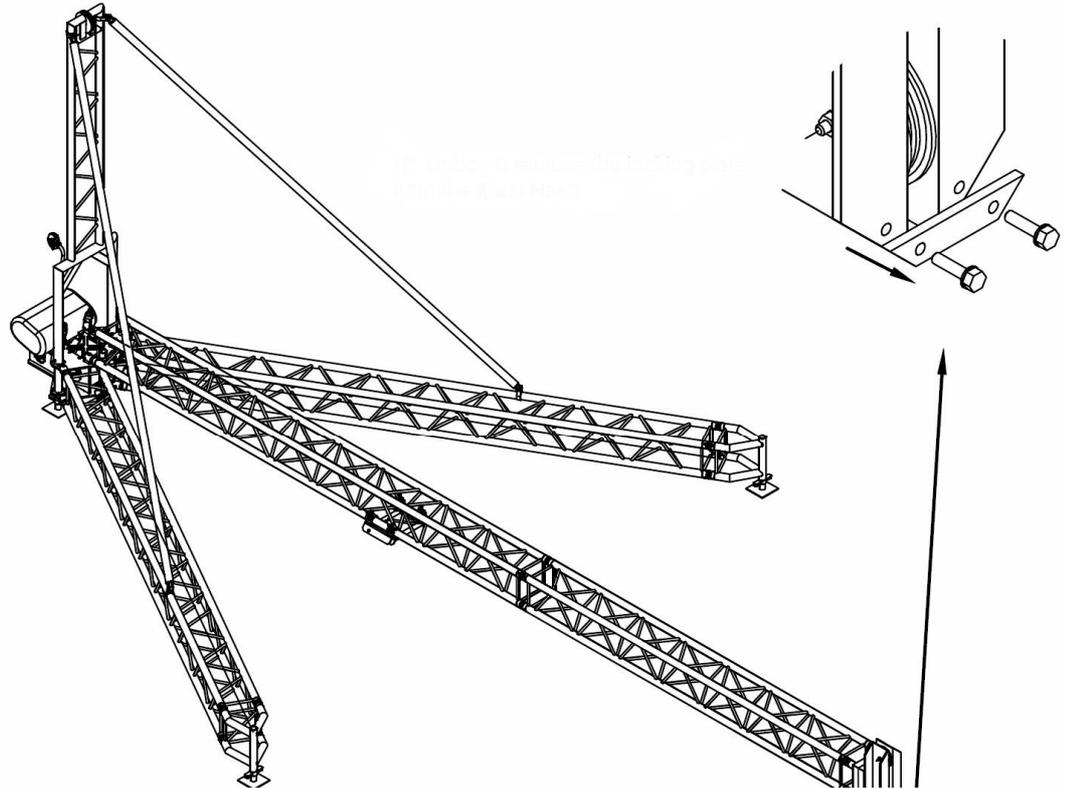
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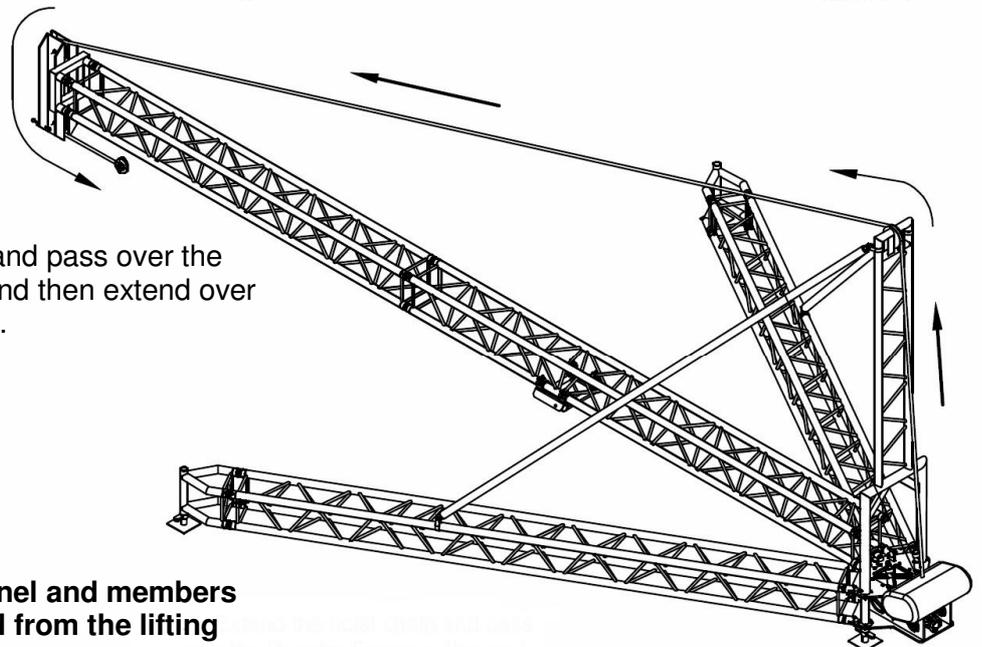
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12. Unbolt and remove the locking plate from the Mast Head.



13. Extend the hoist chain and pass over the Diverter Frame pulley and then extend over both Mast Head pulleys.



Always ensure all personnel and members of the public are excluded from the lifting zone

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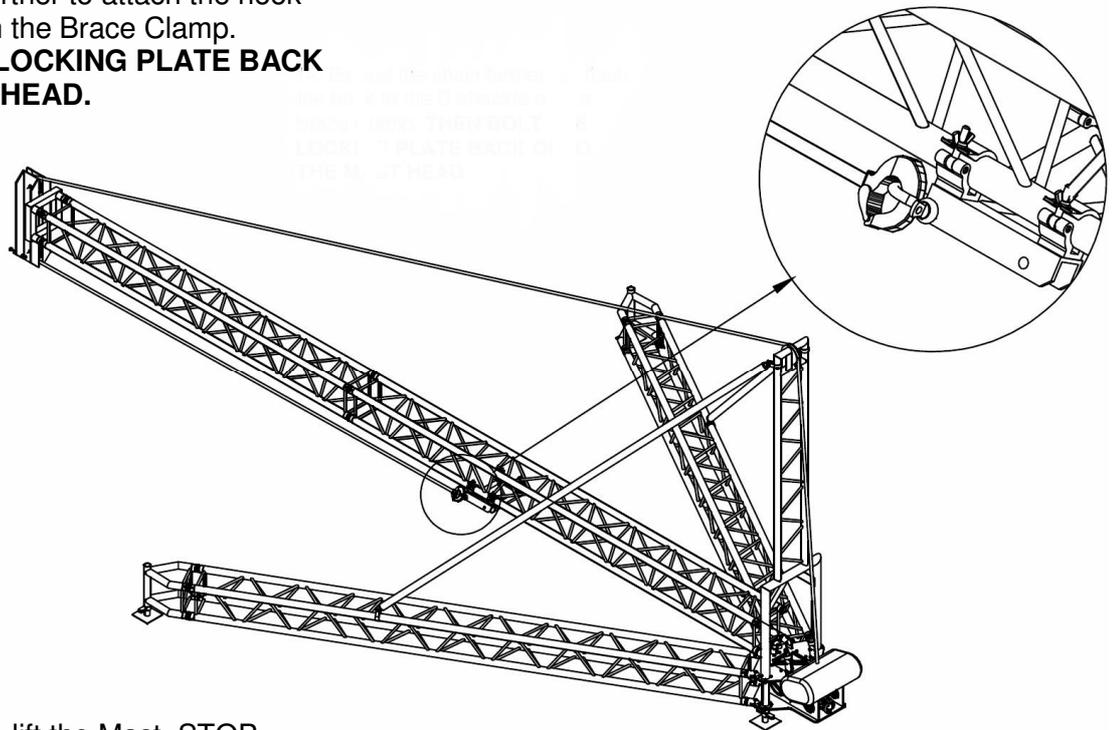
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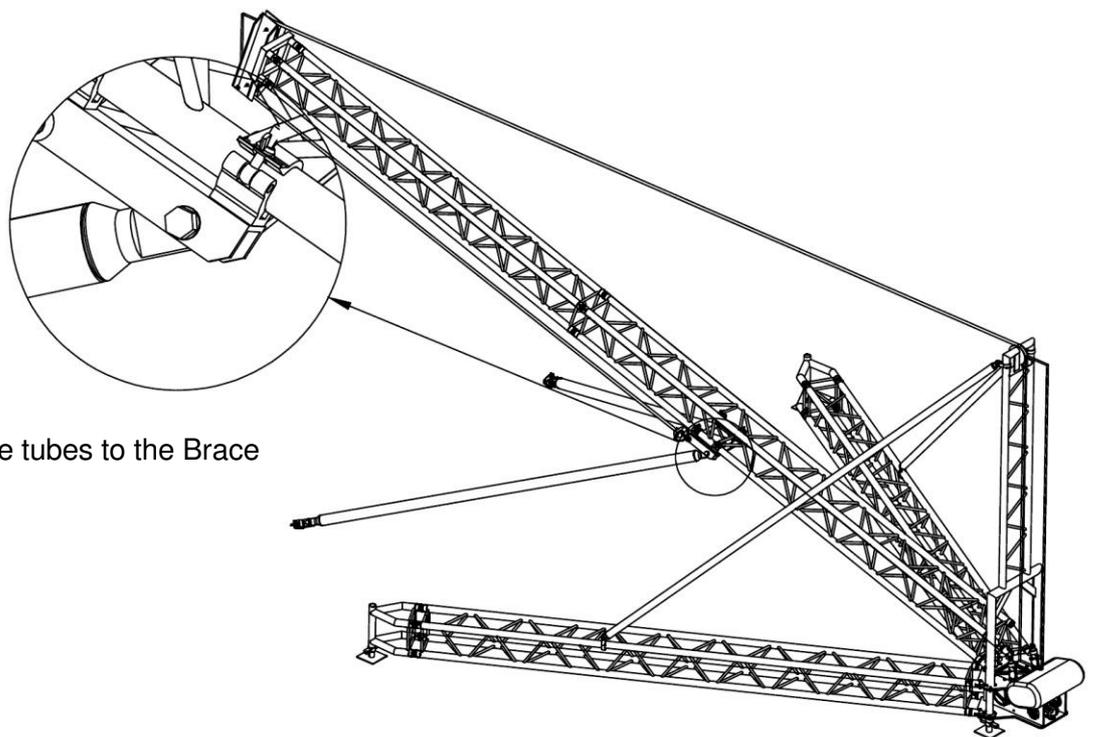
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14. Extend the chain further to attach the hook to the D-shackle on the Brace Clamp. **THEN BOLT THE LOCKING PLATE BACK ONTO THE MAST HEAD.**



15. Retract the chain to lift the Mast, STOP once the Mast Head end is approximately 2m off the floor.



16. Attach the brace tubes to the Brace Assembly

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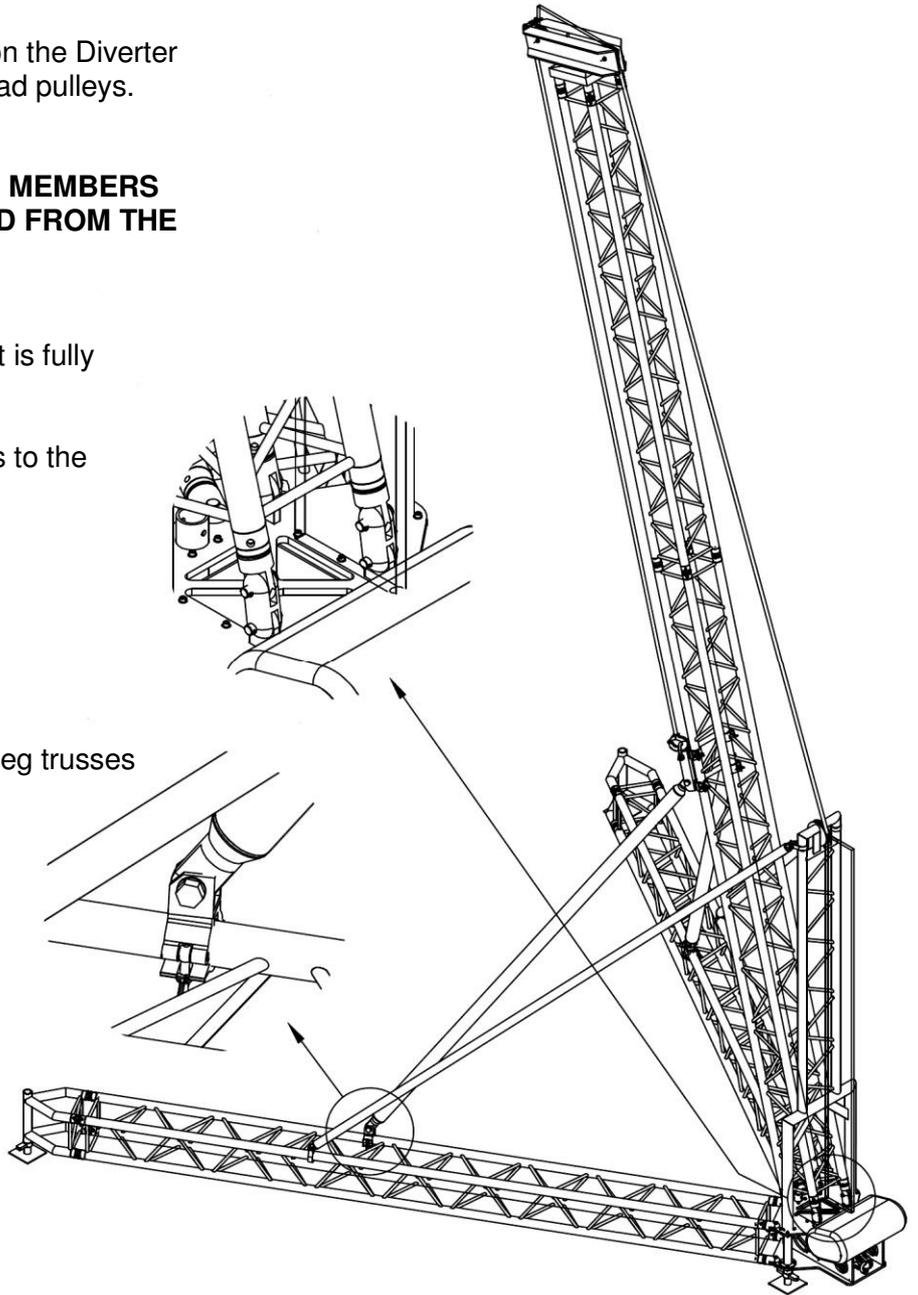
17. Check that the chain is riding on the Diverter Frame pulley and the Mast Head pulleys.

ENSURE ALL PERSONNEL AND MEMBERS OF THE PUBLIC ARE EXCLUDED FROM THE LIFTING ZONE

18. Retract the chain until the Mast is fully raised

19. Pin the remaining 2 connectors to the bottom of the Mast

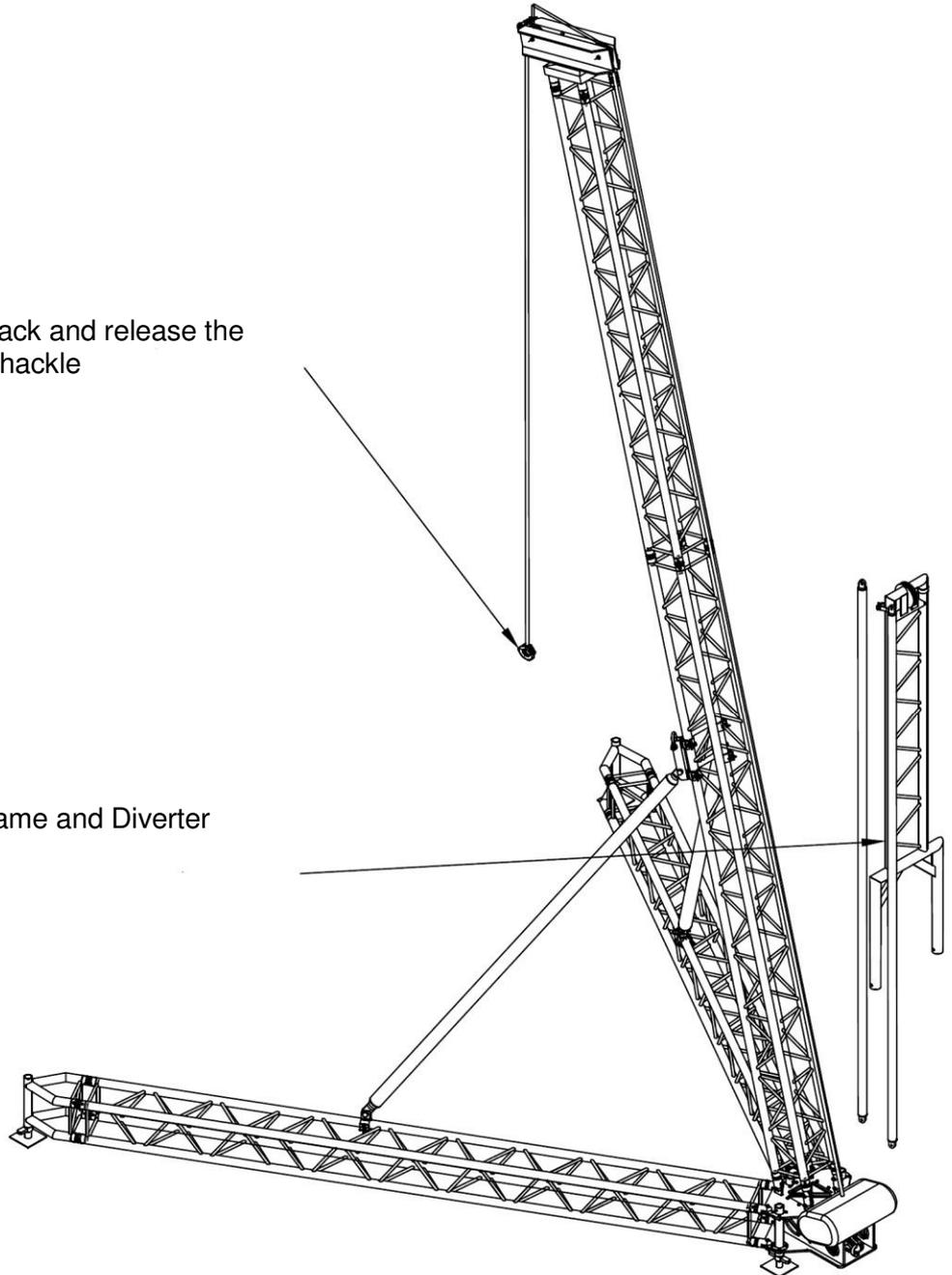
20. Clamp the Mast braces to the leg trusses



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21. Extend the chain until slack and release the chain hook from the D-shackle

22. Remove the Diverter Frame and Diverter Frame braces



23. The LiteMast is now ready to raise a PA stack

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OPERATING PROCEDURE

The PA stack must be raised in accordance to instructions from the PA suppliers. If the stack needs bracing brace only brace to the mast.

LOWERING PROCEDURE

When lowering, ensure the area is clear of obstructions and people. No one should be allowed to enter the area.

Lower the P.A to the floor and detach from the chain, leaving enough slack to enable the fitting of the diverter frame.

Place the diverter frame onto the ProBase as per instructions 7. Place chain over diverter pulley wheel.

Once secure, run the chain back in until the hook jams into the hook plate.

Ensure the chain is tight then begin to lower the LiteMast using the chain hoist.

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6.0 MAINTENANCE

All personnel concerned with the maintenance of the equipment shall be qualified and competent and must be fully aware of the contents of this manual, with special regard to the safety advice outlined in section 2.0 of this manual.

General Maintenance Schedule

Daily Maintenance

Ensure that all parts are not damaged.
Ensure all fasteners are tight
Clean equipment of excess dirt
Check for any trapped debris and remove.

Weekly Maintenance

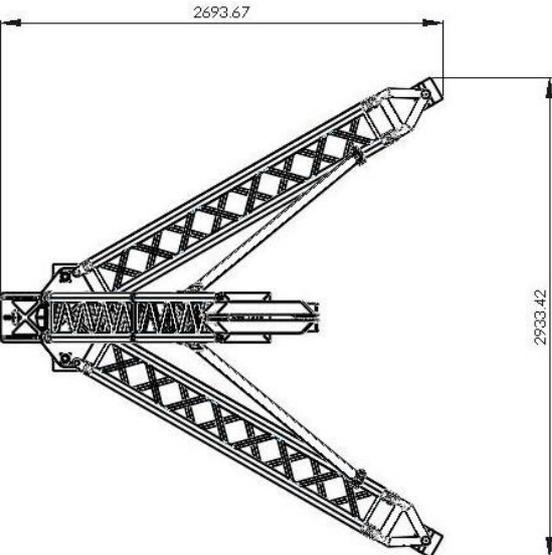
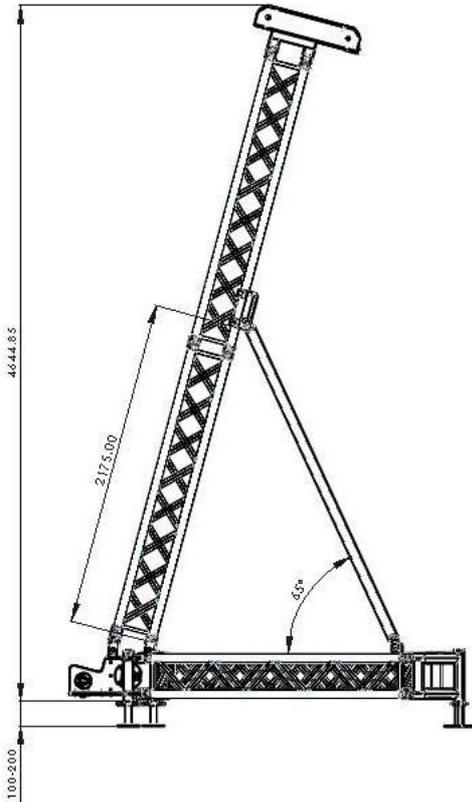
Check all taper pins and 'R' clips for looseness and replace as needed

Check all components for damage are wear.

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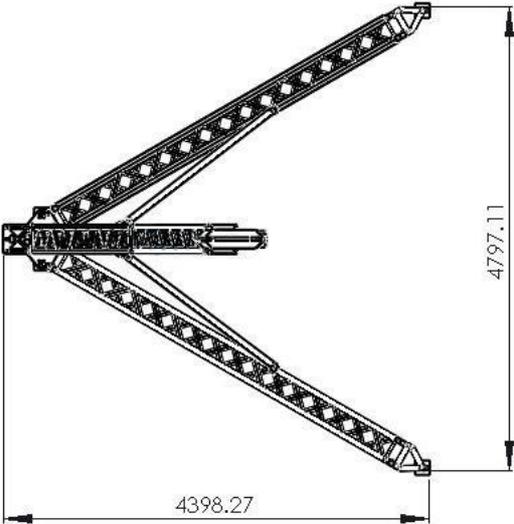
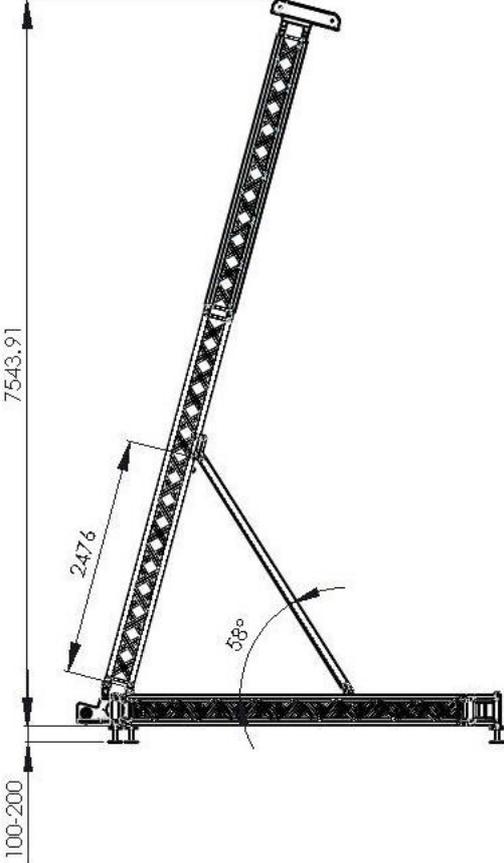
7.0 DRAWINGS

LiteMast 4.5M



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LiteMast 7.5m



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LiteMast 9.5m

