LASER®

Part No. 8338

EV Battery Lifting Frame

for 4/6 Point Lifting SWL 700kg

Instructions

www.lasertools.co.uk

Introduction

A fully adjustable and universal EV battery lifting system, suitable for all types of underslung/skateboard style of EV batteries (max SWL: 700kg), suitable for both four or six point lifting requirements.

- Main lifting beam with moveable lifting eye, for use with workshop lifting hoist/ engine crane (1 tonne model required, Laser Part No. 8337 or equivalent).
- Three transverse beams, with adjustable lifting brackets (2x beams for 4-point lifting, 3x beams for 6-point lifting).
- Six adjustable chain slings, plus 6 each of M12, M16 & M20 eyebolts for attachment to EV battery lifting points.
- SWL: 700kg, tested to 50% overload capacity.
- Specifically designed for lifting & moving EV batteries when they have been removed from the vehicle. Ideal for use in conjunction with Laser EV Battery Mobile Adjustable Bench, Part No 8339.

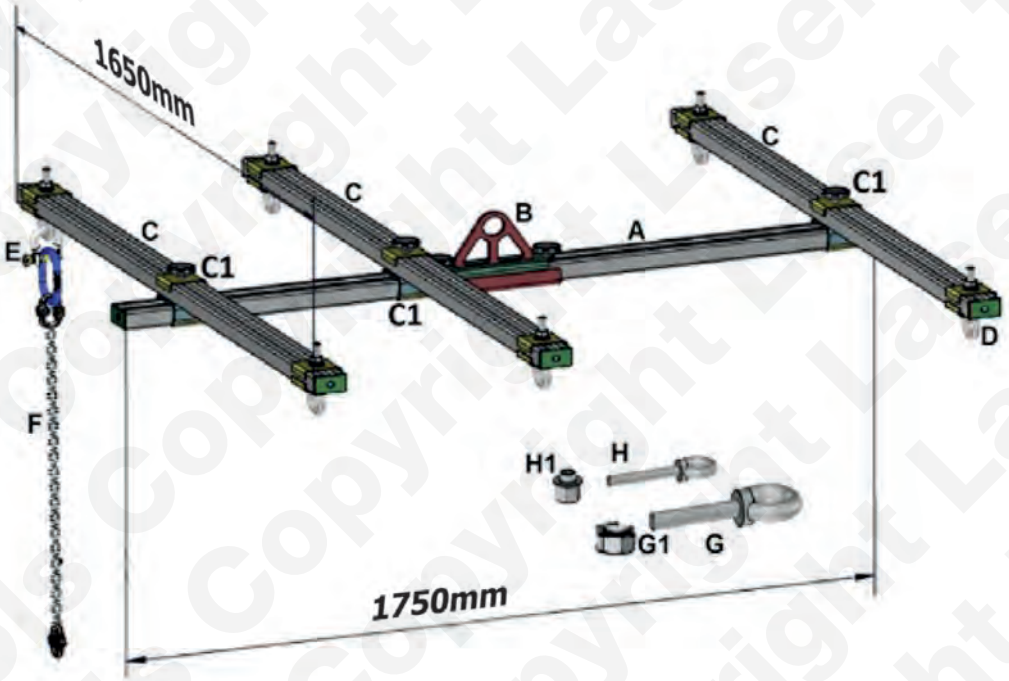
Warnings & Precautions

- Always follow the vehicle manufacturers instructions when working with high voltage EV batteries.
- Ensure the angle of all beams does not exceed 6 degrees from horizontal.
- Ensure the cross beams are placed vertically in line with the manufacturers' recommended battery lifting points.
- Cross beam chain eyes must be equally spaced either side of the main beam.
- All lifting chains must be correctly adjusted to ensure the load is evenly distributed.
- The lifting crane used must be rated to safely lift the combined load of the lifting frame and battery. (Lifting frame 70.5kg + battery weight).
- Always tighten all lifting chain eyes and lifting bar fixings to prevent sliding.
- SWL (Safe Working Limit) 700kg.
- For any battery over 350kg Laser Tools recommends the use of all three cross bars (six lifting points) to ensure adequate load distribution.

NEVER:

- **NEVER** work under a hanging battery.
- **NEVER** leave the battery hanging for long periods of time or unattended.
- **NEVER** exceed the maximum safe working load of the lifting frame.

Components



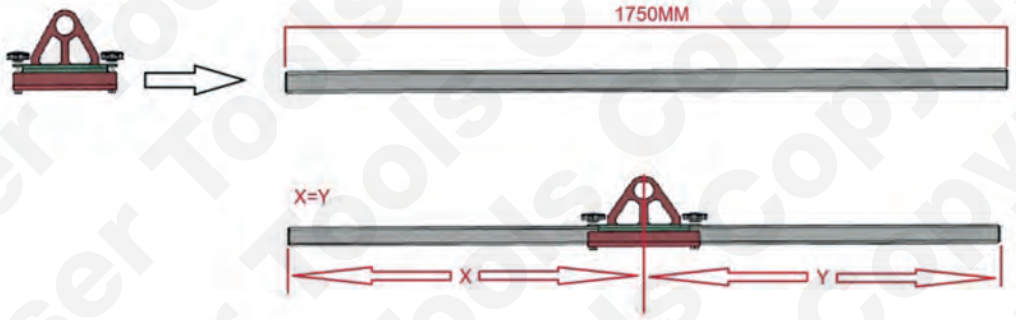
Ref.	Description	Quantity	Notes
A	Main Beam	1	1750mm long
B	Main Beam Saddle	1	Mount centrally
C	Cross Beams	3	Beams 1650mm long
C1	Cross Beam Clamps	3	
D	Cross Beam Chain Eyes M16	6	Adjust position then tighten
E	Chain Shackles	12	
F	Lifting Chains with Shortening Hooks	6	Always mount with shortening hooks at the top
G	M20 Battery Mounting Eyes	4	
G1	M20 Nuts	4	
H	M12 Battery Mounting Eyes	6	
H1	M12 Top Hat Nuts	6	For H

NOTE: Lifting frame weight = 70.5kg

Instructions

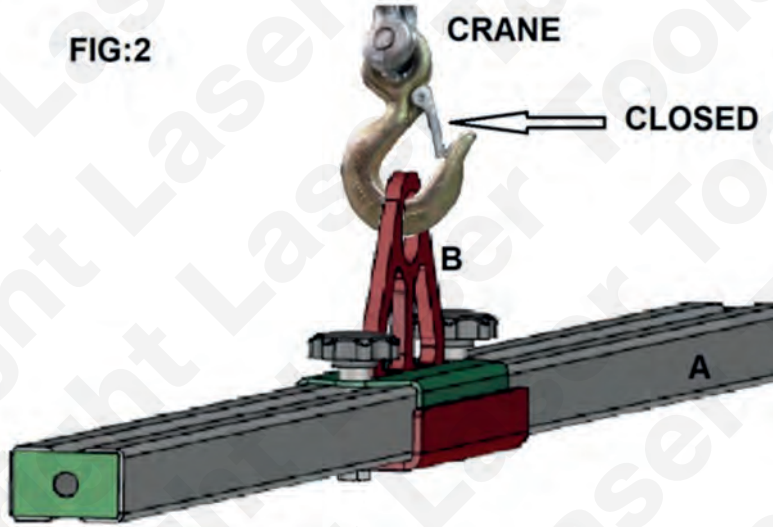
- Assemble the main lifting saddle centrally on the main beam and tighten down the 2 hand clamp fixings See figure 1.

FIG:1



- Lower the lifting crane to its lowest height and mount the main beam on the lifting crane. Ensure the crane hook is closed. See figure 2.

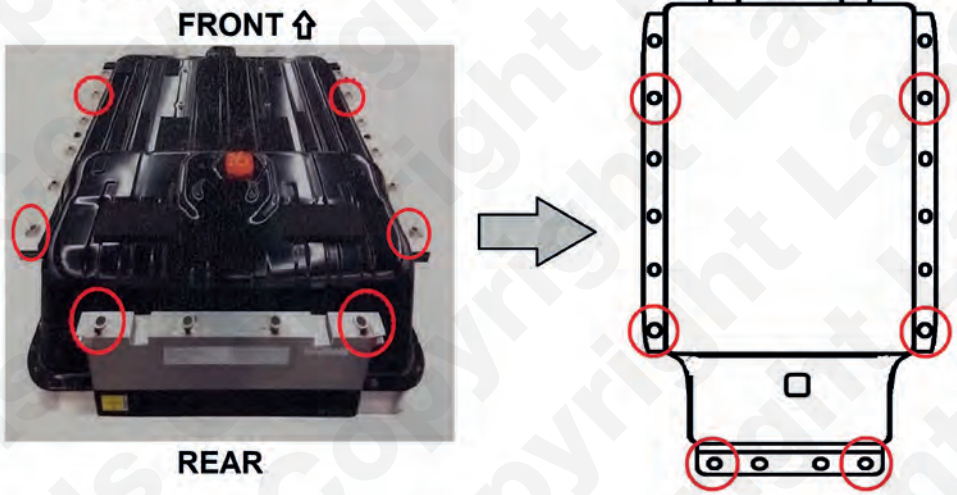
FIG:2



Instructions

- Identify the positions for the battery lifting points and attach the appropriate lifting eyes (G or H according to the size of the fixing point) to the battery. Tighten hand tight.

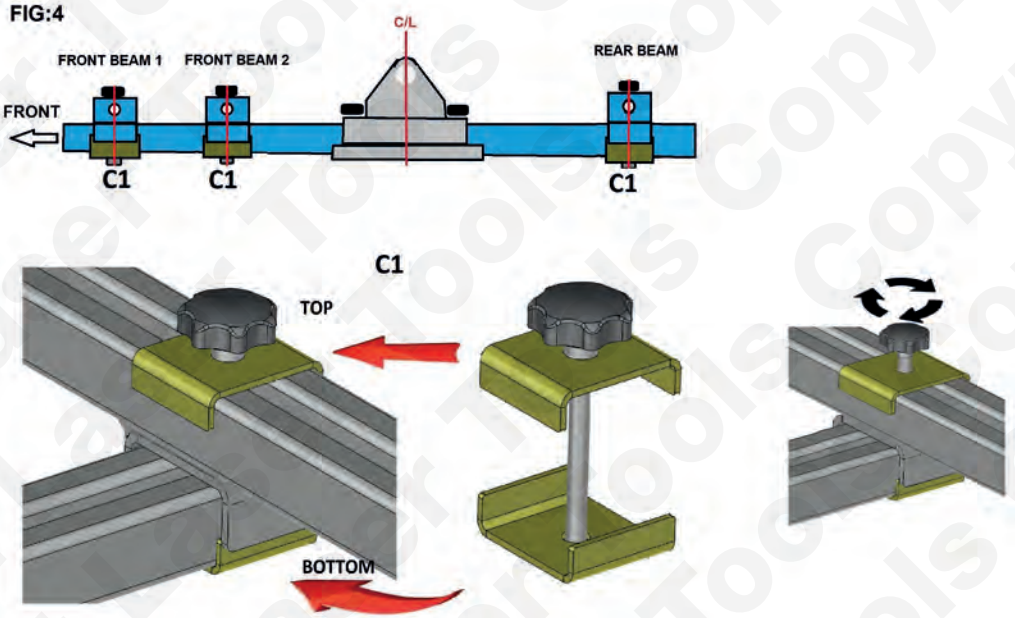
Fig:3



Instructions

- Mount the cross beams on the main beam as shown in figure 4. Once positioned correctly tighten the clamp bolts.
- **WARNING:** Pay special attention to the way the cross beam clamps are fitted. The clamps should clamp the main and cross beams as shown in figure 4.

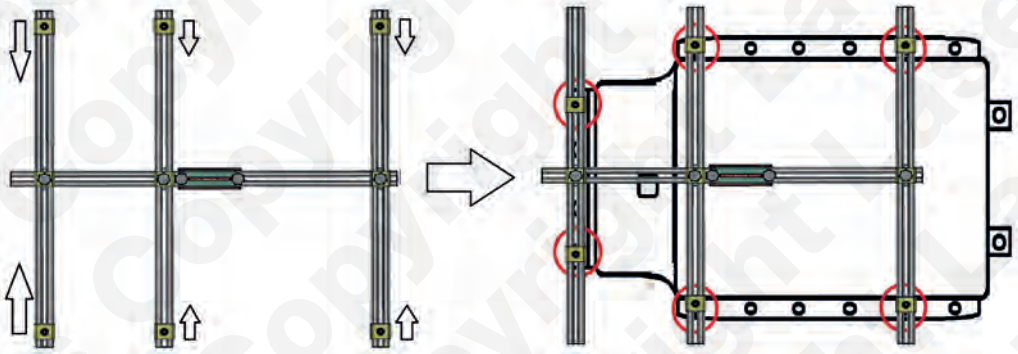
FIG:4



Instructions

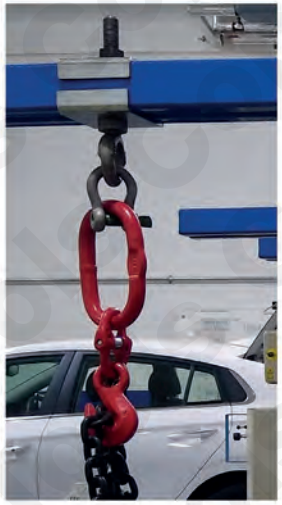
- Carefully manoeuvre the lifting crane so the frame sits over the battery with the main beam aligned to the centre line of the battery.
- Positon the lifting chain eyes on each beam so they are directly over the relevant battery mounting points. See figure 5.

FIG:5



- Place the lifting chains on the cross beam lifting eyes as shown in figure 6. Ensure all shackles are fully tightened.

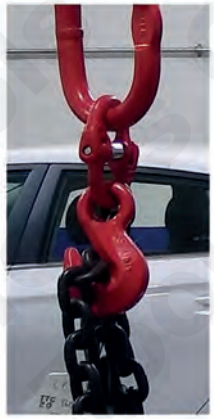
FIG:6



Instructions

- Connect the lifting chains on the high end of the lifting frame and adjust the chains as shown in figure 7.
- Starting at the high end of the lifting frame, connect the chains to the battery, lifting eyes and shortening the chains to the required lengths as shown in figure 7. All chains must be the correct length to evenly take the load of the battery.

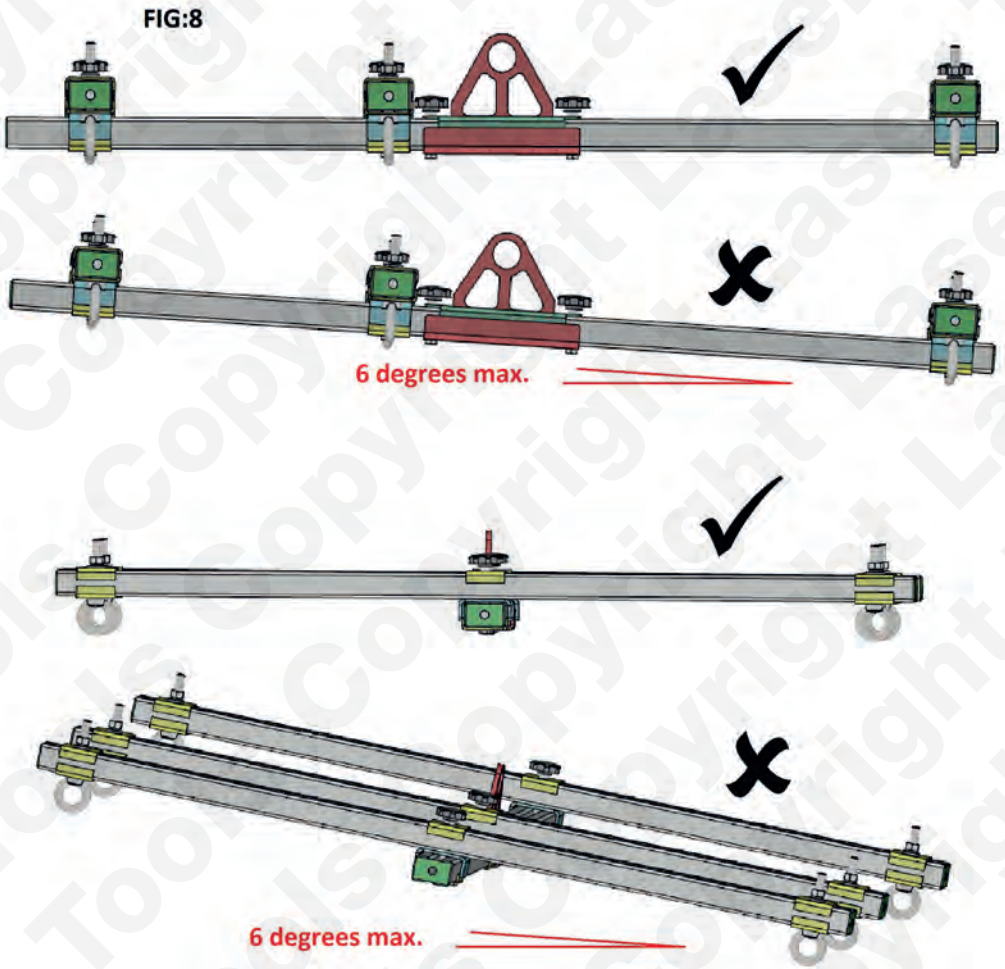
FIG:7



NOTE: ENSURE CHAINS ON THE SAME BEAM ARE THE SAME LENGTH.

- SLOWLY raise the crane to take the load of the battery. The load should be equal across all the chains and the battery should rise level. The main lifting beam MUST remain within 6 degrees of horizontal once the load is lifted. See figure 8.
- If the battery does not lift level see notes for levelling the frame in the next section.

FIG:8



Levelling the frame/battery assembly:

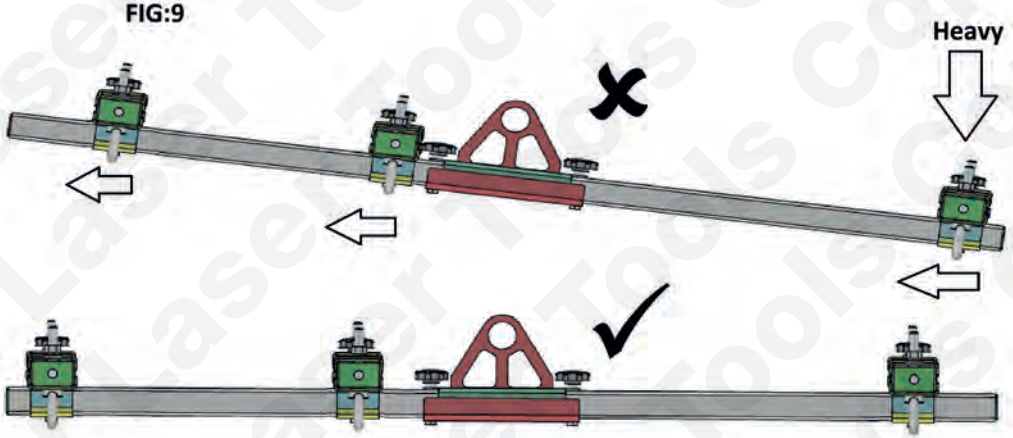
EV batteries are normally evenly balanced side to side but are often not evenly balanced front to rear. This can mean that after initial set-up of the lifting frame some adjustment may be required to achieve a level lift.

WARNING: only attempt to adjust the frame with the weight OFF and the battery secure on the floor or table.

Adjustment should be made in small increments by moving the cross beams along the main spine.

See figure 9.

FIG:9



NOTE: Level lift can only be checked with the weight **ON**. Adjustment of the frame can only made with the weight **OFF**.

NEVER attempt to adjust the level with the battery weight on the frame.

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