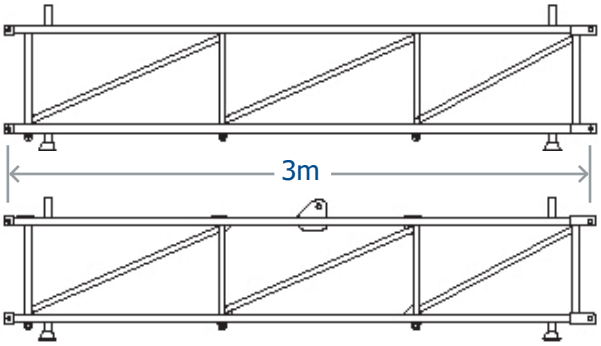
User Instructions
MLS3T Lattice Spreader 6-42m

Modulift
working between the hook and the load

The Modulift Lattice System (MLS3T) is a light-weight modular spreader suitable for long, light loads. Maximum spans from 6m up to 42m in 3m increments are achievable using this system. Lower support slings can be attached to the frames every 2m to ensure a uniformly distributed load.

Fig. 1 – Components

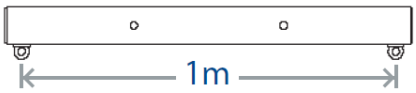


Frame type 1
100 kg

Frame type 2
137 kg

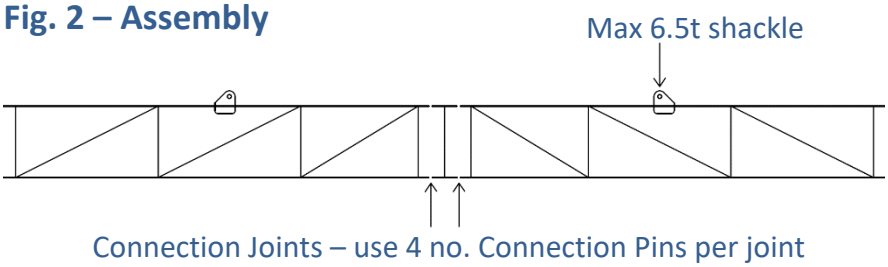
Frame type 3
17.5 kg

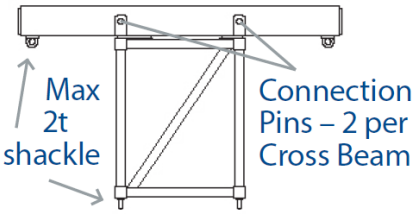
Cross Beam
7.5 kg



Connection Pin

Fig. 2 – Assembly





Typical Cross Beam connection

MLS3T Lattice Spreader 6m-42m Specification

- Rated at 3 tonnes WLL – Uniformly Distributed Load Only (Up to 27m Span only).
- STV (sling to vertical) angle, β, 45° or less.
- Lifting points: Slings can be connected to weld eyes on ends of 1m span Cross Beams, or to weld eyes on underside of frames.

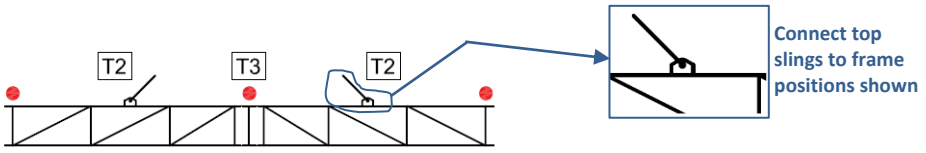
WARNING!

- Personnel using this system should be suitably trained, competent and have a clear understanding of Safe Slinging procedures.
- The use of Modulift equipment must be in accordance with the procedures laid down in 'Lifting Operations and Lifting Equipment Regulations 1998' (LOLER).
- **The correct sling length is critical to the safe use of the spreader**
  The STV (sling to vertical) angle, β, must not be more than 45°
- **Do not exceed stated WLL at the specific span**
- **The number of bottom lifting points must not be less than shown in the diagram overleaf**
- **Central support slings to be used for 21m+ configurations – see Fig 12**
- **Maximum 1.5m overhang of the uniform load at each end of the lattice spreader**
- **Connection Pins - contact Modulift for replacements**

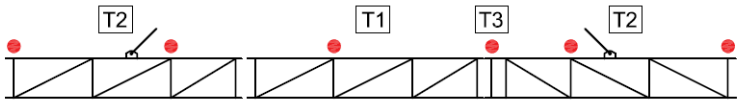
Fig. 3 – Configuration: 6m to 18m (3t capacity)

● = Connection point for Cross Beams or for attaching bottom slings to frame underside

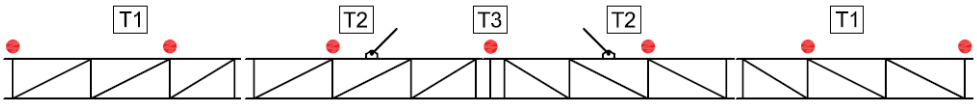
T1 = Type 1 Frame
T2 = Type 2 Frame
T3 = Type 3 Frame



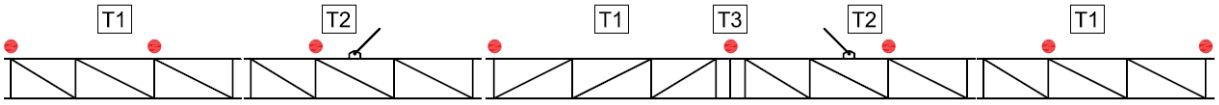
6m: Self Wt: 318 kg, Connection Pins: 8, Cross Beams: 3, Cross Beam Pins: 6, Min. Top Sling length: 2.2m



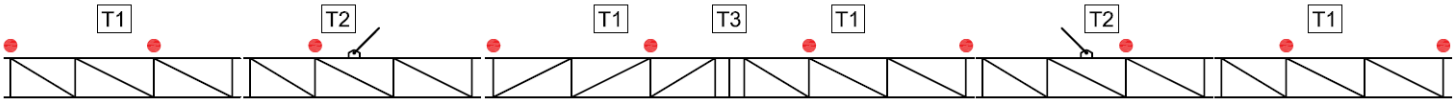
9m: Self Wt: 444 kg, Connection Pins: 12, Cross Beams: 6, Cross Beam Pins: 12, Min. Top Sling length: 4.3m



12m: Self Wt: 552 kg, Connection Pins: 16, Cross Beams: 7, Cross Beam Pins: 14, Min. Top Sling length: 2.2m



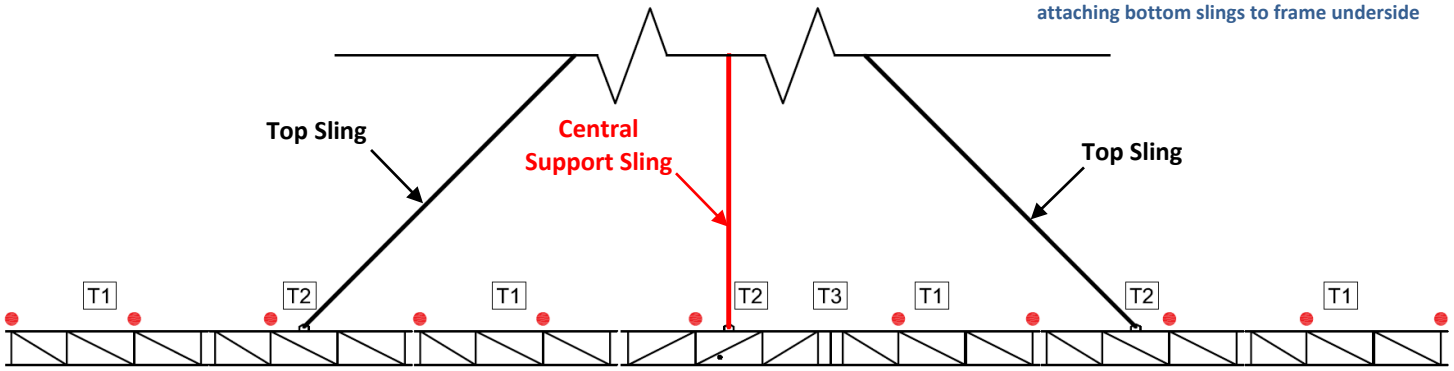
15m: Self Wt: 661 kg, Connection Pins: 20, Cross Beams: 8, Cross Beam Pins: 16, Min. Top Sling length: 4.3m



18m: Self Wt: 778 kg, Connection Pins: 24, Cross Beams: 10, Cross Beam Pins: 20, Min. Top Sling length: 6.5m

Fig. 4 – Configuration: 21m (3t capacity)

● = Connection point for Cross Beams or for attaching bottom slings to frame underside

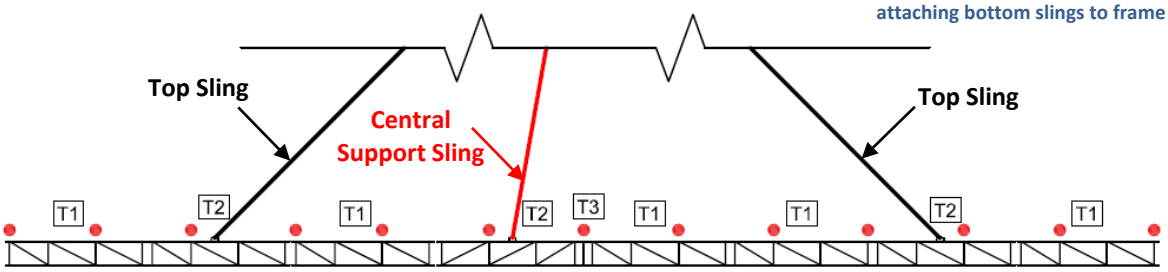


21m: Self Wt: 887 kg, Connection Pins: 28, Cross Beams: 11, Cross Beam Pins: 22, Min. Top Sling length: 8.7m

Central Support Sling: Length to be set on site – adjust until sag is taken out of lattice structure, see Fig 12 (if using 8.7m top slings, approx. length of CSS is 6m – adjust to suit)

Fig. 5 – Configuration: 24m (3t capacity)

● = Connection point for Cross Beams or for attaching bottom slings to frame underside

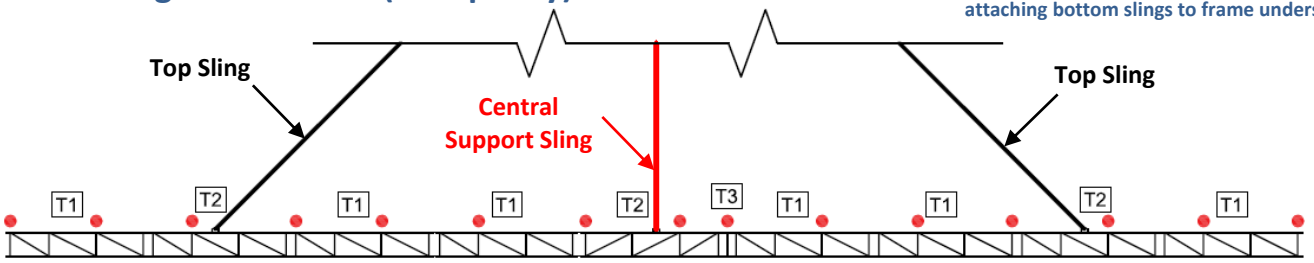


24m: Self Wt: 1005 kg, Connection Pins: 32, Cross Beams: 13, Cross Beam Pins: 26, Min. Top Sling length: 10.8m

Central Support Sling: Length to be set on site – adjust until sag is taken out of lattice structure, see Fig 12 (if using 10.8m top slings, approx. length of CSS is 7.8m – adjust to suit)

Fig. 6 – Configuration: 27m (3t capacity)

● = Connection point for Cross Beams or for attaching bottom slings to frame underside

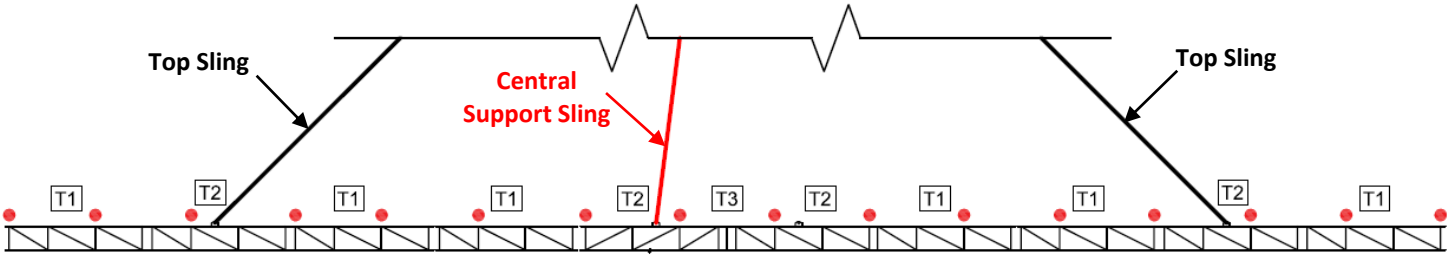


27m: Self Wt: 1121 kg, Connection Pins: 36, Cross Beams: 15, Cross Beam Pins: 30, Min. Top Sling length: 12.8m

Central Support Sling: Length to be set on site – adjust until sag is taken out of lattice structure, see Fig 12 (if using 12.8m top slings, approx. length of CSS is 9m – adjust to suit)

Fig. 7 – Configuration: 30m (2t capacity)

● = Connection point for Cross Beams or for attaching bottom slings to frame underside

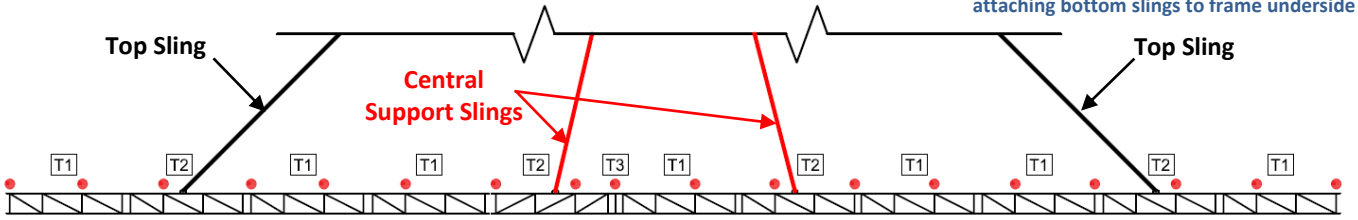


30m: Self Wt: 1231 kg, Connection Pins: 40, Cross Beams: 16, Cross Beam Pins: 32, Min. Top Sling length: 15m

Central Support Sling: Length to be set on site – adjust until sag is taken out of lattice structure, see Fig 12 (if using 15m top slings, approx. length of CSS is 10.6m – adjust to suit)

Fig. 8 – Configuration: 33m (2t capacity)

● = Connection point for Cross Beams or for attaching bottom slings to frame underside

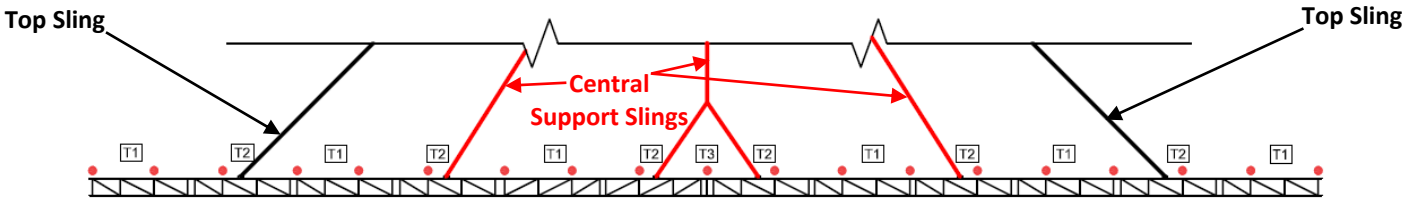


33m: Self Wt: 1347 kg, Connection Pins: 44, Cross Beams: 18, Cross Beam Pins: 36, Min. Top Sling length: 17m

Central Support Slings (2 no.): Length to be set on site – adjust until sag is taken out of lattice structure, see Fig 12 (if using 17m top slings, approx. length of CSS is 12.5m – adjust to suit)

Fig. 9 – Configuration: 36m (2t capacity)

●= Connection point for Cross Beams or for attaching bottom slings to frame underside

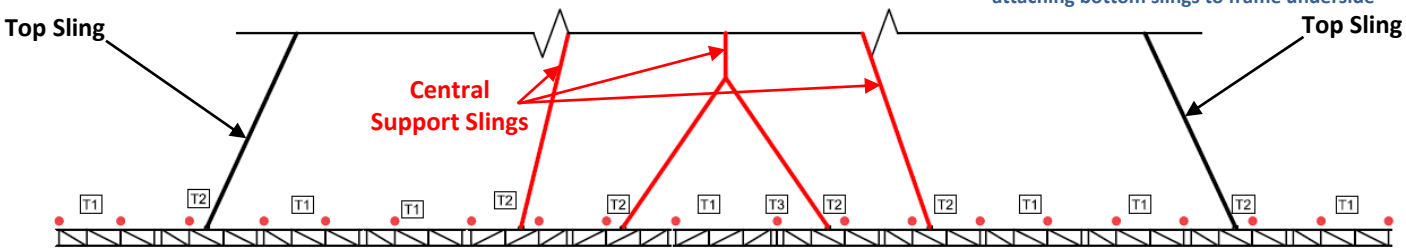


36m: Self Wt: 1604 kg, Connection Pins: 48, Cross Beams: 19, Cross Beam Pins: 38, Min. Top Sling length: 19m

Central Support Sling (3 no.): Length to be set on site – adjust until sag is taken out of lattice structure, see Fig 12 (if using 19m top slings, approx. length of CSS outer is 15.5m and CSS inner is 14m – adjust to suit)

Fig. 10 – Configuration: 39m (2t capacity)

●= Connection point for Cross Beams or for attaching bottom slings to frame underside

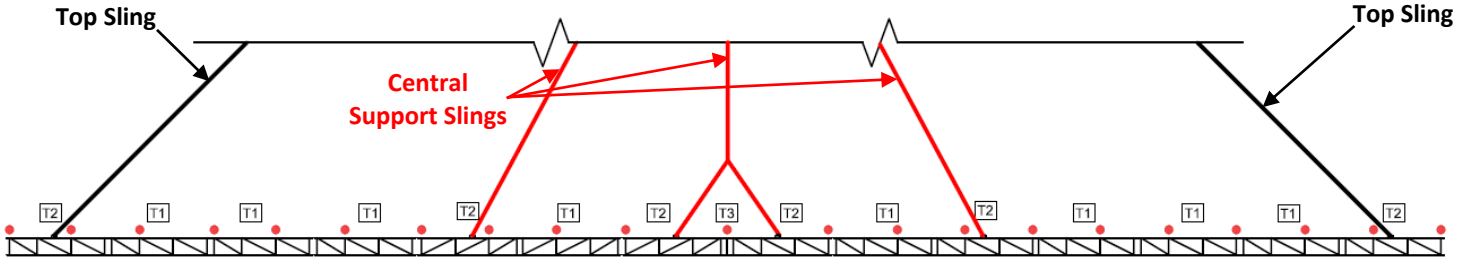


39m: Self Wt: 1712 kg, Connection Pins: 52, Cross Beams: 20, Cross Beam Pins: 40, Min. Top Sling length: 21.5m

Central Support Sling (3 no.): Length to be set on site – adjust until sag is taken out of lattice structure, see Fig 12 (if using 21.5m top slings, approx. length of CSS outer is 16.1m and CSS inner is 15m – adjust to suit)

Fig. 11 – Configuration: 42m (2t capacity)

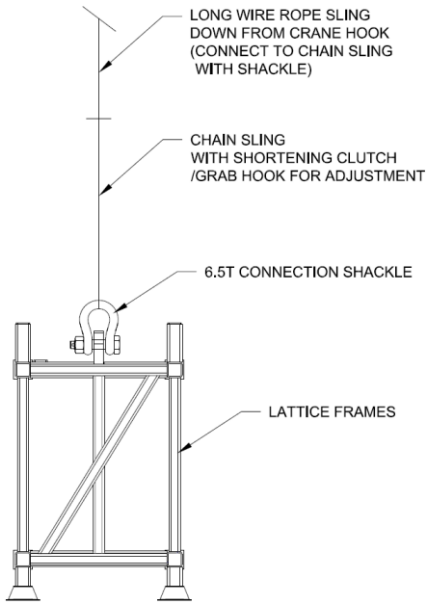
●= Connection point for Cross Beams or for attaching bottom slings to frame underside



42m: Self Wt: 1800 kg, Connection Pins: 56, Cross Beams: 21, Cross Beam Pins: 42, Min. Top Sling length: 27.6m

Central Support Sling (3 no.): Length to be set on site – adjust until sag is taken out of lattice structure, see Fig 12 (if using 27.6m top slings, approx. length of CSS outer is 20.9m and CSS inner is 19.5m – adjust to suit)

Fig. 12 – Central Sling Connection Details



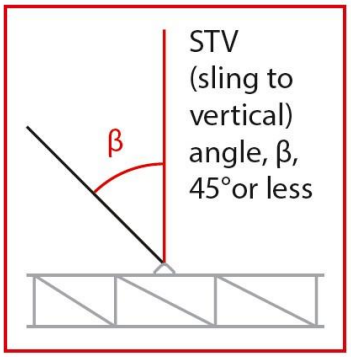
Setup of the central support sling where required is essential to ensure safe use of the lattice.

The central support sling should be tensioned at all times, and the aim is to remove/reduce sag in the lattice frames. The length of the central support sling is dependent on the length of top slings being used.

Typical assembly of the central support sling:
Long wire rope sling down from crane hook, connected to a 2m chain sling terminating in sling hook, c/w shortening clutches / grab hooks for length adjustment (+/- one link should give enough adjustment to set length). The sling hook can then attach to a 6.5t shackle on the T2 frame. Please contact Modulift if in doubt.

Safe use of spreaders

- **All lifting operations must be planned in accordance with the procedures laid down in 'Lifting Operations and Lifting Equipment Regulations 1998' (LOLER).**
- **A risk analysis must be completed.**
- **A method statement should be produced and seen by the personel using the equipment.**
- Adhere to the correct beam configuration when planning lift.
- Only the manufacturer's component parts must be used in beam assembly.
- Ensure components are connected/tightened sufficiently.
- Ensure all personnel are clear from lift path prior to commencing lift.
- Take load up steadily, ensure beam is level – never shock load the lifting rig.
- Use tag lines on load with sufficient length to stand well clear.
- Never leave a suspended load unsupervised.
- If components are lost, contact your supplier for replacements.
- Store beams and equipment safely when not in use.



Assembly Procedure

- Visually check the condition of all the frame components and pins to be used. Do not use damaged items.
- Each Type 1 or Type 2 frame has 4 no. clevis connections at one end, and 4 connection blocks at the other. To connect the Type 1, Type 2 frames and the Type 3 frame together, the connection block of one frame has to slot into the clevis connection of the adjacent section.
- Position the Type 1, Type 2 & Type 3 sections in a line, in the configurations shown earlier in this User Instruction, for the particular desired span. Make sure the orientation of the frames allow for connection blocks to slot into clevis connections of adjacent frame.
- Starting with an end frame, slot the end frame and the adjacent frame together. Go along the whole lattice spreader, slotting all of the frames together.
- Insert a connection pin into every connection (4 pins required to interface between each frame). A hammer may be required to tap in if tight. Slot a linch pin into the hole of every connection pin and snap closed.
- If cross beams are required for a particular lift, slot a cross beam between the pairs of plates that are located on the top of the lattice spreader. Make sure there is a cross beam in the exact position as shown in this User Instruction for the specific span (shown as a red dot on the figures above).
- Each cross beam has two locating holes, insert the same type of connection pins used before, into these holes. Ensure the pin goes through both plates on the frame, and the cross beam fully. A hammer may be required to tap in if tight. Slot a linch pin into the hole of every connection pin and snap closed.
- Next attach all of the rigging: connect the top slings to the Type 2 top lugs using 6.5t shackles, in the positions shown in this User Instruction above at the particular span. If a central support sling is needed, set this up as detailed in this User Instruction. Next connect the bottom slings either to the weld eyes on the undersides of the cross beams if cross beams are being used, or to the weld eyes on the undersides of the frames. Again, make sure the positioning of the bottom slings matches the positions shown in this User Instruction.
- The top slings can then be attached to the crane hook, and the bottom slings attached to the load.
- Assembly to be checked by a competent person prior to lifting. When lifting, check there is no slack in the central support sling if one is needed, set back down and adjust the chain sling length if required.

Should you find your equipment is no longer of use, please dispose of in a responsible manner. Please contact Modulift if you need further guidance