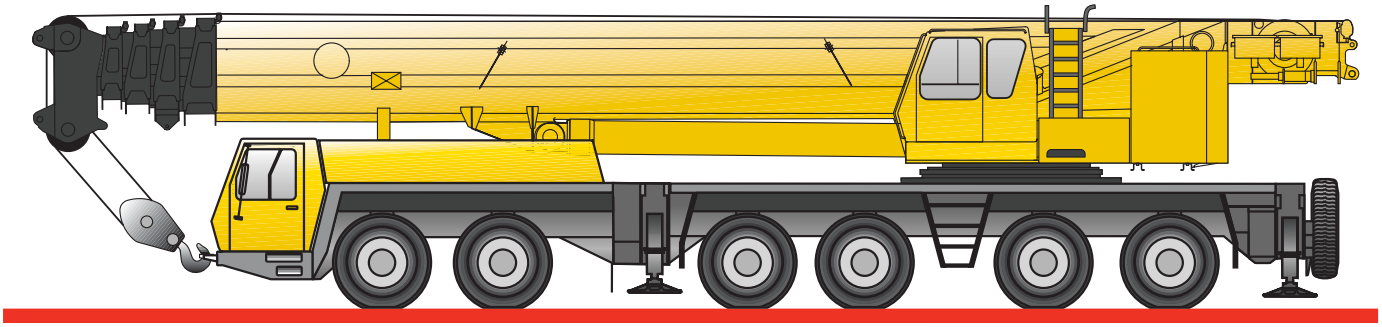
GROVE

GMK 6300

Operating manual for Megalift



Serial number:

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Manitowoc Crane Group

A Manitowoc Company

1.3 Proper use

The truck crane GMK 6300 was constructed in accordance with state of the art technology and the recognized safety regulations. Nevertheless, personal injury to the operator or a third party as well as damage to the crane and other property may occur during use.

The truck crane may only be modified with the consent of the manufacturer.

The GMK 6300 truck crane must be in proper working condition and may only be used for its intended purpose, while taking into account safe operation and any possible hazards.
Malfunctions that may affect the safe operation of the unit are to be corrected immediately.

The GMK 6300 truck crane may only be operated at temperatures of between –25 and +40 °C if it is not equipped with the relevant special equipment.

The GMK 6300 truck crane is to be used exclusivly for vertical lifting of loads whose weight and centre of distribution are known. A hook block must be reeved on the hoist rope and such lifting must be done only in the permitted rigging modes. Any other use of the crane is not considered to represent proper usage.

The manufacturer is not liable for damage resulting from improper or unauthorized use of the GMK 6300 truck crane. The user shall take on full responsibility for any such use.

Proper use also entails

– observing all crane documentation consisting of the operating instructions, the lifting capacity table, the outrigger pressure table and the safety manual

– following the inspection and maintenance requirements specified in the maintenance manual.

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2 Transport dimensions and weights

2.1 Transport dimensions and weights in metric units

This section contains the transport dimensions and weights of the Megalift in metric units.

2.1.1 Megalift

Description	Length x Width x Height (m)	Weight (kg)
Megalift, complete	12.00 x 2.75 x 2.40	5 500

2.2 Transport dimensions and weights in US units

This section contains the transport dimensions and weights of the Megalift in US units.

2.2.1 Megalift

Description	Length x Width x Height (ft)	Weight (lbs)
Megalift, complete	39.4 x 9.0 x 7.9	12 130

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3.3 Additional operating and display elements in the crane cab

This section describes operating and display elements which are additionally installed in the crane cab for the operation of the Megalift.

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3.6 Checklists for rigging work

This section contains the CHECKLIST: Installing the Megalift; ➠ p. 3-18, the CHECKLIST: Removing the Megalift; ➠ p. 3-23 and a description of how to carry these out; ➠ p. 3-27.

The following conditions must be fulfilled for installation/removal of the Megalift:

- The truck crane must be properly supported on outriggers and aligned horizontally.
- The main boom must be completely retracted.
- An auxiliary crane and a working platform must be available.

For installing and removing the Megalift, no counterweight should be fitted.

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3.7 Rigging work

3.7.1 Removing/installing the support for telescopic swing-away lattice extension

The rigging work described in this section is only required if the truck crane is equipped with the additional telescopic swing-away lattice extension.

The telescopic swing-away lattice extension must be removed for operation with Megalift; ➠ *GMK 6300 Swing-away lattice extension operating manual*.

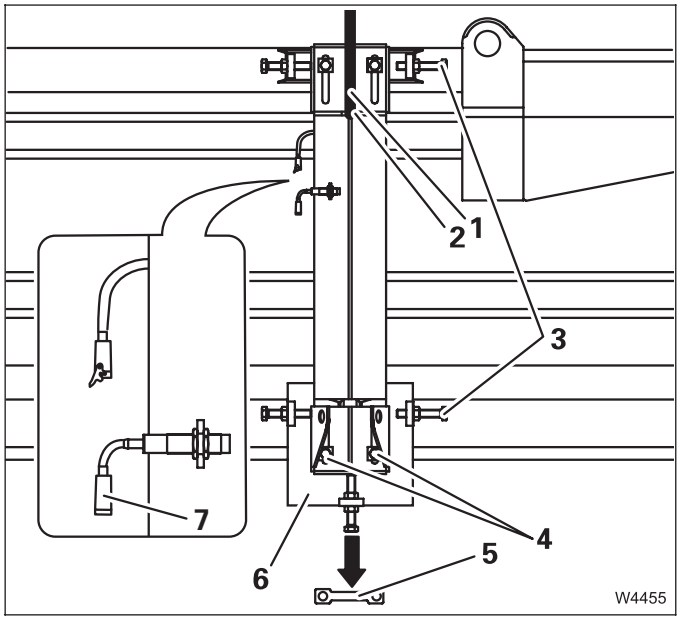
Furthermore, there is a support at the front right of the main boom. This is where the telescopic swing-away lattice extension engages.

– Remove the support before rigging the Megalift.

– Replace this support for operation with the telescopic swing-away lattice extension.

Removing the support

Due to the support's tare weight (approx. 30 kg) you will need an auxilila-ry crane for dismantling.



- Attach the sling gear (**1**) to the bore hole (**2**) and secure the support with an auxiliary crane.
- Remove the counternuts and unscrew the two adjusting screws (**3**) to the extent that they no longer touch the support.
- Disconnect the electrical connection (**7**) of the proximity switch and close the protective caps.

When releasing the lower locking screws (**4**) the threaded plate (**5**) slips down out of the retaining sheet (**6**). With the following steps, make sure the threaded plate does not fall down:

- Release the lower retaining screws (**4**).
- Remove the retaining screws and take them out together with the washers.

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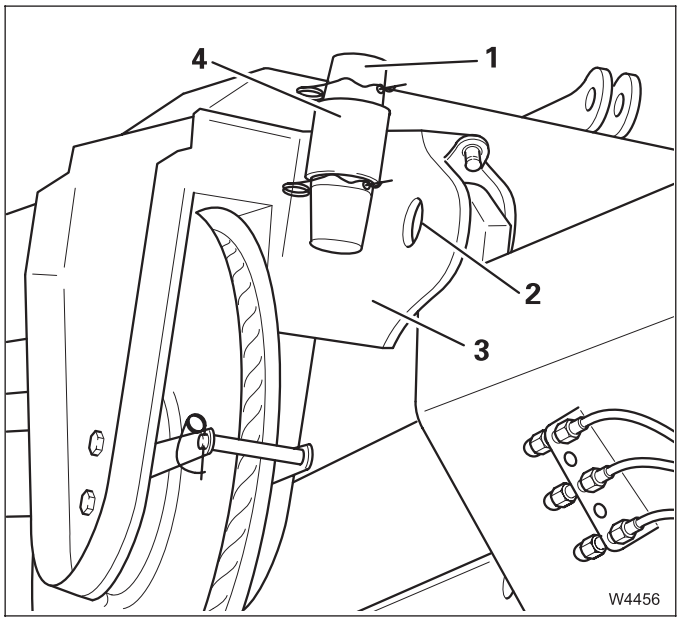
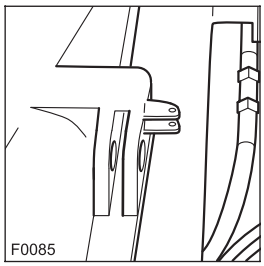


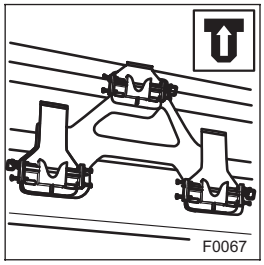
- Remove the retaining pins from the pins (**1**).
- Remove the pins from the locking positions (**2**).
- Insert the pins into the holders (**4**) on the Megalift and secure them with retaining pins.
- Lift the Megalift (**3**) from the main boom with the auxiliary crane.

3.7.8 Lowering the Megalift onto the main boom

Before lowering



- Remove the retaining pins and pull the pins out of the locking points on the main boom.



- Check whether the securing pins for the rope winch have been pulled out of the retainers on the main boom.

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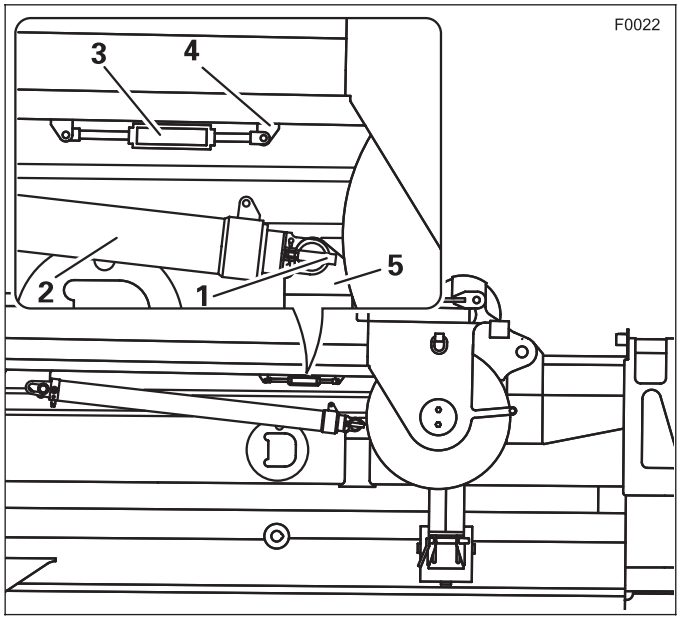
3.7.15 Working position/transport position of the raising cylinder

The Megalift is raised with the help of two hydraulic cylinders (raising cylinders).

Bringing the raising cylinder into working position

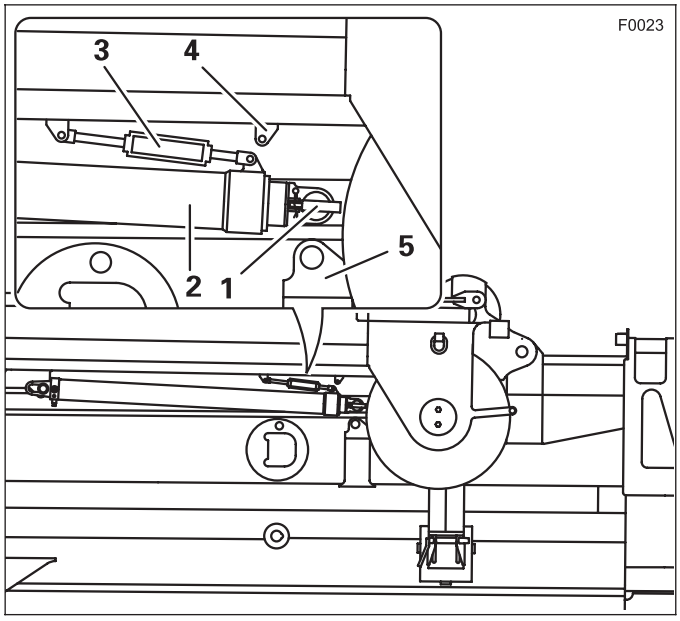
Both cylinders are brought into position with the turnbuckles during installation and then locked left and right onto the main boom.



- Remove the retaining pin.
- Pull the pin (**1**) from the free end of the raising cylinder (**2**).
- Rotate the turnbuckle (**3**) until the raising cylinder is in the locking position (**5**) on the main boom.
- Insert pin (**1**) and secure it with the retaining pin.
- Release the turnbuckle (**3**) from the raising cylinder and attach it to the strap (**4**) on the Megalift.
- Repeat the procedure for the raising cylinder on the other side.

Bringing the raising cylinder into transport position

When removing, the raising cylinders are released from the main boom and secured to the Megalift again.



- Release the turnbuckle (**3**) from the strap (**4**) on the Megalift and attach it to the raising cylinder (**2**).
- Loosen the safety device and remove the pin (**1**) from the locking point (**5**) on the main boom.
- Rotate the turnbuckle (**3**) until the raising cylinder is as high as it can be.
- Insert the pin (**1**) into the free end of the raising cylinder and secure it with the retaining pin.
- Repeat the procedure for the raising cylinder on the other side.

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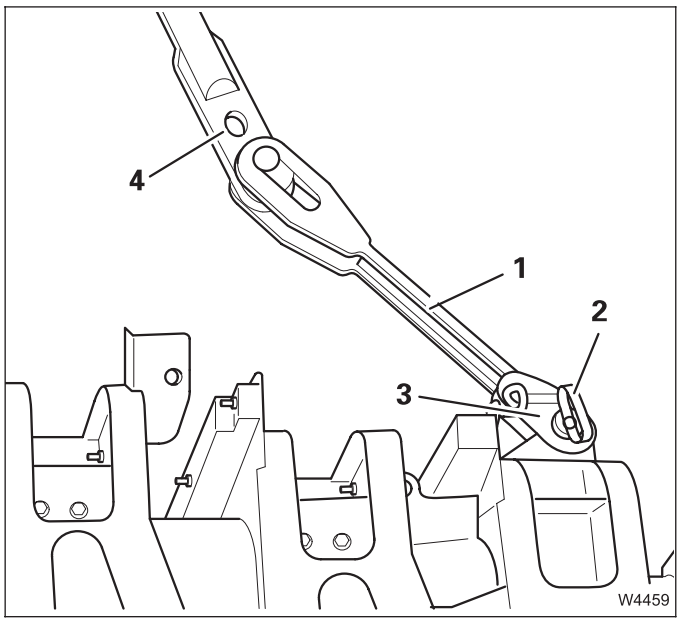
3.7.21 Lock/release lock of bridle pendant links to telescopic section III

Locking

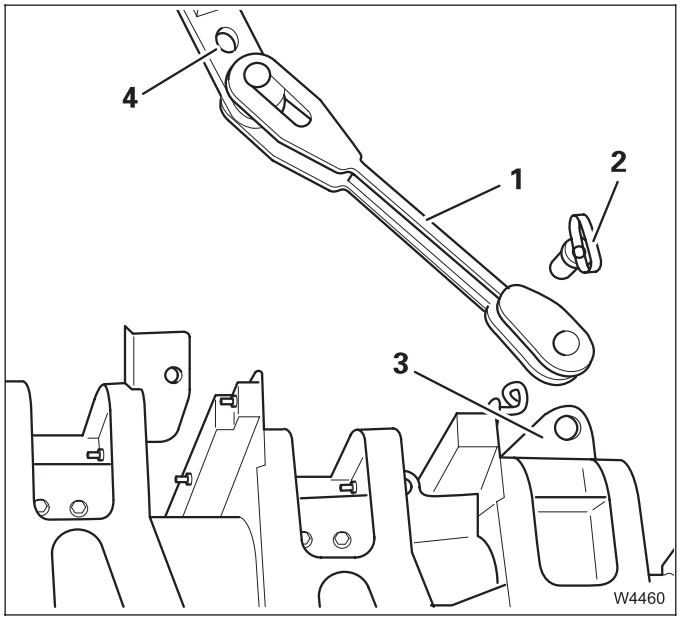
To mount the Megalift, the bridle pendant links are locked to the collar of telescopic section III.



- You will need the pins you removed from the bores (**4**) when you released the joint blocks.
- Guide the bridle straps (**1**) to the head of telescopic section III. To do so you must unwind the rope winch.
- Place the bridle straps so that they align with the the brackets (**3**).
- Lock the bridle straps with the pins (**2**).
- Secure the pins into place using the retaining pins.

Releasing the lock

To disassemble the Megalift, remove the lock between the bridle pendant links and telescopic section III.



- Remove the retaining pins and pull the pins (**2**) out of the bridle straps (**1**) and the brackets (**3**).
- Guide the bridle straps (**1**) to the gantry mast. To do so you must wind up the rope winch.

After having set down the gantry mast, the pins (**2**) are inserted into the the bores (**4**) to lock the joints and secured with retaining pins.

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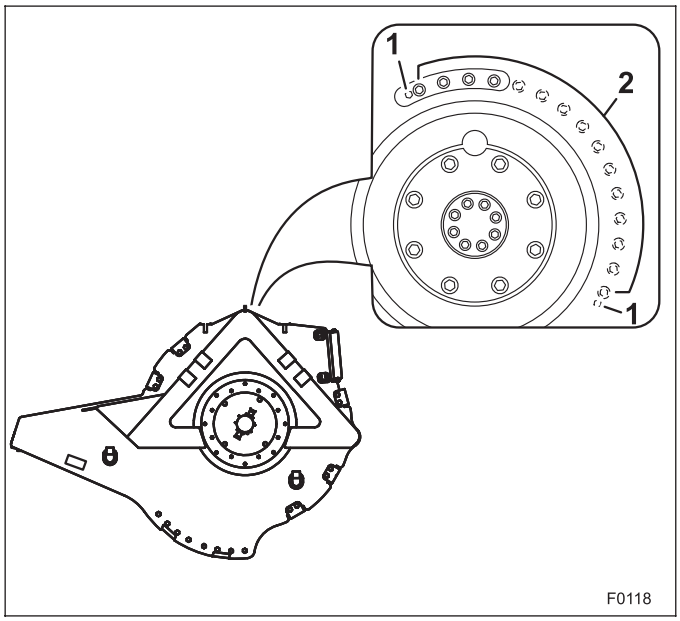

- Remove both counterscrews (**1**).
- Check the tightening torque of the 15 clamping screws (**2**)
  (tightening torque 300 Nm).
- Replace the counterscrews.

Changing the guy rope

The main boom is resting in the boom support. The damaged guy rope is unwound.

Risk of accidents from rotating rope drum!
When the winch is to be turned, remove the torque wrench from the assembly aperture and step back from the winch. You could be injured by flying tools or by the rotating rope drum.

Risk of accidents from unintentional rotation of the rope drum!
Make sure that the crane engine is switched off when you are working at the rope drum. The rotating rope drum can inflict serious crushing injuries!

- Release the guy rope clamp on the back of the rope drum. The drum must be turned to do this.
- Pull the rope out of the clamping channel.

The new rope must be pushed in up to the end of the clamping channel. For this purpose the clamping length is marked.

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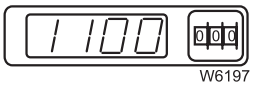
4.1.4 Operation with non-braced Megalift



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For operation with the non-braced Megalift, you must set an SLI code for main boom operation as stated in the *Lifting capacity table*.

Danger of accidents with improperly rigged truck crane
The mobile crane may only be operated with non-braced Megalift when the gantry mast is in the 20° position. In all other positions, the hoist ropes would become damaged, or the load distribution on the truck crane would not be secured.

If the Megalift is installed but not braced during main boom operation, the values for main boom operation given in the lifting capacity table will be reduced and the SLI will correspondingly switch off earlier.

The reduced values are shown on the SLI display *Maximum Load* if you break the electrical connection to the Megalift control only; ➠ *Breaking the electrical connection,* p. 4-4

The relevant formulas and examples for calculating these values during applications engineering can be found in the *Lifting capacity tables*.

Truck crane operation with non-braced Megalift proceeds as described in the chapter *Working with the crane and main boom* in the *GMK 6300 Operating instructions*.

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Axle load tables Boom positions set down on main boom with Megalift:

Counter-weight in t (lbs)	Telescoping (Tel. I/II/III/IV)	Boom angle in °	Boom position[1)]	Axle load[2)] t (x 1000 lbs) front	rear
0 (0)	0 / 0 / 0 / 0	0	front	14.5 (32.0)	12.5 (27.6)
	0 / 0 / 0 / 0	82	rear	7.0 (15.4)	16.5 (36.4)
8 (17 637)	0 / 0 / 0 / 0	0	front	12.0 (26.4)	16.0 (35.3)
	0 / 0 / 0 / 0	82	rear	9.0 (19.8)	17.5 (38.6)
22 (48 501)	1.0 / 0 / 0 / 0	5	front	22.0 (48.5)	14.5 (32.0)
	0 / 0 / 0 / 0	82	rear	12.5 (27.6)	19.5 (43.0)
36 (79 366)	1.0 / 0 / 0 / 0	5	front	17.0 (37.5)	20.5 (45.2)
	0 / 0 / 0 / 0	82	rear	16.0 (35.3)	21.0 (46.3)
50 (110 231)	1.0 / 1.0 / 0 / 0	30	front	21.5 (47.4)	22.0 (48.5)
	0 / 0 / 0 / 0	82	rear	20.0 (44.1)	23.0 (50.7)
80 (176 370)	not permissible	–	front	–	–
	0 / 0 / 0 / 0	75	rear	27.0 (59.5)	26.5 (58.4)
100[3)] (220 462)	not permissible	–	front	–	–
	not permissible	–	rear	–	–

[1)] Boom position to the rear = 0° position, boom over rear edge of truck crane

Boom position, front = 180° position, boom over driver's cab

[2)] Axle load front: on the 1st and 2nd axle lines
rear: on the 3rd, 4th and 5th axle lines

The axle loads specified refer to a driving mode with the basic unit including the 35 t (77,160 lbs) hook block.

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5 Operation with main boom and Megalift

There are two basic operating modes for operation with heavy load lattice extension and Megalift.

Firstly, there is *untensioned operation*, where the Megalift is rigged on the main boom, but is neither completely erected nor tensioned for operation; ➠ *Untensioned operation*, p. 4-1.

Secondly, there is *tensioned operation*, in other words the actual operation with rigged and tensioned Megalift; ➠*Tensioned operation*, p. 4-7.

5.1 Untensioned operation

For operation with heavy load lattice extension and untensioned Megalift, the gantry mast must be raised to 20° with the raising cylinders so that the hoist ropes used, which are guided under the gantry mast, do not become damaged.

5.1.1 Prerequisites

- Check whether all the requirements for untensioned operation with the main boom have been met; ➠*Prerequisites*, p. 4-1.
- Raise the gantry mast to 20°; ➠*Raising the gantry mast to 20°*, p. 4-2.
- Lock the winch and break the electrical connection for the Megalift control; ➠*Locking the winch and breaking the electrical connection*,p. 4-3

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