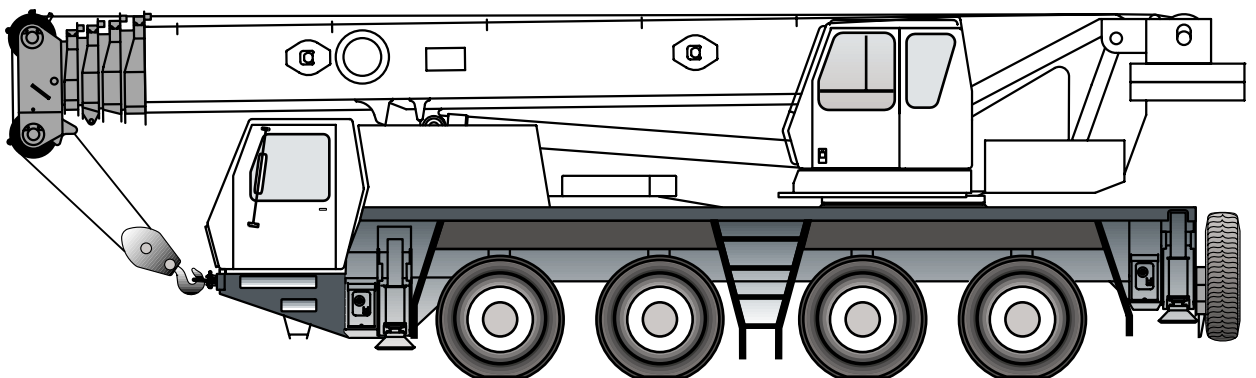


**GROVE**

**GMK4075**



## Operating instructions lattice extension

Vehicle serial number:

2 084 629 en  
16.02.2001

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## Organizational measures

The operating instructions and the lifting capacity table should be kept in the truck crane for immediate access at all times, and must not be removed from the truck crane. You must have read and understood the operation and safety instructions in these operating instructions, and comply with them when working.

In addition to the operating instructions and the lifting capacity table, observe all general, statutory and otherwise applicable regulations concerning accident prevention and environmental protection. You must have read and understood these and work accordingly.

This could include:

- the use of hazardous materials,
- wearing personal protective equipment,
- traffic regulations or
- all applicable regulations concerning the operation of a crane.

Ensure that those appointed to work on the truck crane are given the information required to carry out the work before starting operations. Give your employees (e.g. banksmen, slingers, rigging personnel) appropriate instructions.

Ensure that the maintenance personnel possess the necessary know-how to safely operate the crane. Ensure that the maintenance personnel have access to the operating instructions.

Only properly trained or instructed personnel may carry out work on the truck crane.

Responsibilities related to crane operation, rigging, maintenance and repair work must be clearly defined.

Ensure that only the appointed employees operate the truck crane.

Do not leave long hair down or wear loose clothing or jewellery (including rings) when working with the crane. These could get caught or pulled into the unit and result in injury.

Use your personal protective equipment whenever necessary or prescribed.

Observe all safety and warning signs on the truck crane.

Ensure that all safety and warning signs on the truck crane remain legible.



## In US units

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

### Two-stage swing-away lattice extension and boom extension

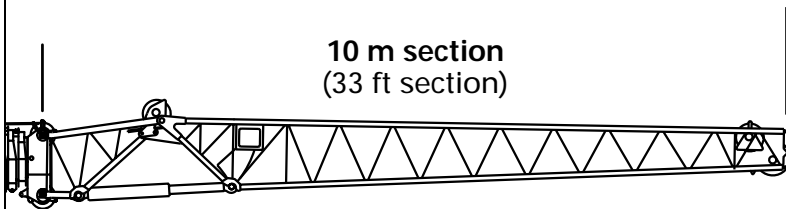
Description	Length x Width x Height (ft)	Weight (lbs)
Two-stage swing-away lattice extension (complete, folded together)	35.0 x 3.0 x 4.0	2980
10 m section	35.0 x 3.0 x 4.0	2340
7 m section	23.0 x 1.7 x 2.0	670
5 m section with deflection sheave	17.2 x 3.0 x 4.0	1020
5 m section without deflection sheave	17.2 x 3.0 x 4.0	780

### Auxiliary single-sheave boom top

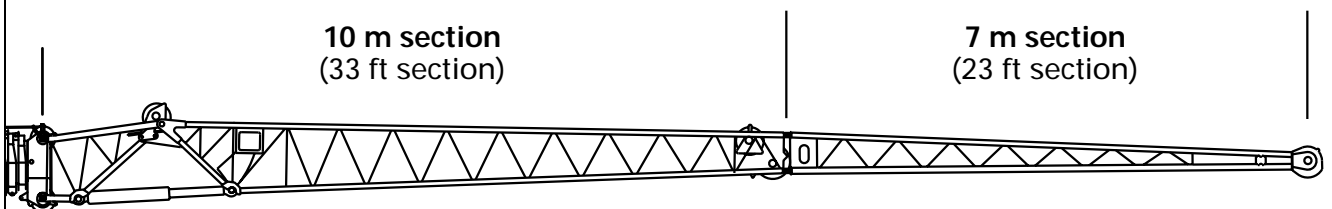
Description	Length x Width x Height (ft)	Weight (lbs)
Auxiliary single-sheave boom top complete with pins	3.3 x 1.4 x 3.3	140

## Assembly of the lattice extensions

**10 m swing-away lattice extension**  
(33 ft swing-away lattice extension)



**17 m swing-away lattice extension**  
(56 ft swing-away lattice extension)



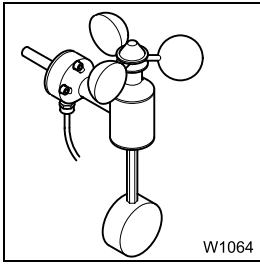
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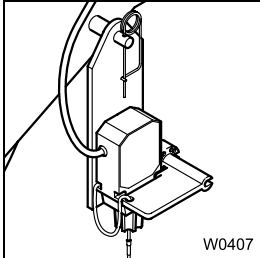
The lengths of 10 m and 17 m respectively equal the distance between the centre of the locking pin (on the main boom head) and the front edge of the head sheave.

The designations 10 m section and 7 m section have been adapted to these lengths. The total length of the individual sections is greater or smaller;

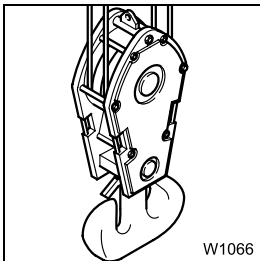
▣► *Transport dimensions and weights*, p. 2 - 1.



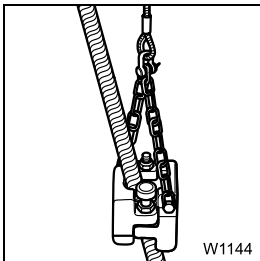
18. Move the anemometer from the head of the main boom to the head of the 10 m section; ■■■► *Anemometer on the lattice extension*, p. 3 - 68.



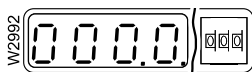
19. Move the lifting limit switch from the head of the main boom to the head of the 11 m section; ■■■► *Lifting limit switch on the lattice extension*, p. 3 - 66.



20. Reeve the hoist cable on the hook block; ■■■► *Possible reeving methods on the lattice extension*, p. 3 - 65.

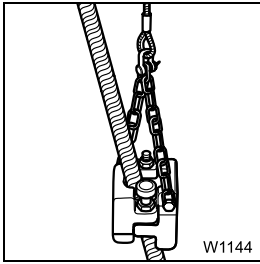


21. Attach the lifting limit switch weight and guide hoist rope through the weight; ■■■► *Operating instructions GMK 4075, Part 2 Superstructure – Rigging work*.

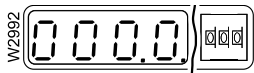


22. SLI code according to the *Enter the lifting capacity table* for the actual rigging mode of the truck crane with the 10 m swing-away lattice extension, *setting the rigging mode* ■■■► *Operating instructions GMK 4075, Part 2 Superstructure – Crane operation*.

Further working steps for raising the boom; ■■■► p. 3 - 71.  
Telescoping with the rigged lattice extension; ■■■► p. 3 - 73.



25. Attach the lifting limit switch weight and guide hoist rope through the weight; *Operating instructions GMK 4075, Part 2 Superstructure – Rigging work.*



26. SLI code according to the *enter the lifting capacity table* for the actual rigging mode of the truck crane with the 17 m swing-away lattice extension, *setting the rigging mode* *Operating instructions GMK 4075, Part 2 Superstructure – Crane operation.*



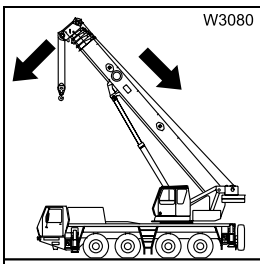
Further working steps for raising the boom; p. 3 - 71.  
Telescoping with the rigged lattice extension; p. 3 - 73.



## CHECK LIST: Unrigging the 17 m two-stage swing-away lattice extension



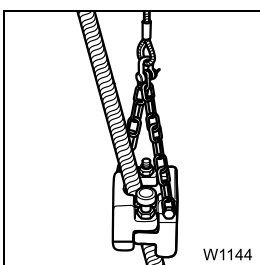
This checklist is not equivalent to complete operating instructions. There are accompanying instructions, which are indicated by cross-references. **Observe the warning and safety information given there.**



1. Prepare the truck crane for unrigging; *Preparing the truck crane for rigging*, p. 3 - 33.
2. Retract the main boom completely and lower it into the horizontal position.



3. Enter SLI code according to *lifting capacity table* for the actual rigging mode of the truck crane with the 17 m swing-away lattice extension, *setting the rigging mode* *Operating instructions GMK 4075, Part 2 Superstructure – Crane operation.*



4. Remove the lifting limit switch weight and move lifting limit switch from the head of the 7 m section to the head of the main boom; *Lifting limit switch on the lattice extension*, p. 3 - 66.



### Transport condition with lattice extension folded at the side

The transport condition with the lattice extension folded at the side is created when all of the following connections are established.

- Check the connections and establish them if necessary.

#### If 7 m section and 10 m section are folded at the side:

- The 10 m section is locked at the slewing axle (1) in front on the main boom and the slewing axle is secured with a retaining pin (2);  
    ▣▣▣▣ ➔ *Establishing a connection*, p. 3 - 45,  
    ▣▣▣▣ ➔ *Securing the connection*, p. 3 - 43.
- The pins (4) are inserted on the pivot point between the 7 m section and the 10 m section; ▣▣▣▣ ➔ *Connection on the pivot point*, p. 3 - 54.
- The connection (7) in the middle area is in the position *7 m section / 10 m section*; ▣▣▣▣ ➔ *7 m section / 10 m section joint*, p. 3 - 45.
- The connection (5) between 7 m section and main boom in the rear area is established ; ▣▣▣▣ ➔ *Connection between 7 m section and main boom*, p. 3 - 47.

#### If the 10 m section only is folded at the side:

- The 10 m section is locked at the slewing axle (1) in front on the main boom and the slewing axle is secured with a retaining pin (2);  
    ▣▣▣▣ ➔ *Establishing a connection*, p. 3 - 45,  
    ▣▣▣▣ ➔ *Securing the connection*, p. 3 - 43.
- The connection between the 10 m section and the main boom in the rear area is established (6); ▣▣▣▣ ➔ *Connection between 10 m section and main boom*, p. 3 - 48.

#### If the 7 m section only is folded at the side:

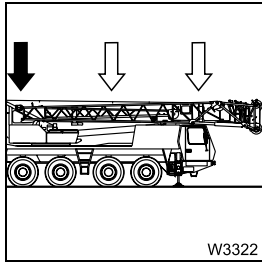
- The connection in the middle area is in the position *7 m section / main boom* (3); ▣▣▣▣ ➔ *7 m section / main boom joint*, p. 3 - 46.
- The connection between 7 m section and the main boom in the rear area is established; ▣▣▣▣ ➔ *Connection between 7 m section and main boom*, p. 3 - 47.

### Transport condition with removed lattice extension

The transport condition for the removed lattice extension is established when all of the following connections have been made.

- Check the connections and establish them if necessary.
- The connections on the pivot point between the 7 m section and the 10 m section have been established (4); ▣▣▣▣ ➔ *Connection on the pivot point*, p. 3 - 54.
- The connection in the middle area is in the position *7 m section / 10 m section* (7); ▣▣▣▣ ➔ *7 m section / 10 m section joint*, p. 3 - 45.

## Connections in the rear area



## Connection between 7 m section and main boom

The connection must be made:

- when unrigging of the 17 m two-stage swing-away lattice extension,
- for operation with the 10 m swing-away lattice extension.

The connection must be removed:

- when rigging the 17 m two-stage swing-away lattice extension,
- for unrigging the 17 m two-stage swing-away lattice extension.

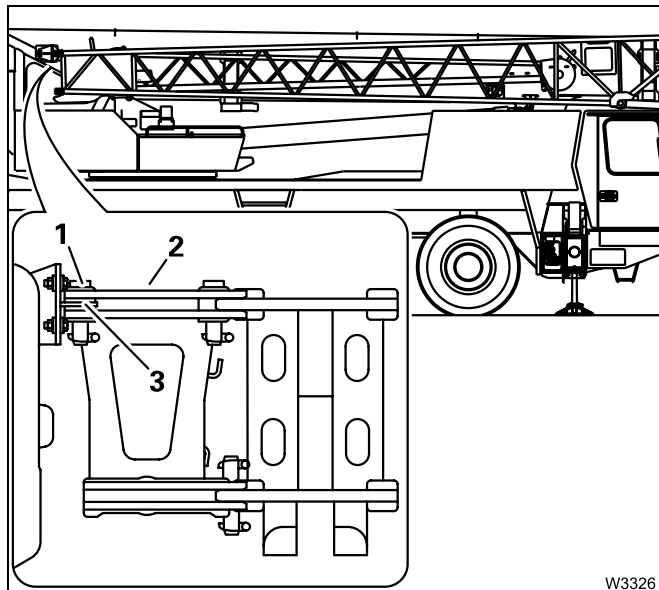
## Removing the connection



### Risk of accidents from falling 7 m section.

Make sure the connection is established at the pivot point between the 7 m section and the 10 m section (p. 3 - 53), before you remove the connection between the 7 m section and the main boom.

This will prevent the 7 m section from falling down when releasing the connection.



- Release the retaining pin and remove the pin (1) from the bearing point (3).
- Insert the pin in the retaining sheet (2) and secure it with a retaining pin.

## Establishing a connection

- Swivel the lattice extension into the main boom until the bearing point (3) is aligned.
- Release the retaining pin and take one pin out of the retaining sheet (2).
- Insert the pin into the bearing points (3) and secure it with a retaining pin.



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- Carefully lower the lattice extension from the control unit on the foot of the 10 m section until it starts to swing out.

If a helper is holding the guide rope, he can now swing the lattice extension in front of the main boom head.

If you are alone and when securing you fixed the guide rope to the crane, the lattice extension turns only so far until the guide rope is taught. You can now turn the lattice extension with the guide rope in front of the main boom head.

Proceed in the **opposite order** for **unrigging**.

### Swing the 7 m section in front of the 10 m section

#### Prerequisites:

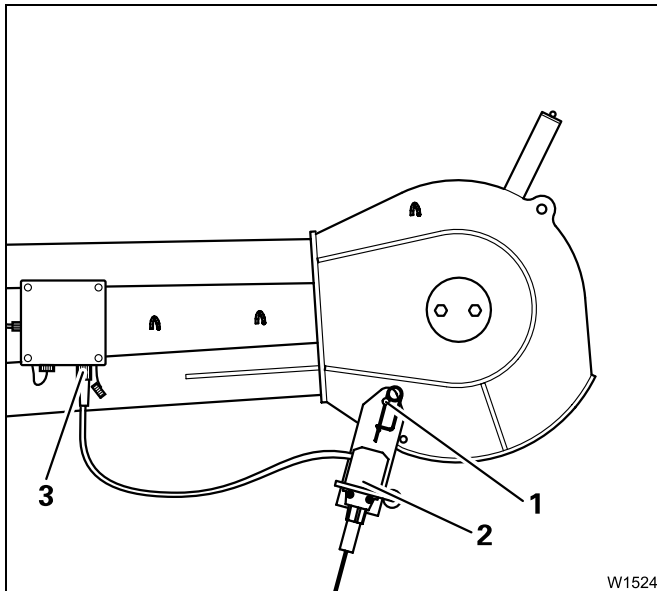
- The 10 m section is locked in front of the main boom head; ■■■► *Establishing connections*, p. 3 - 50.
- The lattice extension is secured on the head of the 7 m section with a guide rope;
- Move the connection in the on 10 m section middle area; ■■■► *Joint at the 10 m section*, p. 3 - 46.
- Turn the 7 m section using the guide rope in front of the the 10 m section.

Proceed in the **opposite order** for **unrigging**.

### On the 17 m two-stage swing-away lattice extension



For operation with the 17 m two-stage swing-away lattice extension the connection for the lifting limit switch on the 10 m section must be overridden with a short-circuit plug.



- Attach the lifting limit switch (2) on the shackle (1) and secure it with a retaining pin.
- Connect the lifting limit switch on the socket (3).
- When **unrigging** close the socket (3) with the protective cap.

## Turning loads with the lattice extension

When turning loads it is necessary to employ a two-hook operation. The only type of two-hook operation technically possible and protected by the SLI is described in this chapter using the turning of loads as an example.



### **Risk of accidents due to overloading.**

Lifting a load with two hooks is permissible only if the following instructions and illustrations are observed.

If these instructions are not observed, accidents could occur due to individual parts of the truck crane being overloaded. The SLI then no longer provides protection.

Two-hook operation with the boom extension is not permitted!



### **Risk of accidents due to overloading.**

The load must always be lifted completely with the weakest part first (lattice extension).



You can find the position and function of the required operating instruments in the supplied *Operating instructions* of the GMK 4075.

## Prerequisites

The following description requires that:

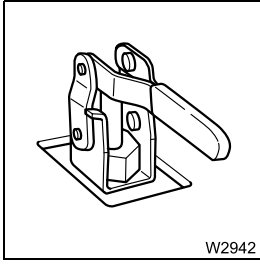
- the main hoist cable is reeved on the main boom
- the auxiliary hoist rope is reeved on the lattice extension and
- the lifting limit switches for both hoists are connected.



### **Risk of accidents due to overloading.**

The reeving on the main boom must be equal to or greater than that on the lattice extension!

If this condition is not fulfilled, the main hoist cable and main hoisting gear will become overloaded.



- Lock the superstructure, the lever must point to the left.



During the following work, you must temporarily switch on and switch off the suspension locking system, which is possible only in the driver's cab. It is therefore recommended to carry out the following work from the carrier.

### Retracting the outrigger



- Retract the outrigger cylinders until the wheels are just above the ground.

#### **Risk of overturning!**

Make sure that the truck crane does not overturn when the outriggers are being retracted.

Retract all the outrigger cylinders as uniformly as possible.

### Switching over the suspension locking system



- Switch the suspension locking system off. To do this push up the *suspension locking system* rocker switch in driver's cab. The *suspension locking system* indicator lamp must extinguish.
- Retract the outrigger cylinders until the truck crane is approximately at on-the-road level.



- Switch the suspension locking system back on again. To do this push down the *suspension locking system* rocker switch. The *suspension locking system* indicator lamp lights up when the suspension system is locked.
- Continue to retract the outrigger cylinders.



#### **Risk of overturning!**

To reduce the risk of the crane overturning do not raise the outrigger pads more than 5 to 10 cm off the ground. Leave the outrigger beams extended.



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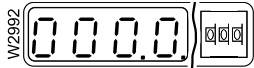
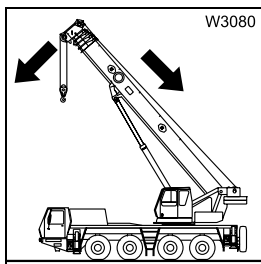
## CHECK LIST: Unrigging the 22 m/27 m boom extension




This checklist is not equivalent to complete operating instructions. There are accompanying instructions, which are indicated by cross-references. **Observe the warning and safety instructions given there!**

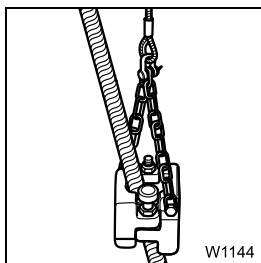
### Prerequisites:


- The truck crane is on outriggers or the main boom is placed on the boom support.
  - An auxiliary crane is available.
1. Prepare the truck crane for unrigging;  *Preparing the truck crane for rigging*, p. 3 - 33.

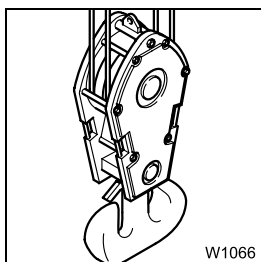



2. Fully retract and set down the main boom.

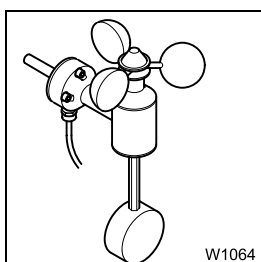
3. Enter SLI code according to the *Lifting capacity table* for the actual rigging mode of the truck crane with the rigged boom extension. Set rigging mode  *Operating instructions GMK 4075 part 2, Superstructure - Crane operation*.



4. Remove the lifting limit switch weight and move lifting limit switch from the head of the 7 m section to the head of the main boom;  *Lifting limit switch on the lattice extension*, p. 3 - 66.



5. Unreeve the hoist cable from the hook block and remove it from the lattice extension;  *Possible reeving methods on the lattice extension*, p. 3 - 65.




6. Remove anemometer;  *Anemometer on the lattice extension*, p. 3 - 68.






**At the 22 m boom extension**

**Establishing a connection**


- Connect the cable of the 10 m section to the socket of the second 5 m section at the front.
- Connect the cable of the 5 m section to the socket at the main boom head;  p. 3 - 58.

**Disconnecting**




- Detach the electrical connection between 10 m and 5 m section.
- Detach the electrical connection between 5 m section and main boom head;  p. 3 - 58.
- Prepare the electrical connections at the 5 m section for transport;  p. 4 - 18.
- Prepare the electrical connections at the 10 m section for transport;  p. 3 - 58.

**At the 27 m boom extension**

**Establishing a connection**

- Connect the cable of the 10 m section to the socket of the second 5 m section at the front.
- Connect the cable of the second 5 m section to the socket of the first 5 m section at the front.
- Connect the cable of the first 5 m section to the socket at the main boom head;  p. 3 - 58.

**Disconnecting**

- Detach the electrical connection between the 10 m and front 5 m section.
- Detach the electrical connection between the two 5 m sections.
- Detach the electrical connection between the rear 5 m section and the main boom head;  p. 3 - 58.
- Prepare the electrical connections at the 5 m section for transport;  p. 4 - 18.
- Prepare the electrical connections at the 10 m section for transport;  p. 3 - 58.

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## Turning loads with the auxiliary single-sheave boom top

When turning loads it is necessary to employ a two-hook operation. The only type of two-hook operation technically possible and protected by the SLI is described in this chapter using the turning of loads as an example.



### **Risk of accidents due to overloading.**

Lifting a load with two hooks is permissible only if the following instructions and illustrations are observed.

If these instructions are not observed, accidents could occur due to individual parts of the truck crane being overloaded. The SLI then no longer provides protection.


Two-hook operation with the boom extension (additional equipment) is not permitted!



### **Risk of accidents due to overloading.**

The load must always be lifted with the weakest part first (auxiliary single-sheave boom top).



For information on the position and function of the operating instruments required;  *Operating instructions GMK 4075, Part 2 Description of the truck crane (crane section).*

### **Prerequisites**

The following description requires that:

- the main hoist cable is reeved on the main boom and
- the auxiliary hoist cable on the auxiliary single-sheave boom top is reeved.



### **Risk of accidents due to overloading.**

The reeving on the main boom must be equal to or greater than that on the auxiliary single-sheave boom top.

If this condition is not fulfilled, the main hoist cable and main hoisting gear will become overloaded.



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