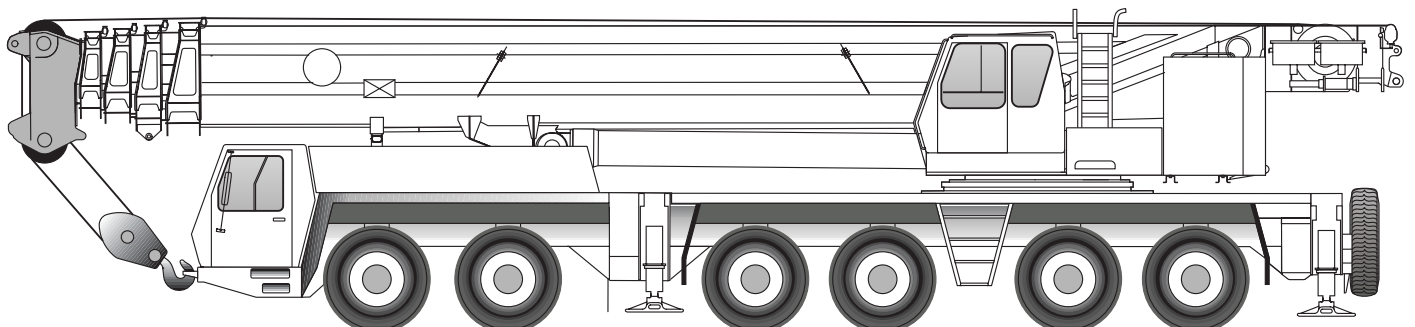


GROVE

GMK6300



Operating instructions lattice extension

Serial number:

2 084 758 en
12.03.2004
(16.04.2003)

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The following chapters are contained in these operating instructions:

1 Important information

2 Dimensions, weights and assignment of the parts to luffing jibs

3 Telescopic swing-away lattice extension

4 Auxiliary single-sheave boom top

5 Boom extension

6 Luffing jib

7 Heavy load lattice extension

8 Index

Note the operational organization on the site. Report your arrival to site management. Ask for the personnel authorised to issue instructions.

Familiarise yourself with the location and operation of the fire extinguishers on every site.

Note the fire alarm and fire fighting facilities on the site.

Should the operating behaviour of the truck crane change in such a manner that the safety conditions are affected, e.g. if you doubt the truck crane is operating safely, stop the machine immediately and inform the appropriate responsible persons.

Do not make any changes to the programmable control systems (e.g. the SLI).

Do not modify or mount attachments to the truck crane without the consent of the manufacturer, if such changes could affect the safety of the unit. This also applies to

- installing safety devices,
- adjusting safety devices and valves.

Welding work on load-bearing parts may only be conducted by properly qualified personnel following authorisation by the manufacturer. To avoid any damage, especially to electronic parts, there are certain steps you must take before doing any welding work. So always consult GROVE Product Support before doing any welding work.

Ensure that both the prescribed periods and the periods specified in the operating and maintenance instructions for regular testing, inspection and maintenance work are maintained.

Replace the hydraulic hose lines in the prescribed intervals or have them replaced, even if no safety defects are noticeable.

Replacement parts must fulfil the technical requirements prescribed by the manufacturer. Genuine spare parts always meet these requirements.

It is imperative that appropriate service equipment be used when carrying out repair work.

2

Dimensions, weights and assignment of the parts to luffing jibs

2.1

Dimensions and weights in metric units

This section contains information on the transportation measurements and weights of lattice extensions in metric units.

2.1.1

Telescopic swing-away lattice extension

Description	Length x width x height (m)	Weight (kg)
Telescopic swing-away lattice extension (complete, retracted)	11.60 x 1.00 x 1.50	2 100
Adapter	1.40 x 1.00 x 0.45	220

2.1.2

Auxiliary single-sheave boom top

Description	Length x width x height (m)	Weight (kg)
Auxiliary single-sheave boom top, complete	0.70 x 1.20 x 0.60	300

2.1.3

Boom extension

Description	Length x width x height (m)	Weight (kg)
Head	3.18 x 1.47 x 2.01	850
Foot section	12.20 x 1.47 x 2.35	3 400
Intermediate section, each	8.12 x 1.47 x 1.57	850
Angle piece	3.62 x 1.47 x 2.18	950

3.2**Additional operating and display elements in the driver's cab**

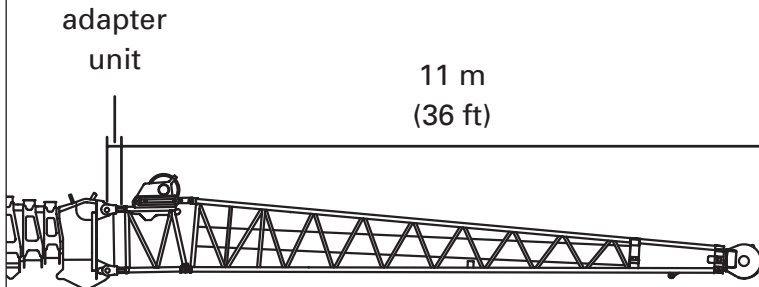
If the GMK 6300 is fitted with a telescopic swing-away lattice extension, additional operating and display elements will be built into the driver's cab and crane cab, in addition to the operating and display elements described in the *GMK 6300 operating instructions*.

In this chapter, all additional operating and display elements which are re-fitted when a telescopic swing-away lattice extension is installed.

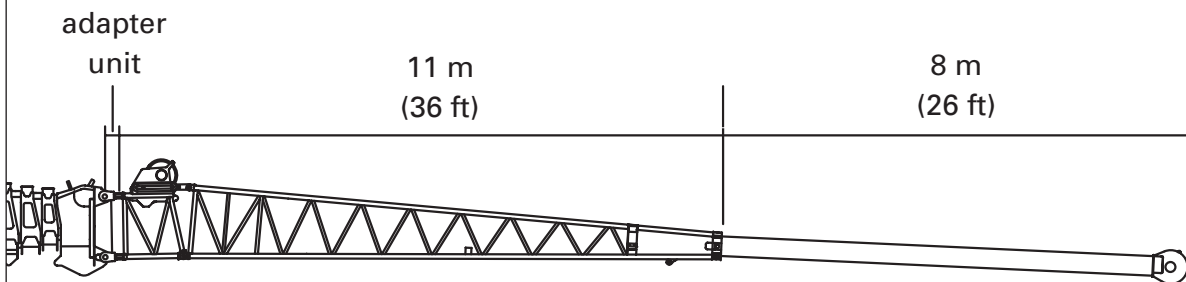
Furthermore, this chapter describes the operating elements located directly on the telescopic swing-away lattice extension.

3.6 Assembly of lattice extensions

11 m telescopic swing-away lattice extension (fully retracted) (36 ft telescopic swing-away lattice extension)



19 m telescopic swing-away lattice extension (extended) (62 ft telescopic swing-away lattice extension)

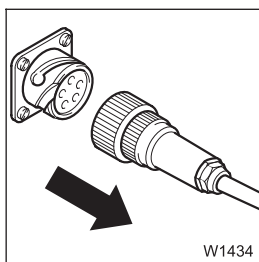


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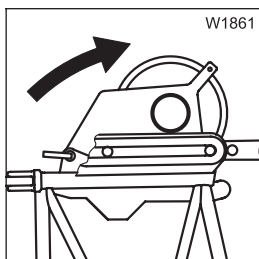


The adapter unit is not considered with the length data of the telescopic swing-away lattice extension.

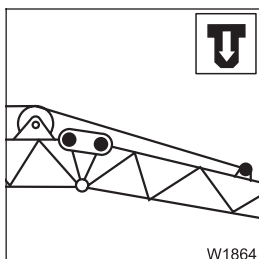
The information about length has been adapted to the lifting capacity tables; the overall lengths of the individual parts are longer.



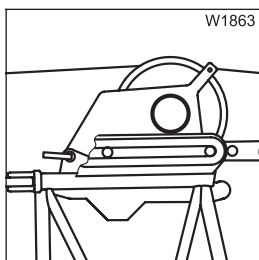
- 18.** Disconnect electrical connection between lattice extension and main boom; *Establishing/disconnecting electrical connection for rigging work, p. 3-48.*



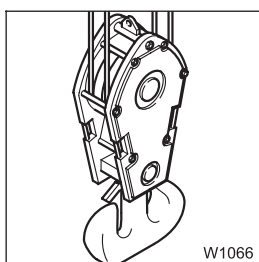
- 19.** Fold out deflection sheave in foot section; *Folding deflection sheave out/in, p. 3-54.*



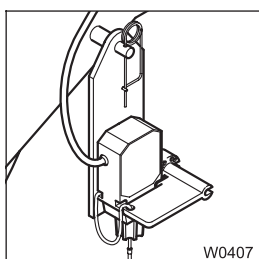
- 20.** Sling lattice extension on hoist rope and set required angle; *Setting angle on lattice extension, p. 3-50.*



- 21.** Guide the hoist rope over the deflection sheave and the head sheave; *Placing and reeving hoist rope, p. 3-55.*

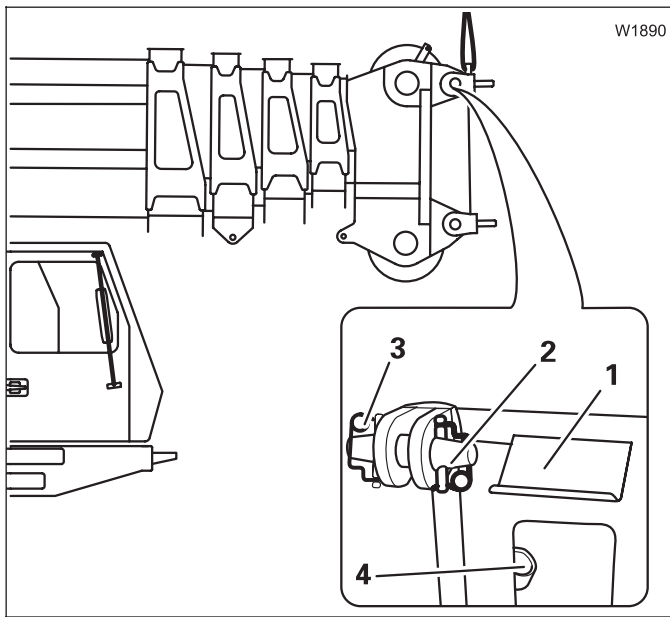


- 22.** Reeve the hoist rope on the hook block; *Placing and reeving hoist rope, p. 3-55.*



- 23.** Move lifting limit switch from the head of the main boom to the head section of the lattice extension and then connect; *Lifting limit switch on lattice extension, p. 3-57.*



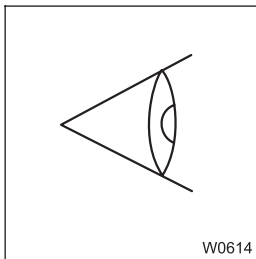


Removing adapter unit

- Sling the adapter unit onto an auxiliary crane; see *Slings points*, p. 3-15.
- Remove the safety needles (3) on each retaining pin (2) on the outside.
- Strike the retaining pin inwards through the bearing points.
The pins fall into the pin catch boards (1).
- Insert all retaining pins in the holdings (4) on the adapter unit and secure them each with two retaining needles.

3.9.3

Checking driving / working with the main boom rigging modes



Depending on whether the truck crane needs to be moved

- with a lattice extension folded at the side (axle load greater than 12 t)
- or you are working with the main boom,
certain rigging modes must be fulfilled.



Be careful not to damage the lattice extension and the main boom!

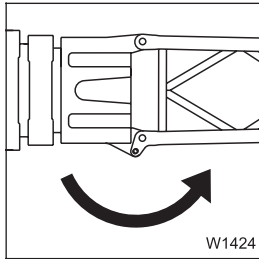
Always create the corresponding rigging mode for driving or working with the main boom before you move the truck crane with the lattice extension folded at the side or work with the main boom.
Only then is the lattice extension secured against slipping and the given vehicle width is observed.

You must check transport condition:

- After unrigging the lattice extension before you move the truck crane with the lattice extension folded at the side.
- After unrigging the lattice extension before you operate the truck crane whilst working with the main boom with the lattice extension folded at the side.

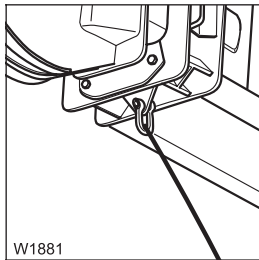
3.9.6

Swinging the lattice extension when rigging



When rigging you must swing the lattice extension from the run-up rail in front of the main boom head.

When unrigging you must swing the lattice extension up to the run-up rail. Pulling up onto the run-up rail is done via the tilt cylinder.



- Use a shackle to fix a guide rope to the connection eye on the lattice extension towards the front.



Risk of accidents from swinging lattice extension!

Always secure the lattice extension with a guide rope and make sure there are no people or objects in the slewing range of the lattice extension.

Requirements for swinging

- The connection between the foot section and the adapter unit is disconnected; *Pin connections for working with the lattice extension*, p. 3-44.
- The tilt cylinder is released on the lattice extension; *Connections in the middle area*, p. 3-38.
- A guide rope is attached to the head section.

When rigging

- Pull the lattice extension on the guide rope from the run-up rail. Here you must overcome the spring force with which the spring pins are pushed into the recesses of the run-up rail; *Pressing the lattice extension from the run-up rail*, p. 3-39.
- Swing the lattice extension in front of the main boom head.

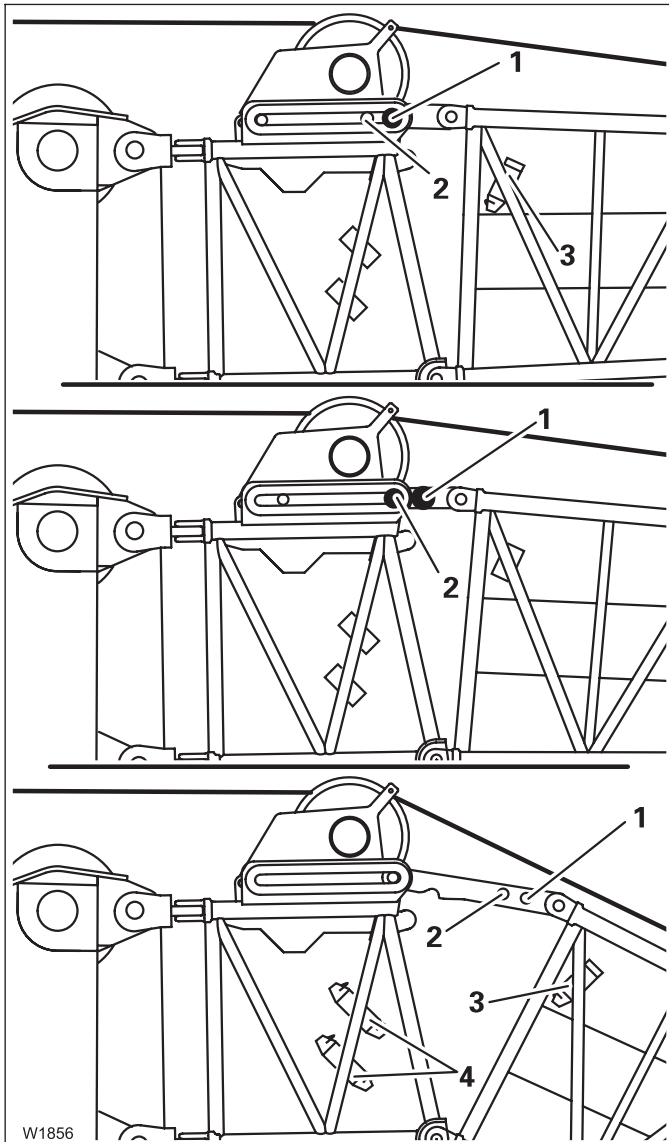
When unrigging

- Swing the lattice extension only up to the run-up rail. Pulling up onto the run-up rail is done via the tilt cylinder; *Pulling lattice extension onto the run-up rail*, p. 3-39.



Risk of accidents from lattice extension folding down!

Always secure the lattice extension with the hoist rope before you knock out pins for the angle. In this way you prevent the lattice extension suddenly folding down unchecked and injuring yourself or other people.



0° angle

On both sides the securing pins are inserted in the bores (1) and the locking pins in the holders (3).

All pins are secured with retaining needles.

The bore (2) remains free.

5° angle

On both sides the securing pins are inserted in the bores (2).

As a fall-back guard both locking pins are inserted in the bores (1).

All pins are secured with retaining needles.

30° angle

Locking pins are inserted on both sides in the holders (3) and secured with retaining pins.

The bores (1) and (2) remain free.

- Insert the securing pin into the holdings (4) and secure them with retaining pins.



Risk of accidents from non-secured securing pin!

Always secure the securing pins in the holders (4) with retaining pins.

During the raising of the main boom, non-secured securing pins slip out of the holders, fall down, and can injure people.

3.10.2

Telescoping with rigged lattice extension



The main boom may become overloaded!

With a rigged lattice extension the main boom must not be telescoped in fast speed and you must not slew the superstructure at the same time. This prevents the main boom becoming subject to additional side forces and increased vibration and becoming overloaded.

The telescoping will only be electrically released when:



– the lattice extension is engaged on the run-up rail in the Main boom operation position (*Lattice extension in driving mode* indicator lamp is not lit).



– **and** when the connecting cable plug on the right side of the main boom is plugged (*Main boom telescoping blocked* warning lamp is not lit).

Telescoping with a rigged lattice extension is released by the SLI only if the main boom is raised to an angle of approx. 75° - 78° (the exact angle depends on the length of the lattice extension (☞ *Rigging programs in the lifting capacity table*)).

If the main boom angle is too small for telescoping with the rigged lattice extension angle, the SLI shows the corresponding error message.

- Put down the load.
- Raise the main boom to an angle necessary according to the rigging program (☞ *Rigging programs in the lifting capacity table*).
- Telescope the main boom to the required length and observe the hook block when doing so; lower and raise it using the hoist.

Do not actuate the slewing gear when telescoping.



Telescoping with a load is released by the SLI only for loads which are below the values of the rigging programs.

11 m telescopic swing-away lattice extension

The following table is for a rigged 11 m telescopic swing-away lattice extension. There is an extra table for the 19 m telescopic lattice extension in this section.



All of the axle loads in the following table refer to a driving mode with the basic unit and a **32 t hook block** (weight 620 Kg) reeved on the lattice extension; larger hook blocks must be unreeved.

Counter-weight in t (lbs)	Telescoping Tele. I/II/III/IV	Angle of the main boom in	Lattice extension angle in °	Main boom position ¹⁾	Axle load ²⁾ in t		Axle load ²⁾ x 1000 lbs	
					front	rear	front	rear
8,0 (17 600)	0 / 0 / 0 / 0	10	5	front	13,5	14,5	29.8	32.0
	0 / 0 / 0 / 0	82	5	rear	7,5	17,5	16.5	38.6
22,0 (48 500)	0.5 / 0 / 0 / 0	10	5	front	17,0	16,5	37.4	36.4
	0 / 0 / 0 / 0	82	5	rear	11,5	19,0	25.3	41.9
36,0 (79 400)	1.0 / 0 / 0 / 0	10	5	front	20,5	18,0	45.2	39.7
	0 / 0 / 0 / 0	82	5	rear	15,0	21,0	33.1	46.3
50,0 (110 200)	1.0 / 0.5 / 0 / 0	10	5	front	21,0	21,5	46.3	47.4
	0 / 0 / 0 / 0	82	5	rear	18,5	22,5	40.8	49.6
80,0 (176 400)	1.0 / 1.0 / 1.0 / 0	10	5	front	23,0	28,0	50.7	61.7
	0 / 0 / 0 / 0	82	5	rear	26,0	26,5	57.3	58.4
100,0 (220 500)	not permissible							

- 1) Boom position at rear = 0° position, boom over truck crane rear edge
 Boom position at front = 180° position, boom over driver's cab
- 2) Axle load front: each on the 1st and 2nd axle lines
 rear: each on the 3rd, 4th, 5th and 6th axle lines



If the front outrigger cylinders cannot be extended after driving the truck crane; Extending the outrigger, p. 3-77.



3.15

Table of lubricants



The lubricants listed in the following table are to be used in the maintenance of the telescopic swing-away lattice extension. If the table of lubricants in the *Maintenance manual* of the GMK 6300 contains other lubricants under the same designation use only those lubricants in this table for the telescopic swing-away lattice extension.

Designation	Lubricating point	Type of lubrication	Designation in acc. with DIN 51502	Specification Classification	Lubricant type Viscosity range
J	Lubricating points (grease)	Grease gun and manually	K - L2K	DIN 51825	
K	Bearings	Use for repairs with grease	KP - L2K	DIN 51825	
L2	Slideways	Manually with brush or spatula	GROVE part no. 1373 458 ¹⁾		

¹⁾ Available from your local GROVE Product Support

3.16.6

Lubricating the telescope slide faces

M 6

For lubricating telescope slide faces the main boom with the telescopic swing-away lattice extension must be lowered into horizontal position. The telescope section must be extended.



Risk of falling when climbing the telescopic swing-away lattice extension and the main boom!


Do not climb the main boom or the telescopic swing-away lattice extension for lubrication. Danger of slipping due to grease residue, you may fall!

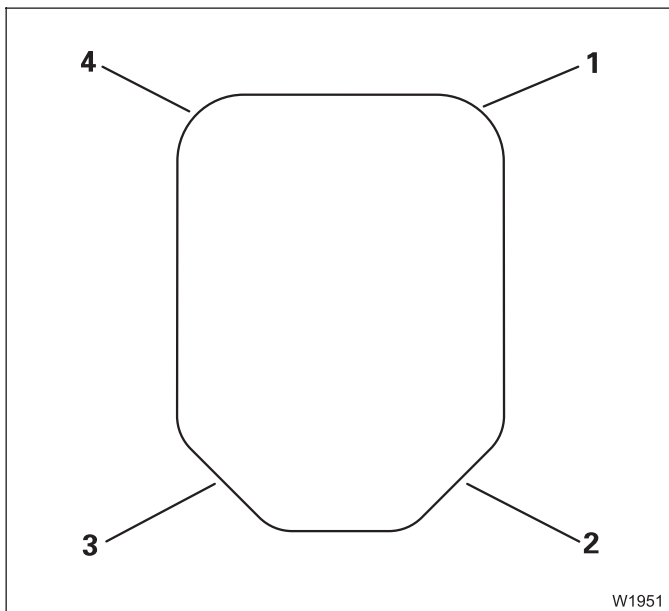
Use a ladder to lubricate.



Risk of accidents from unauthorized use of the truck crane!

During lubrication the telescopic swing-away lattice extension must not be derricked. You could fall off the ladder. Hang a warning sign in the crane cab and lock the door.

- To lubricate the chains use only lubricating grease in accordance with the *Maintenance plan*,  p. 3-81.
- Fully extend the telescopic swing-away lattice extension.



There are four slide faces on the edges of the telescope section.

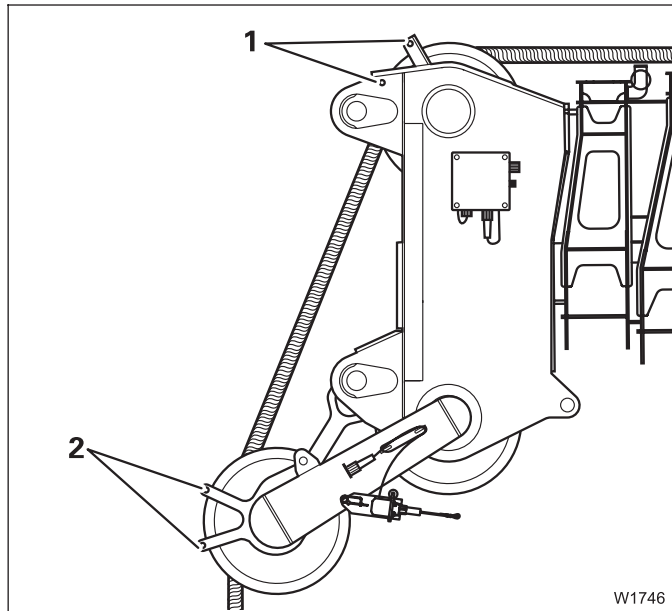
- Use a spatula to apply a thin layer of grease to the whole of the slide faces.
- Fully retract the telescopic swing-away lattice extension.



The lubricating effect is improved by extending and retracting the telescope section once again.

4.3 Reeving the hoist rope

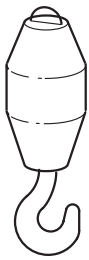



Positioning the hoist rope



- Remove the rope holding rods on the main boom head (1) and auxiliary single-sheave boom top (2).
- When reeving, guide the hoist rope over the left head sheave of the main jib.
- Insert the rope holding rod into the appropriate bore holes and secure them with the corresponding retaining pins.
- Fasten the rope end clamp on the hook tackle or hook block.

Possible reeving methods on the auxiliary single-sheave boom top

The hoist rope can be reeved no more than once when operating with the auxiliary single-sheave boom top.

	<p>Hook tackle max. load bearing capacity of the hook tackle 12 t (26 456 lbs) max. load bearing capacity with the GMK 6300: 11 t (24 251 lbs)</p>	
	<p>1-pulley hook block max. load bearing capacity of the hook block 35 t (77 160 lbs) max. load bearing capacity with the GMK 6300: 11 t (24 251 lbs)</p>	

5

Boom extension

5.1

Components and Identification

Components

When delivered, the boom extension has the following components (see diagram on next page):

- one foot section,
- four intermediate sections,
- one angle section,
- one head section.

These components can be put together in five different length combinations. To find out which parts need to be installed in which positions;

▣▣▣ *Combination possibilities*, p. 5-5.

Identification

The boom extension is designed for the truck crane with which it was delivered. The parts of the boom extension belonging to the truck crane have the same serial number as the truck crane. All components are identified by serial number.



Operate the truck crane only with those parts of the boom extension which have the same serial number as the crane. The SLI is set only for this boom extension. This means that you can prevent malfunctions and damage.

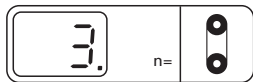
For technical reasons the truck crane may be adjusted only with one boom extension.

If you wish to use the boom extension on several GROVE truck cranes, the parts of the boom extension must be adjusted for these cranes and labelled with all of the respective serial numbers.



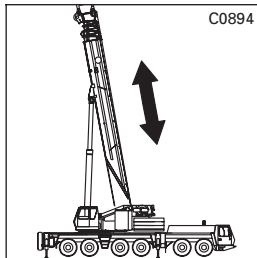
Have the matching of the boom extension carried out only by GROVE Product Support at the particular location!



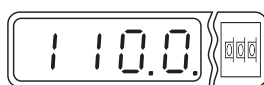


- 12.** Enter the current reeving in the SLI;
 ■■■► *GMK 6300 Operating instructions - Operation of the SLI.*

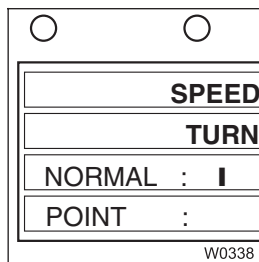
- 13.** Raise the main boom with the boom extension;
 ■■■► *Crane movements, p. 5-42.*



- 14.** If necessary telescope out the main boom to a position permissible according to the *Lifting capacity table* and lock the telescope sections;
 ■■■► *Telescoping with the boom extension, p. 5-44.*



- 15.** Select the actual rigging mode for operation with boom extension rigged on the SLI or set the respective SLI code according to the *Lifting capacity table*; ■■■► *GMK 6300 operating manual - Safe load indicator - SLI.*



- 16** The maximum permitted slewing speed for the current rigging mode is set; ■■■► *GMK 6300 Operating instructions - Maximal permitted slewing speed.*

5.5.6

Angle section

The boom extension can be operated at angles of 3° or 25° to the main boom. For this the pins on both sides of the boom extension must be removed from the bores.

The 3° angle comes from the shape of the foot section. The angle section must be folded up completely for the 3° angle.

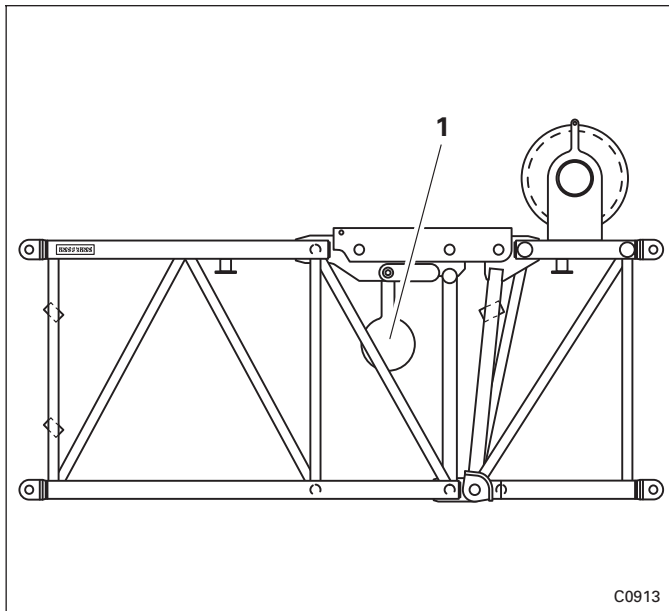


Risk of accidents from defective backstops!

The pendulum of the backstops on both sides of the boom extension must swing freely over the whole slewing range!

If it does not swing over the whole slewing range, the boom extension will not be supported at the rear.

Furthermore, the backstop can be damaged when the boom extension is set down.



- Check if the pendulum (1) of the backstops on both sides of the boom extension can swing freely.



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5.6

Driving with rigged crane and boom extension

This section describes moving the truck crane with an installed counterweight and rigged boom extension.



If the truck crane is equipped with separate steering, Deutsche GROVE GmbH recommends switching to separate steering when driving on the construction site at low speeds or when steering at a standstill on the construction site.



Risk of accidents!

It is forbidden to move the truck crane with a suspended load. Put the load down before you move the truck crane. Secure the hook block so that it cannot swing.



Risk of overturning!

Before a rigged crane can be driven the superstructure must be locked and the slewing gear permanent brake must be engaged.



Risk of accident if the truck crane is not completely visible!

While driving the equipped truck crane, always stay in visual or radio contact with a banksman who additionally observes the parts which you cannot see (e.g. the raised boom when the superstructure is rotated to the rear).

In this way you prevent accidents resulting from collisions with persons, other construction equipment, ledges of buildings, cables or other objects.

5.6.1

Driving route

The route must be a flat, even surface. The level adjustment system cannot compensate for uneven surfaces. If the surface pressure of the tires exceeds the permissible load on the ground, the surface pressure must be increased using packing made of durable material (e.g. wooden planks).



Risk of damage to tyres!

Release no air from the tyres. Do not reduce tyre pressure!



5.7

Operation with the boom extension



Risk of overturning with too high wind speeds!

If the maximum permissible wind speed according to the *Lifting capacity table* is reached you must put down the load.

Observe the information in section *Effect of wind when operating the boom extension* (further on in this chapter) and, if necessary, lower the boom extension.



The main boom may buckle!

Accelerate and brake the crane movements in such a way that the load does not sway.



Risk of accidents from overloading!

A hook block may not be reeved on the main boom during operation with the boom extension. This hook block or load is not detected by the SLI and the truck crane can become overloaded.



Risk of accidents from overturning

During operation with the boom extension, the telescopic swing-away lattice may not be folded onto the side of the main boom. The weight is not allowed for by the SLI, so there is a danger of overturning.



Single reeving may cause danger of slack rope formation!

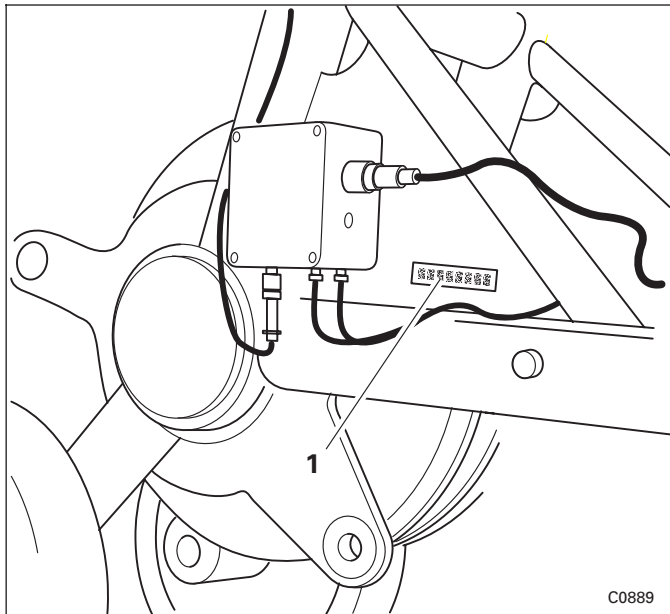
When working with system lengths of ^{*)} more than 80 m (262 ft) with single reeving, always reeve the 35 t hook block or heavier hook blocks. When using the lighter 12 t hook tackle with these system lengths, the weight of the rear hoist cable will not be compensated and the rope will go slack.

*) System length = main boom length + length of lattice extension



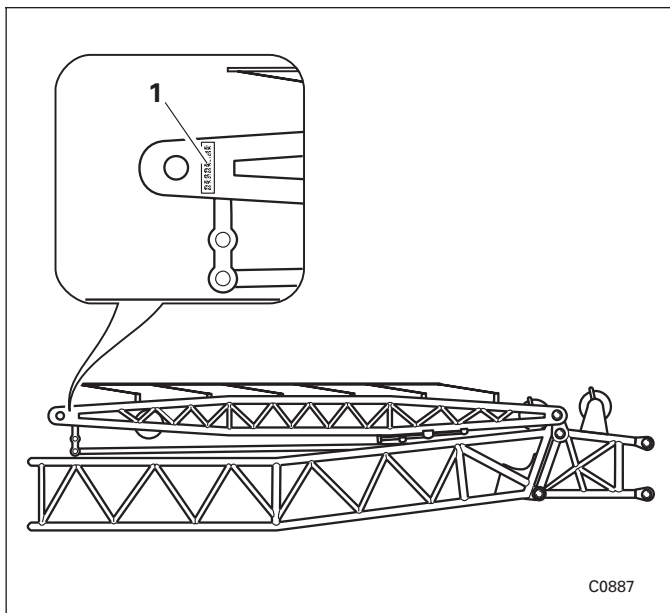
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Head



The serial number (1) of the head is on the right-hand side next to the distribution box.

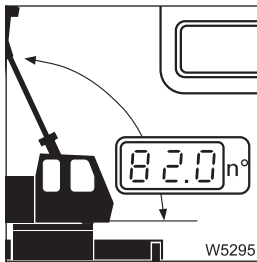
Luffing control arm



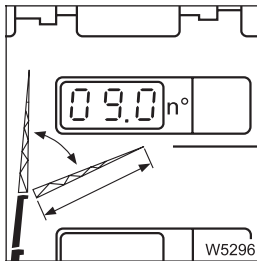
The serial number (1) of the luffing control arm is located at the end of the luffing control arm on the left-hand side.



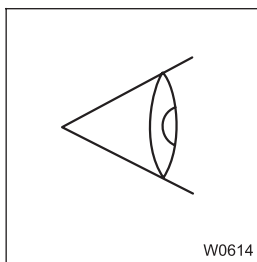
25. Enter the current reeving in the SLI;
 ■■■► *GMK 6300 Operating instructions – Operation of the SLI.*



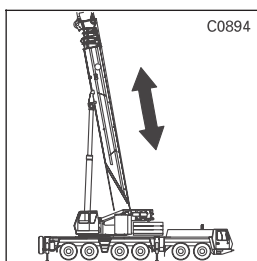
26. Raise the main boom to its steepest position (SLI display *Current main boom angle: 82°*); ■■■► *Derricking main boom with installed luffing jib, p. 6-67.*



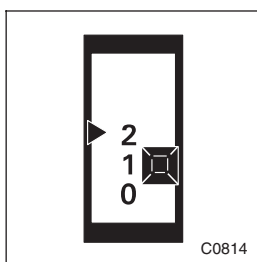
27. Raise the luffing jib using the auxiliary hoist until the SLI display *Current lattice inclination* shows 7 - 12° (e.g. 9°); ■■■► *Derricking luffing jib during rigging, p. 6-65.*



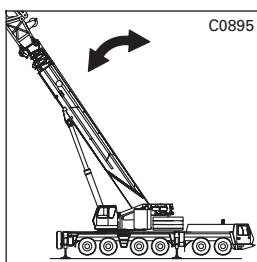
28. If necessary, check that the shutdowns on the shutdown angles are functioning properly; ■■■► *Checking the shutdown angles, p. 6-77.*



29. If necessary, telescope the main boom out to a position permissible according to the *Lifting capacity table* and lock the telescope sections; ■■■► *Derricking luffing jib during rigging, p. 6-65.*



30. Move operating mode selector switch to pos. **2: Operation**; ■■■► *Operating mode selector switch, p. 6-4.*



31. If necessary, lower the main boom to the 70° position; ■■■► *Derricking main boom with installed luffing jib, p. 6-67.*

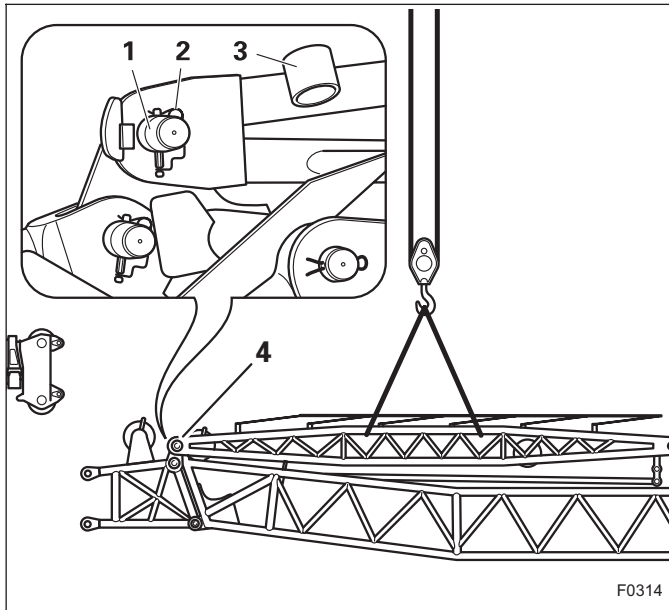
16.04.2003



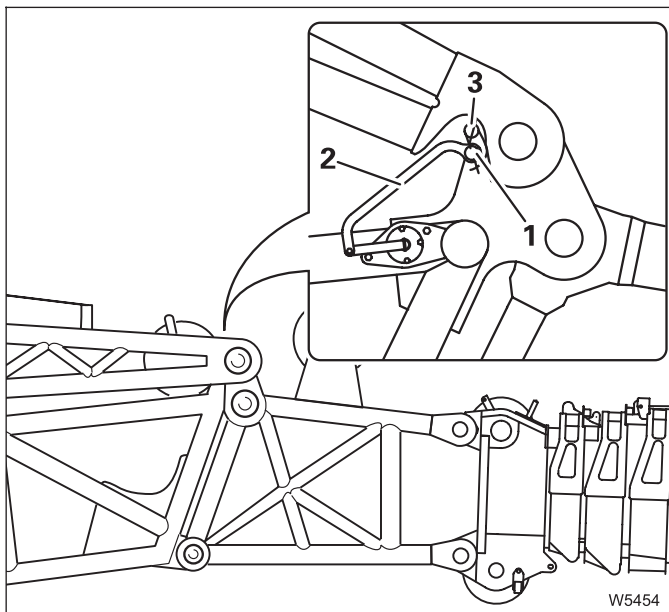
6.6.2

Installing/removing luffing control arm

Installing

**Creating a connection between the foot and the luffing control arm**

- Sling the luffing control arm to the set slinging points; ► *Slinging points*, p. 6-13.
- Lift the luffing control arm over the foot section and position it so that the connecting points (4) are aligned.
- Remove the retaining pins and pull the bolts (1) out of the holders (3).
- Lock the luffing control arm on both sides with the bolts (1) on the foot section and secure the bolts with the retaining pins (2).

**Create the connection to the potentiometer**

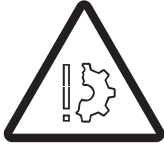
- Remove the retaining pin (3) from the peg (1).
- Fold the bracket (2) upwards and place it on the peg.
- Secure the bracket with the retaining pin.



6.6.8

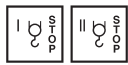
Attaching upper hook block on the luffing control arm

Before you secure the upper hook block on the luffing control arm, you must pull it from the auxiliary hoist towards the luffing control arm.

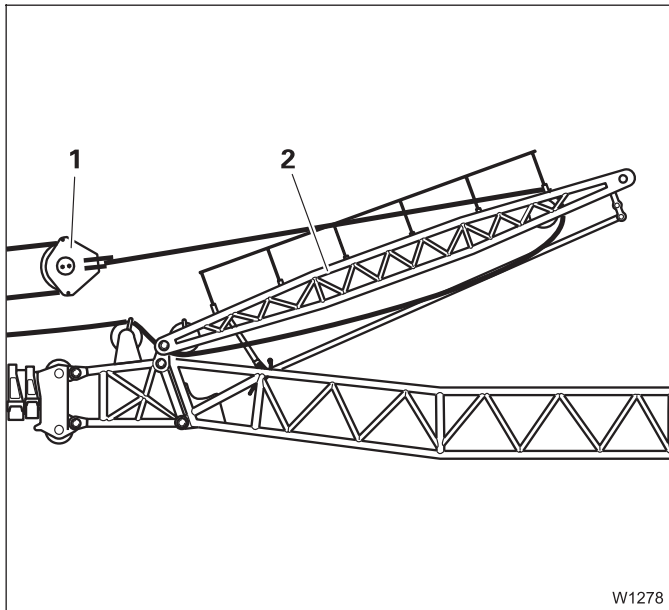


Risk of damage if luffing control arm position is too flat!

Make sure that the transport pins are inserted and that a boom section has been mounted onto the foot section before you raise the luffing control arm using an auxiliary hoist rope. This will avoid pressures being increased by an overly flat luffing control arm position to such a high degree that the deflection sheave on the luffing control arm and the main hoist rope are damaged.



- For this switch on the main hoist with the rocker switch *Main hoist shutoff* and switch on the auxiliary hoist with the rocker switch *Auxiliary hoist shutoff*.
- Now use the control lever movements *Lift main hoist* and *Lower auxiliary hoist* to draw the upper hook block forwards until it is hanging over the crosshead in the luffing control arm.



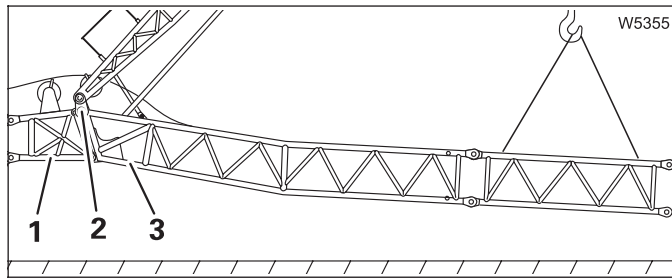
Guide the hoisting gear so that the luffing control arm (2) is first raised so far that the upper hook block (1) cannot collide with the boom sections.

If the upper hook block (1) is hanging over the crosshead, you must place the luffing control arm (2) back on the rigging supports.



6.6.11

Removing/inserting transport pins



The foot section consists of the fixed adapter piece (1) and the luffing section (3). The transport pins (2) on both sides prevent the luffing section folding down during transportation, during rigging or during operation with the boom extension.

Removing transport pins

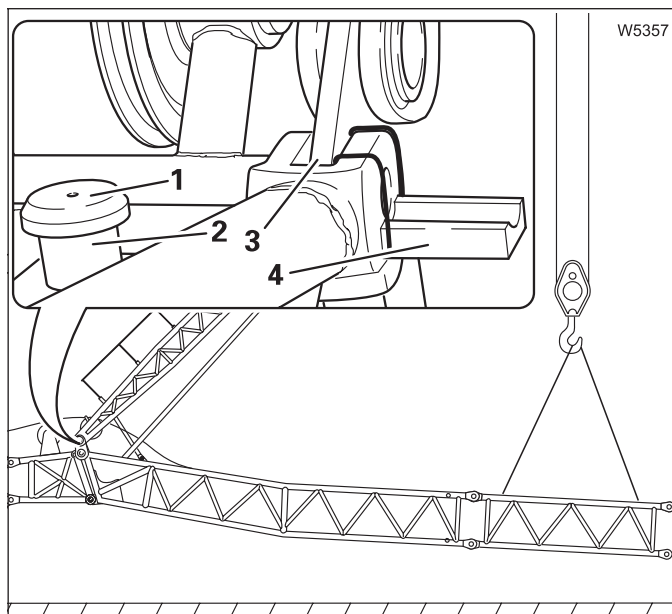
Before removing the transport pins, check whether the following requirements have been fulfilled:

- The luffing part of the foot section has been slung to an auxiliary crane
- At least one boom section is installed on the foot section
- The upper hook block has been rigged and the auxiliary hoist rope has been pulled so taut that the luffing control arm is no longer resting on the rigging supports.



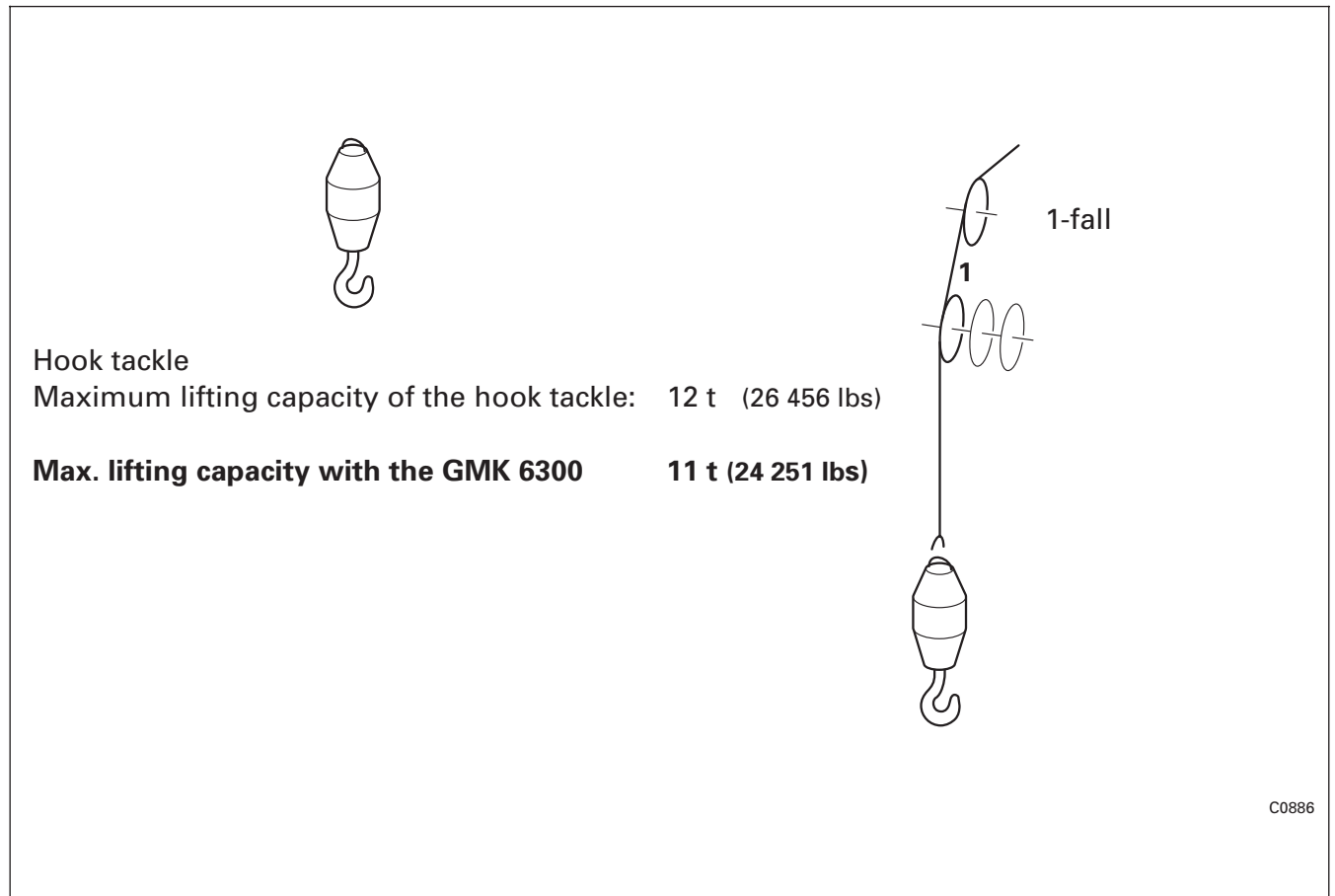
Be careful not to damage the fall-back guard strut!

Ensure that the luffing control arm is held by the auxiliary hoist rope and that a boom section has been installed before you remove the transport pins. In this way you prevent the fall-back guard strut being bent when you lower the luffing part to the ground using the auxiliary crane.



- Attach the collecting pans (4) on both sides.
- Use the auxiliary crane to lift the luffing part of the foot section until the load is relieved on the transport pin (1) in the connecting points (3).
- Remove the retaining pin and hammer the transport pin (1) outwards out of the connecting points (3); it will then fall into the collecting pan (4).
- Insert the transport pin into the holder (2) and secure it with the retaining pin.
- Remove the collecting pan.
- Remove the transport protection on the opposite side in the same way.





Risk of rope slack if single-line reeving^{*)} is used!

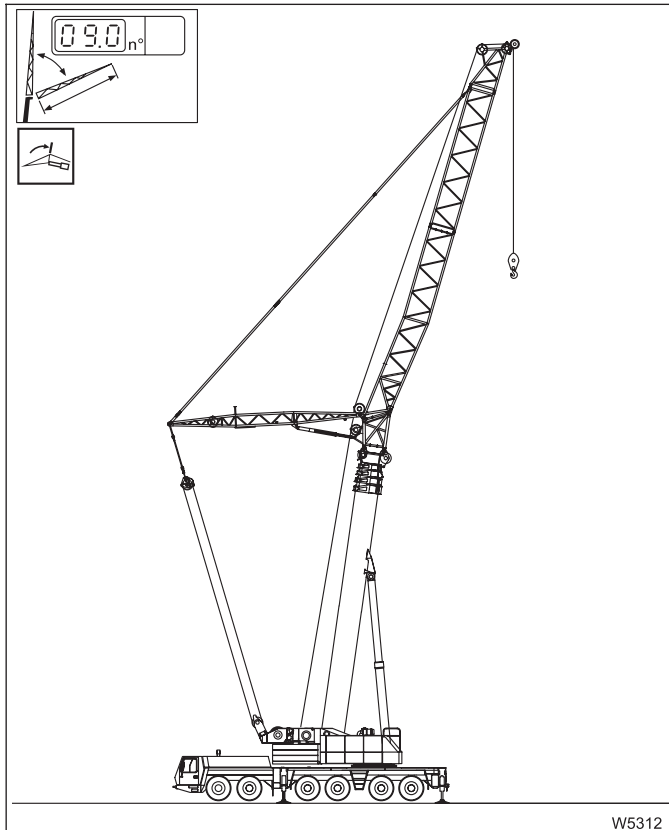
If you work with single-line reeving^{*)} for system lengths more than 80 m (262 ft), always reeve the 35 t hook block or heavier hook blocks.

When the lighter 12 t hook tackle is used with these system lengths, the weight of the rear hoist cable will not be compensated and the rope will go slack.

^{*)} System length = main boom length + length of lattice extension

Telescoping to fixed length

Leave the main boom at 82° in order to telescope it to the fixed length required for the job. Telescoping is not released at other main boom angles. Even if the job is planned with a main boom angle of 70°, you must first raise the main boom to 82° for telescoping.



- Raise the main boom slowly until the *Lattice inclination* display shows approx. 9°.

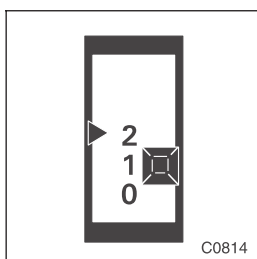
- Unlock the telescopic sections.

The luffing jib will now be in the *Telescoping range* and the *Telescoping range* indicator lamp (☐) will light up.

- Extend the main boom to the required fixed length. At the same time, carry out the *Lower auxiliary hoist* movement, so that you do not enter the *Too steep* shutdown range; ➡ p. 6-62.
- Mechanically lock the telescopic sections; the *Telescoping range* indicator lamp (☐) will go out.

Entering working position

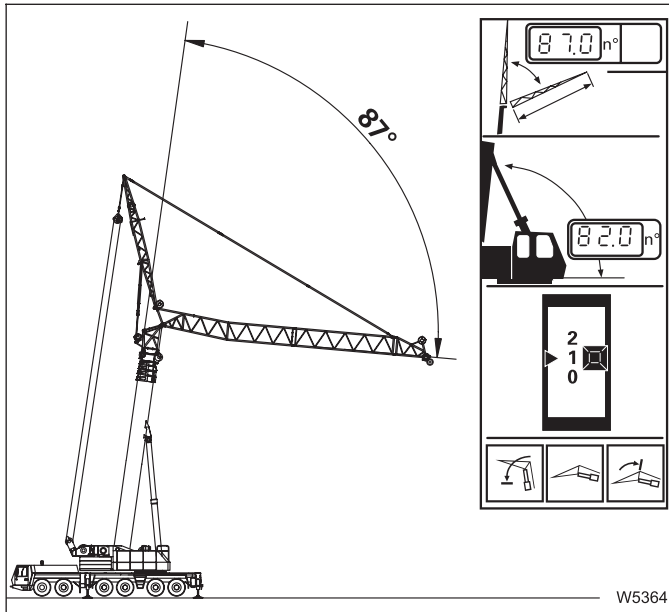
Before operation with the luffing jib, you must switch over the *Operating mode selector switch*.



- Switch the *Operating mode selector switch* into position **2** *Operation*.

If the luffing jib is to be operated with a main boom angle of 70°:

- On the SLI, set the corresponding SLI code specified in the *Lifting capacity table*.
- Lower the main boom to 70°.



Checking the *Flattest position shutdown* – Rigging range

The shutdown angle is 87°.

- Switch the *Operating mode selector switch* to position **1** for *Rigging*.
- Carry out the movement *Lower auxiliary hoist* with minimal speed until the display shows *Lattice inclination 87°*.
- Check whether the following movements are switched off:
 - Lower auxiliary hoist
 - Raise boom
 - Retract telescoping

If the movements are not stopped automatically, then stop the movement and inform GROVE Customer Support.

6.8

Driving with rigged crane and rigged luffing jib

This section describes moving the truck crane with an counterweight installed and luffing jib rigged.



If the truck crane is equipped with separate steering, Deutsche GROVE GmbH recommends switching to separate steering when driving on the construction site at low speeds or when steering at a standstill on the construction site.



Risk of accidents

You must not move the truck crane with a load on the hook.
Put the load down before you move the truck crane.
Secure the hook block so that it cannot swing.



Risk of overturning

Before a rigged crane can be driven, the superstructure must be locked and the slewing gear holding brake must be engaged.



Risk of accidents when you cannot see the entire truck crane

While driving the rigged truck crane, always stay in visual or radio contact with a banksman who additionally observes the parts which you cannot see (e.g. the raised boom in cases where the superstructure is turned to the back).

This will prevent accidents resulting from collisions with persons, other construction equipment, ledges of buildings, cables or other objects.

6.8.1

Driving route

The route must be along a flat, even surface. The level adjustment system cannot compensate for uneven surfaces. If the surface pressure of the tyres exceeds the permissible load on the ground, the surface area of the tyres must be increased using packing made of a stable material (e.g. wooden planks).



Risk of damage to tyres

Do not release air from the tyres. Do not reduce the tyre pressure.

6.9

Maintenance plans



All general notes, safety rules and information on environmental protection contained in the *Maintenance manual* of the GMK 6300, Chapters 1 and 2, apply when carrying out this maintenance work. In addition, the following maintenance plans apply to the maintenance plans of the same name in the *Maintenance manual* of the GMK 6300.

The same abbreviations used in the *Maintenance manual* of the GMK 6300 (for example, Bh = hours of operation).

6.9.1

Maintenance plan M 1: monthly / after 100 Bh

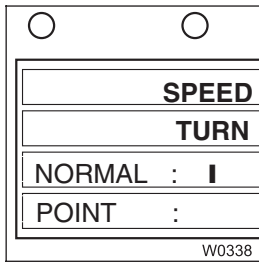
		M 1	
Maintenance work on the superstructure: monthly / after 100 Bh		Oil / lubricant	
		Amount (l)/ Number	Designation
Luffing jib (additional equipment)			
– Lubricating the fall-back guard; ■■■► 6.11.1, p. 6-105.		1	K
– Lubricating connecting pins; ■■■► 6.11.2, p. 6-105.		2	K

6.9.2

Maintenance plan M 6: monthly / after 500 Bh

		M 6	
Maintenance work on the superstructure: every six months / after 500 Bh		Oil / lubricant	
		Amount (l)/ Number	Designation
Luffing jib (additional equipment)			
– Check pressure of nitrogen and oil in backstop; ■■■► 6.11.3, p. 6-106.		1	G 2

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14. The maximum permitted slewing speed for the current rigging mode is set; *GMK 6300 Operating manual - Slewing gear.*

7.4.2

CHECKLIST: Unrigging the heavy load lattice extension

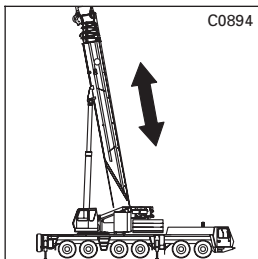


This checklist is not a complete operating manual. There are accompanying instructions, which are indicated by cross-references.

Observe the warning and safety information given there!

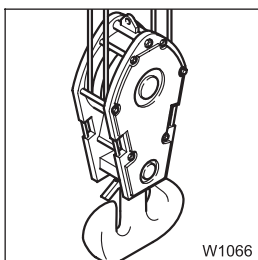


1. Set the SLI code for the actual rigging mode with the heavy load lattice extension which is to be unrigged according to the *Lifting capacity table*; *GMK 6300 Operating instructions - Operation of the safe load indicator.*

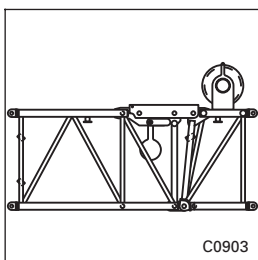


2. If necessary telescope the main jib in completely; *Crane movements, p. 7-26.*

3. Lowering the main boom; *Crane movements, p. 7-26.*



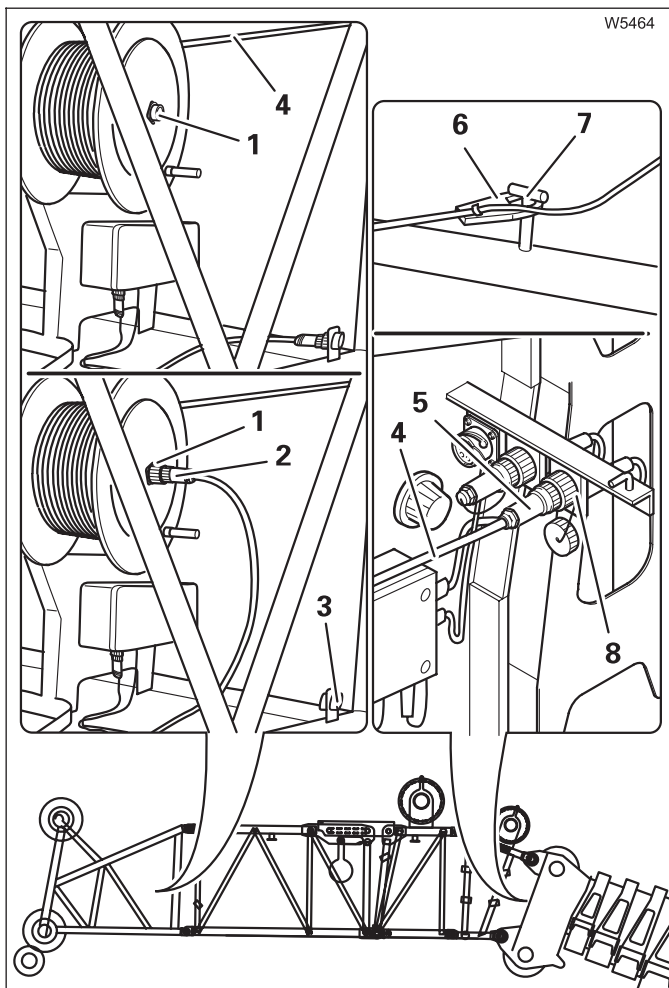
4. Unreeve hook block and reel up the main hoist rope; *Unreeving hoist rope, p. 7-21.*



5. If necessary, reset the angle of 7 m heavy load lattice extension to 0°; *Angle piece, p. 7-15.*



Establishing a connection



- Loosen the plug (5) of the connecting cable (4) from the socket (1).
- Unlock the cable drum.
- Pull the connecting cable (5) to the 1 m part.
- Insert the strain relief (6) into the holder (7).
- Pull the cap off the socket (8).
- Connect plug (5) to socket (8).
- Lock the cable drum.
- Remove the plug (2) from the dummy socket (3).
- Insert the plug (2) into the socket (1).

7.7

Turning loads with the heavy load lattice extension

When turning loads it is necessary to employ a two-hook operation. Two-hook operation only allowed in connection with the heavy load lattice extension.

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 at the weakest part first (heavy load lattice extension).



For positioning and function of required operating instruments;

➔ *Functional description of the display and operating instruments.*

Requirements

The following description assumes that:

- the main hoist rope is reeved on the main boom and
- the auxiliary hoist rope on the heavy load lattice extension is reeved.




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 rope and main hoisting gear will become overloaded.



- Steer the truck crane only when it is moving and avoid sudden steering movements!

When the surface is uneven the truck crane must be raised with the outrigger cylinders, horizontally aligned and then re-lowered;  *Operating instructions GMK 6300 – Retract outrigger and Switch suspension locking system.*

Extending the outrigger

The truck crane must be on outriggers before beginning work with the crane;  *Operating instructions GMK 6300 – Outrigger.*



Risk of overturning!

The truck crane must be raised until no wheels touch the ground!

After moving with heavy counterweights, the truck crane could be in a rigging situation in which the front outrigger cylinders cannot lift the crane.



Danger of causing damage due to axle loads being too high!

Do **not** lower the main boom if the truck crane is on wheels. If you lower the boom, the rear axle lines will be overloaded and damaged.

Proceed in the following manner to support the truck crane:

- Move all outrigger beams to the span required for the job.
- Extend the outrigger cylinders until the wheels of the rear axle lines no longer touch the ground.
- Extend the front outrigger cylinders out as far as the cylinder force allows.
- Set the code on the SLI for the intended job.

The rear axle lines are now without a load and you can lower the main boom.

- If need be, slew the superstructure to the rear and lower the completely folded-up main boom to 30°.
- Extend the outrigger cylinders until none of the wheels is touching the ground.
- Align the truck crane horizontally with the outrigger.

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