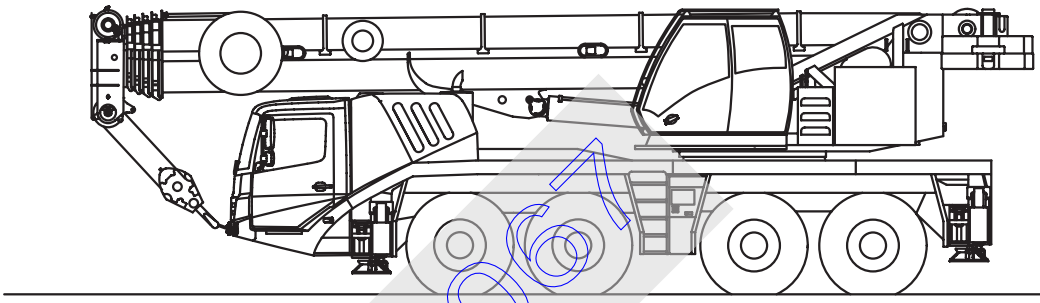
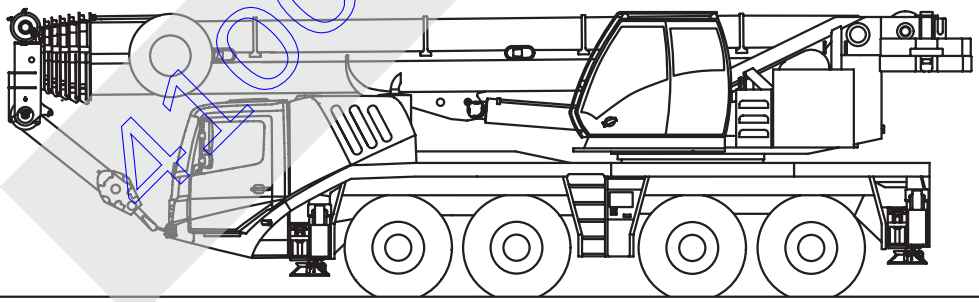
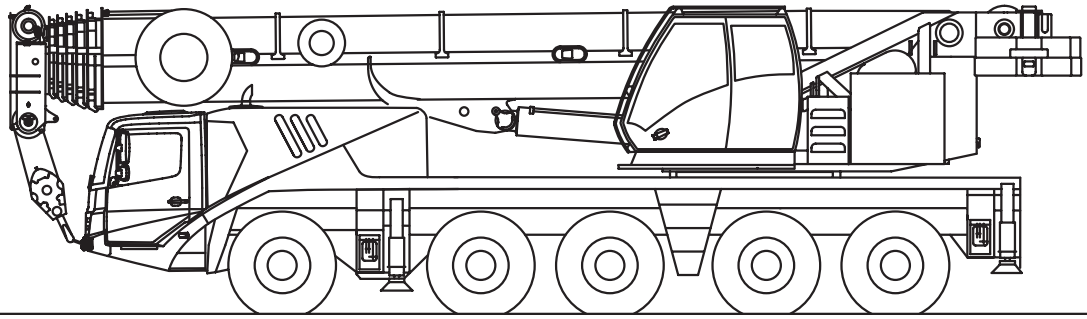
GROVE

# GMK4100/4100-L/5095

## Lattice extension operating instructions









**3 112 441 en**

**11.01.2008**

**Serial number**

Manitowoc Crane Group

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**Important note**

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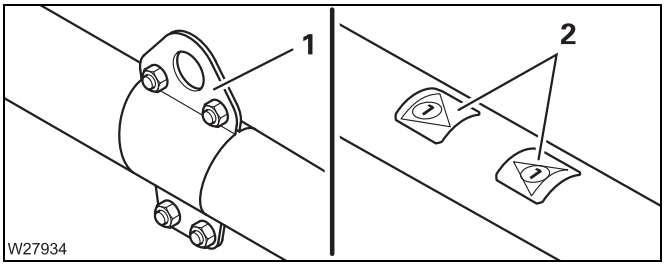
11.01.2008

# Centre of gravity of the swing-away lattice

These additional pages replace the additional pages 3 112 620.

They include:
– Updated information on centre of gravity and
– a safety note on slinging during installation/removal.

## Validity



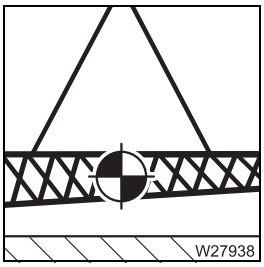

These additional pages apply for **truck cranes GMK 4100, GMK 4100-L and GMK 5095** without connection eyes (**1**) and without markings (**2**) on the swing-away lattice.



## Slinging

- Sling the swing-away lattice for the current rigging mode at the centre of gravity displayed.

**Risk of accidents due to incorrect slinging.**
The dimensions given may vary due to production-related deviations. If the swing-away lattice is raised with a single line, it will move by itself and can fall down.
This can lead to the swing-away lattice becoming damaged or people being injured or even killed.

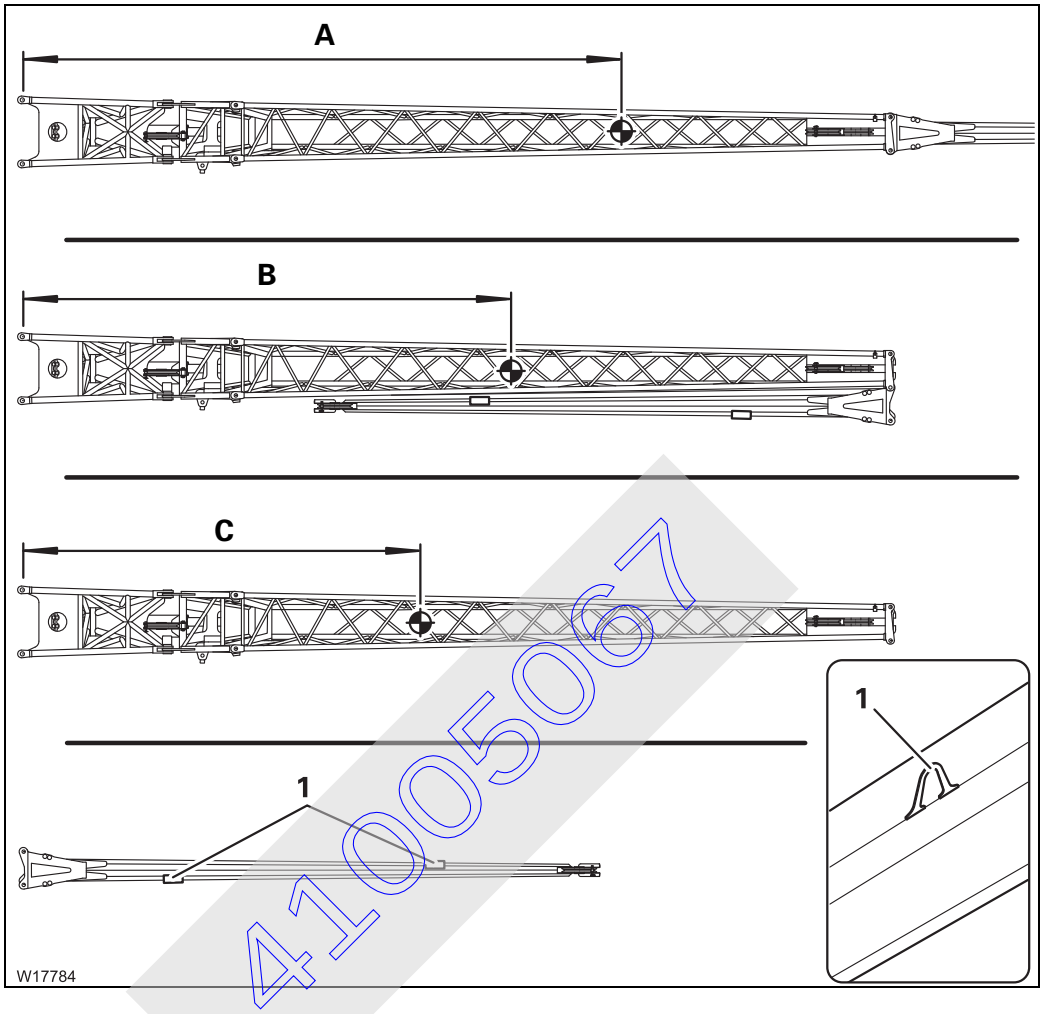



- Always raise the swing-away lattice with two single lines at an equal distance from the centre of gravity.
- Raise the swing-away lattice a little first and check whether it hangs horizontally.
- Reposition the slinging points if necessary.

10.04.2014

**Swing-away lattice in box construction**

The distances are always measured from the centre of the fork elements.





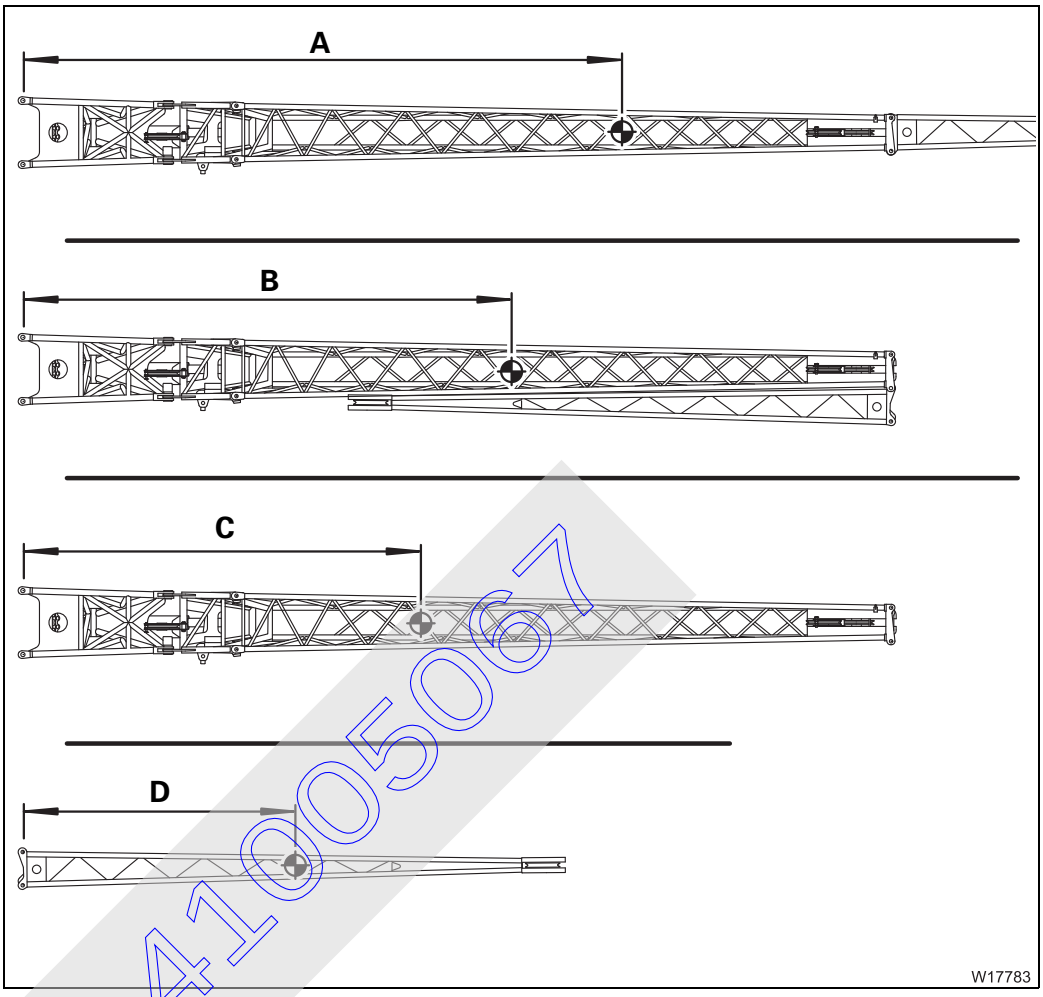

| | Measurements in mm (inches) | | |
|---|---|---|---|
| **Design** | **A** | **B** | **C** |
| inclinable | 6 120 (290.4) | 4 940 (194.5) | 4 000 (157.5) |
| derricking | 5 960 (234.6) | 4 800 (189.0) | 3 930 (154.7) |
| with ISS | 5 580 (219.7) | 4 530 (178.3) | 3 780 (148.8) |

- Use the connection eyes (**1**) on part 2.

10.04.2014

**Swing-away lattice in lattice construction**

The distances are always measured from the centre of the fork elements.






| | Measurements in mm (inches) | | | |
|---|---|---|---|---|
| **Design** | **A** | **B** | **C** | **D** |
| inclinable | 6 060 (238.6) | 4 770 (187.8) | 4 040 (159.0) | 2950 (116.1) |
| derricking | 5 960 (234.6) | 4 670 (183.8) | 3 940 (155.1) | 2950 (116.1) |

10.04.2014

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10.04.2014

# Driving with a rigged crane

**Validity**

These additional pages are valid for all **truck cranes GMK 4100** with the *Lattice extension operating manual* with one of the following identification numbers:

- 3 112 298 – 3 112 327 – 3 112 351 – 3 112 371 – 3 112 373
- 3 112 374 – 3 112 436 – 3 112 438 – 3 112 441 – 3 112 443
- 3 112 465 – 3 112 466 – 3 112 467

**Reasons for the additional information**

**Swing-away lattice and boom extension**

The values for the tables *Driving with rigged crane* are available.

**Integrated heavy load lattice extension: altered procedure**

The specifications in the supplied Lattice extension operating instructions in the chapter *Driving with rigged crane* in the section *Integrated heavy load lattice extension (ISS)* are not applicable. Proceed as follows:

- The rigging modes and axle loads specified in these additional pages are valid; ➠ *Integrated heavy load lattice extension: ISS-A or ISS-B*, p. 9.
- To move the crane on site, enter the SLI code for the current working position with ISS in accordance with the lifting capacity table.
- Move the main boom and the lattice extension into the prescribed position.

**Auxiliary single-sheave boom top and heavy load lattice extension**

The specifications in the delivered Lattice extension operating instructions in the chapter *Driving with rigged crane* for auxiliary single-sheave boom top remain or heavy load lattice extension remain valid.



12.12.2008

## Additional information

**Risk of accidents**
When reading the chapter entitled *Driving with rigged crane* in the operating instructions mentioned above, pay close attention to:

- the safety instructions,
- the notes on driving distance,
- the inspections and notes before driving with a rigged crane,
- the inspections and notes for driving with a rigged crane, and
- the notes concerning the tables with boom positions and axle loads.

### Table footnotes

| | | |
|---|---|---|
| 1) | Boom position to the rear: | 0° position, boom over rear edge of truck crane |
| | Boom position to the front: | 180° position, boom over driver's cab |
| 2) | Front axle load: | on the first and second axle line |
| | Rear axle load: | on the third and forth axle line |



12.12.2008

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

All the axle loads in the following table are valid for a **20 t hook block** (weight: 300 kg (660 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 6,3 (13 800) | 0.5 - 0 - 0- 0 - 0 | 20 – 40 | 0 – 20 | front | 13,0 (28,6) | 15,5 (34,2) |
| | Not permitted! | | | rear | | |
| 8,5 (18 700) | 0.5 - 0 - 0- 0 - 0 | 20 – 30 | 0 – 20 | front | 11,0 (24,2) | 16,0 (35,4) |
| | 0 - 0 - 0- 0 - 0 | 78 – 80 | 0 | rear | 9,0 (19,9) | 17,0 (37,5) |
| 10,7 (23 500) | 0.5 - 0.5 - 0- 0 - 0 | 20 – 40 | 0 – 20 | front | 15,0 (33,1) | 17,0 (37,5) |
| | 0 - 0 - 0- 0 - 0 | 78 – 80 | 0 – 40 | rear | 10,0 (22,0) | 17,5 (38,6) |
| 12,9 (28 400) | 0.5 - 0.5 - 0- 0 - 0 | 20 – 35 | 0 – 20 | front | 13,0 (28,6) | 18,0 (39,7) |
| | 0 - 0 - 0- 0 - 0 | 75 – 80 | 0 – 40 | rear | 11,0 (24,2) | 18,5 (40,8) |
| 15,1 (33 200) | 0.5 - 0.5 - 0- 0 - 0 | 5 – 25 | 0 | front | 13,0 (28,6) | 18,5 (40,8) |
| | 0 - 0 - 0- 0 - 0 | 75 – 80 | 0 – 40 | rear | 12,0 (26,4) | 18,5 (40,8) |
| 17,3 (38 100) | 0.5 - 0.5 - 0.5- 0 - 0 | 20 – 30 | 0 – 20 | front | 13,5 (29,7) | 18,5 (40,8) |
| | 0 - 0 - 0- 0 - 0 | 75 – 80 | 0 – 40 | rear | 13,0 (28,6) | 18,5 (40,8) |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 19,5 (42 900) | 0.5 - 0.5 - 0.5- 0 - 0 | 5 – 25 | 0 | front | 13,5 (29,7) | 20,0 (44,1) |
| | 0 - 0 - 0 - 0 - 0 | 70 – 80 | 0 – 40 | rear | 14,5 (32,0) | 20,0 (44,1) |
| 21,7 (47 800) | 0.5 - 0.5 - 0.5 - 0.5 - 0 | 5 – 25 | 0 | front | 15,0 (33,1) | 20,0 (44,1) |
| | 0 - 0 - 0 - 0 - 0 | 70 – 80 | 0 – 40 | rear | 15,5 (34,2) | 20,0 (44,1) |
| 23,9 (52 600) | 0.5 - 0.5 - 0.5 - 0.5 - 0 | 5 – 20 | 0 | front | 13,0 (28,6) | 22,0 (48,5) |
| | 0 - 0 - 0 - 0 - 0 | 65 – 80 | 0 – 40 | rear | 16,5 (36,4) | 21,5 (47,4) |
| 26,1 (57 500) | 0.5 - 0.5 - 0.5 - 0.5 - 0.5 | 5 – 20 | 0 | front | 13,5 (29,7) | 23,0 (50,7) |
| | 0 - 0 - 0 - 0 - 0 | 60 – 80 | 0 – 40 | rear | 17,5 (38,6) | 23,0 (50,7) |

[1], [2] ➠ *Table footnotes*, p. 2



12.12.2008

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

All the axle loads in the following table are valid for an **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 6,3 (13 800) | 0.5 - 0 - 0 - 0 - 0 | 20 – 45 | 0 – 20 | front | 15,0 (33,1) | 16,0 (35,4) |
| | Not permitted! | | | rear | | |
| 8,5 (18 700) | 0.5 - 0 - 0 - 0 - 0 | 20 – 35 | 0 – 20 | front | 13,0 (28,6) | 15,5 (34,2) |
| | Not permitted! | | | rear | | |
| 10,7 (23 500) | 0.5 - 0.5 - 0 - 0 - 0 | 20 – 45 | 0 – 20 | front | 17,0 (37,5) | 17,5 (38,6) |
| | 0 - 0 - 0 - 0 - 0 | 78 – 80 | 0 | rear | 9,5 (21,0) | 17,5 (38,6) |
| 12,9 (28 400) | 0.5 - 0.5 - 0- 0 - 0 | 20 – 40 | 0 – 20 | front | 15,0 (33,1) | 18,5 (40,8) |
| | 0 - 0 - 0 - 0 - 0 | 78 – 80 | 0 – 20 | rear | 11,0 (24,2) | 18,0 (39,7) |
| 15,1 (33 200) | 0.5 - 0.5 - 0- 0 - 0 | 5 – 30 | 0 | front | 15,0 (33,1) | 18,0 (39,7) |
| | 0 - 0 - 0 - 0 - 0 | 78 – 80 | 0 – 40 | rear | 12,0 (26,4) | 18,5 (40,8) |
| 17,3 (38 100) | 0.5 - 0.5 - 0.5 - 0 - 0 | 20 – 35 | 0 – 20 | front | 16,0 (35,4) | 18,5 (40,8) |
| | 0 - 0 - 0 - 0 - 0 | 75 – 80 | 0 – 40 | rear | 13,0 (28,6) | 19,5 (43,0) |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 19,5 (42 900) | 0.5 - 0.5 - 0.5 - 0 - 0 | 5 – 30 | 0 | front | 16,0 (35,4) | 19,5 (43,0) |
| | 0 - 0 - 0 - 0 - 0 | 75 – 80 | 0 – 40 | rear | 14,0 (30,8) | 19,5 (43,0) |
| 21,7 (47 800) | 0.5 - 0.5 - 0.5 - 0.5 - 0 | 5 – 30 | 0 | front | 17,5 (38,6) | 19,5 (43,0) |
| | 0 - 0 - 0 - 0 - 0 | 70 – 80 | 0 – 40 | rear | 15,0 (33,1) | 21,0 (46,3) |
| 23,9 (52 600) | 0.5 - 0.5 - 0.5 - 0.5 - 0 | 5 – 25 | 0 | front | 16,0 (35,4) | 21,0 (46,3) |
| | 0 - 0 - 0 - 0 - 0 | 70 – 80 | 0 – 40 | rear | 16,0 (35,4) | 21,0 (46,3) |
| 26,1 (57 500) | 0.5 - 0.5 - 0.5 - 0.5 - 0.5 | 5 – 25 | 0 | front | 16,5 (36,4) | 21,5 (47,4) |
| | 0 - 0 - 0 - 0 - 0 | 65 – 80 | 0 – 40 | rear | 17,5 (38,6) | 22,5 (49,6) |

[1], [2] ➠ *Table footnotes, p. 2*



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**22 m (72 ft) boom extension**

All the axle loads in the following table are valid for an **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle (°) | Lattice exten-sion incli-nation (°) | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 12,9 (28 400) | 0.5 - 0 - 0 - 0 - 0 | 20 – 30 | 0 – 20 | front | 12,5 (27,5) | 17,5 (38,6) |
| | 0 - 0 - 0 - 0 - 0 | 78 – 80 | 0 | rear | 10,5 (23,1) | 18,0 (39,7) |
| 15,1 (33 200) | 0.5 - 0 - 0 - 0 - 0 | 5 – 25 | 0 | front | 12,0 (26,4) | 19,5 (43,0) |
| | 0 - 0 - 0 - 0 - 0 | 78 – 80 | 0 – 40 | rear | 11,5 (25,3) | 19,5 (43,0) |
| 17,3 (38 100) | 0.5 - 0.5 - 0 - 0 - 0 | 20 – 35 | 0 – 20 | front | 15,0 (33,1) | 19,5 (43,0) |
| | 0 - 0 - 0 - 0 - 0 | 78 – 80 | 0 – 40 | rear | 12,5 (27,5) | 19,5 (43,0) |
| 19,5 (42 900) | 0.5 - 0.5 - 0 - 0 - 0 | 5 – 30 | 0 | front | 15,0 (33,1) | 21,0 (46,3) |
| | 0 - 0 - 0 - 0 - 0 | 75 – 80 | 0 – 40 | rear | 13,5 (29,7) | 20,5 (45,2) |
| 21,7 (47 800) | 0.5 - 0.5 - 0 - 0 - 0 | 5 – 20 | 0 | front | 13,0 (28,6) | 21,0 (46,3) |
| | 0 - 0 - 0 - 0 - 0 | 75 – 80 | 0 – 40 | rear | 14,5 (32,0) | 20,5 (45,2) |
| 23,9 (52 600) | 0.5 - 0.5 - 0.5 - 0 - 0 | 5 – 30 | 0 | front | 16,5 (36,4) | 22,5 (49,6) |
| | 0 - 0 - 0 - 0 - 0 | 75 – 80 | 0 – 40 | rear | 15,5 (34,2) | 20,5 (45,2) |
| 26,1 (57 500) | 0.5 - 0.5 - 0.5 - 0.5 - 0 | 5 – 30 | 0 | front | 18,0 (39,7) | 22,0 (48,5) |
| | 0 - 0 - 0 - 0 - 0 | 70 – 80 | 0 – 40 | rear | 17,0 (37,5) | 22,5 (49,6) |



[1)], [2)] ➠ *Table footnotes*, p. 2

**27 m (89 ft) boom extension**

All the axle loads in the following table are valid for an **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 12,9 (28 400) | 0.5 - 0 - 0 - 0 - 0 | 20 – 40 | 0 – 20 | front | 15,5 (34,2) | 18,5 (40,8) |
| | Not permitted! | | | rear | | |
| 15,1 (33 200) | 0.5 - 0 - 0 - 0 - 0 | 5 – 30 | 0 | front | 15,0 (33,1) | 18,0 (39,7) |
| | 0 - 0 - 0 - 0 - 0 | 78 – 80 | 0 | rear | 11,0 (24,2) | 19,0 (41,9) |
| 17,3 (38 100) | 0.5 - 0 - 0 - 0 - 0 | 5 – 25 | 0 | front | 13,5 (29,7) | 19,5 (43,0) |
| | 0 - 0 - 0 - 0 - 0 | 78 – 80 | 0 – 40 | rear | 12,0 (26,4) | 20,0 (44,1) |
| 19,5 (42 900) | 0.5 - 0 - 0 - 0 - 0 | 5 – 15 | 0 | front | 11,5 (25,3) | 20,5 (45,2) |
| | 0 - 0 - 0 - 0 - 0 | 78 – 80 | 0 – 40 | rear | 13,0 (28,6) | 20,0 (44,1) |
| 21,7 (47 800) | 0.5 - 0.5 - 0 - 0 - 0 | 5 – 30 | 0 | front | 16,5 (36,4) | 21,0 (46,3) |
| | 0 - 0 - 0 - 0 - 0 | 75 – 80 | 0 – 40 | rear | 14,0 (30,8) | 21,5 (47,4) |
| 23,9 (52 600) | 0.5 - 0.5 - 0 - 0 - 0 | 5 – 25 | 0 | front | 14,5 (32,0) | 22,0 (48,5) |
| | 0 - 0 - 0 - 0 - 0 | 75 – 80 | 0 – 40 | rear | 15,5 (34,2) | 21,5 (47,4) |
| 26,1 (57 500) | 0.5 - 0.5 - 0 - 0 - 0 | 5 – 15 | 0 | front | 13,0 (28,6) | 23,0 (50,7) |
| | 0 - 0 - 0 - 0 - 0 | 75 – 80 | 0 – 40 | rear | 16,5 (36,4) | 21,5 (47,4) |



1), 2) ➠ *Table footnotes*, p. 2

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**Integrated heavy load lattice extension: ISS-A or ISS-B**

With ISS-A, part A is folded on the main boom; ➠ *Lattice extension operating instructions GMK 4100; integrated heavy load lattice extension (ISS).*

All the axle loads in the following table apply for a **40 t hook block** (weight 550 kg (1,215 lbs)) reeved on the lattice extension.

| Counterweight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 4,1 (9 000) | 0.5 - 0 - 0 - 0 - 0 | 20 – 40 | 0 – 20 | front | 12,5 (27,5) | 14,0 (30,8) |
| | Not permitted! | | | rear | | |
| 6,3 (13 800) | 0.5 - 0.5 - 0 - 0 - 0 | 20 – 45 | 0 – 20 | front | 15,5 (34,2) | 15,0 (33,1) |
| | Not permitted! | | | rear | | |
| 8,5 (18 700) | 0.5 - 0.5 - 0.5 - 0 - 0 | 25 – 45 | 0 – 20 | front | 16,5 (36,4) | 15,0 (33,1) |
| | 0 - 0 - 0 - 0 - 0 | 78 – 80 | 20 – 40 | rear | 9,0 (19,9) | 16,5 (36,4) |
| 10,7 (23 700) | 0.5 - 0.5 - 0.5 - 0 - 0 | 20 – 40 | 0 – 20 | front | 15,5 (34,2) | 16,0 (35,4) |
| | 0 - 0 - 0 - 0 - 0 | 75 – 80 | 20 – 40 | rear | 10,0 (22,0) | 17,0 (37,5) |
| 12,9 (28 400) | 0.5 - 0.5 - 0.5 - 0 - 0 | 20 – 35 | 0 – 20 | front | 14,0 (30,8) | 17,0 (37,5) |
| | 0 - 0 - 0 - 0 - 0 | 75 – 80 | 20 – 40 | rear | 11,0 (24,2) | 17,0 (37,5) |
| 15,1 (33 200) | 0.5 - 0.5 - 0.5 - 0 - 0 | 20 – 30 | 0 – 20 | front | 12,0 (26,4) | 18,5 (40,8) |
| | 0 - 0 - 0 - 0 - 0 | 70 – 80 | 20 – 40 | rear | 12,5 (27,5) | 18,5 (40,8) |



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| Counterweight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 17,3 (38 100) | 0.5 - 0.5 - 0.5 - 0 - 0 | 5 – 20 | 0 | front | 12,0 (26,4) | 19,0 (41,9) |
| | 0 - 0 - 0 - 0 - 0 | 70 – 80 | 20 – 40 | rear | 13,5 (29,7) | 18,5 (40,8) |
| 19,5 (42 900) | 0.5 - 0.5 - 0.5 - 0.5 - 0 | 5 – 20 | 0 | front | 13,0 (28,6) | 19,5 (43,0) |
| | 0 - 0 - 0 - 0 - 0 | 65 – 80 | 20 – 40 | rear | 14,5 (32,0) | 20,0 (44,1) |
| 21,7 (47 800) | 0.5 - 0.5 - 0.5 - 0.5 - 0.5 | 5 – 20 | 0 | front | 13,0 (28,6) | 20,5 (45,2) |
| | 0 - 0 - 0 - 0 - 0 | 60 – 80 | 20 – 40 | rear | 15,5 (34,2) | 21,0 (46,3) |
| 23,9 (52 600) | 1.0 - 0.5 - 0.5 - 0.5 - 0.5 | 5 – 35 | 0 | front | 18,5 (40,8) | 21,5 (47,4) |
| | 0 - 0 - 0 - 0 - 0 | 60 – 80 | 20 – 40 | rear | 16,5 (36,4) | 21,0 (46,3) |
| 26,1 (57 500) | 1.0 - 0.5 - 0.5 - 0.5 - 0.5 | 5 – 30 | 0 | front | 17,0 (37,5) | 22,5 (49,6) |
| | 0 - 0 - 0 - 0 - 0 | 55 – 80 | 20 – 40 | rear | 17,5 (38,6) | 22,5 (49,6) |



[1], [2] *Table footnotes*, p. 2

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# Driving with a rigged crane

**Validity**

These additional pages are valid for all truck cranes GMK 4100-L with the *Lattice extension operating manual* with one of the following identification numbers:

- 3 112 350 – 3 112 351 – 3 112 358 – 3 112 359 – 3 112 370
- 3 112 371 – 3 112 373 – 3 112 374 – 3 112 404 – 3 112 405
- 3 112 424 – 3 112 436 – 3 112 437 – 3 112 438 – 3 112 440
- 3 112 441 – 3 112 442 – 3 112 443 – 3 112 464 – 3 112 465
- 3 112 466 – 3 112 467

**Reasons for the additional information**

**Swing-away lattice and boom extension**

The values for the tables *Driving with rigged crane* are available.

**Integrated heavy load lattice extension: altered procedure**

The specifications in the supplied Lattice extension operating instructions in the chapter *Driving with rigged crane* in the section *Integrated heavy load lattice extension (ISS)* are not applicable. Proceed as follows:

- The rigging modes and axle loads specified in these additional pages are valid; *Integrated heavy load lattice extension: ISS-A or ISS-B*, p. 6.
- To move the crane on site, enter the SLI code for the current working position with ISS in accordance with the lifting capacity table.
- Move the main boom and the lattice extension into the prescribed position.

**Auxiliary single-sheave boom top and heavy load lattice extension**

The specifications in the delivered Lattice extension operating instructions in the chapter *Driving with rigged crane* for auxiliary single-sheave boom top remain or heavy load lattice extension remain valid.



26.09.2008

## Additional information

**Risk of accidents**
When reading the chapter entitled *Driving with rigged crane* in the operating instructions mentioned above, pay close attention to:

- the safety instructions,
- the notes on driving distance,
- the inspections and notes before driving with a rigged crane,
- the inspections and notes for driving with a rigged crane, and
- the notes concerning the tables with boom positions and axle loads.

### Table footnotes

| | | |
|---|---|---|
| 1) | Boom position to the rear: | 0° position, boom over rear edge of truck crane |
| | Boom position to the front: | 180° position, boom over driver's cab |
| 2) | Front axle load: | on the first and second axle line |
| | Rear axle load: | on the third and fourth axle line |



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

All the axle loads in the following table are valid for a **20 t hook block** (weight: 300 kg (660 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 12,9 (28 400) | 0.5–0.5–0.5–0–0–0 | 40 – 50 | 0 – 40 | front | 15,5 (34,2) | 18,5 (40,8) |
| | 0–0–0–0–0–0 | 78 – 80 | 0 – 40 | rear | 11,0 (24,2) | 18,5 (40,8) |
| 15,1 (33 200) | 0.5–0.5–0.5–0–0–0 | 40 – 45 | 0 – 40 | front | 13,5 (29,7) | 19,0 (41,9) |
| | 0–0–0–0–0–0 | 75 – 80 | 0 – 40 | rear | 12,5 (27,5) | 19,5 (43,0) |
| 17,3 (38 100) | 0.5–0.5–0.5–0–0–0 | 20 – 45 | 0 – 20 | front | 19,0 (41,9) | 19,0 (41,9) |
| | 0–0–0–0–0–0 | 75 – 80 | 0 – 40 | rear | 13,0 (28,6) | 19,5 (43,0) |
| 19,5 (42 900) | 0.5–0.5–0.5–0–0–0 | 20 – 30 | 0 – 20 | front | 17,5 (38,6) | 17,5 (38,6) |
| | 0–0–0–0–0–0 | 75 – 80 | 0 – 40 | rear | 14,5 (32,0) | 19,5 (43,0) |
| 21,7 (47 800) | 0.5–0.5–0.5–0–0–0 | 20 – 30 | 0 – 20 | front | 15,5 (34,2) | 20,5 (45,2) |
| | 0–0–0–0–0–0 | 70 – 80 | 0 – 40 | rear | 15,5 (34,2) | 21,5 (47,4) |
| 23,9 (52 600) | 0.5–0.5–0.5–0–0–0 | 20 – 25 | 0 – 20 | front | 13,5 (29,7) | 21,5 (47,4) |
| | 0–0–0–0–0–0 | 70 – 80 | 0 – 40 | rear | 16,5 (36,4) | 21,5 (47,4) |
| 26,1 (57 500) | 0.5–0.5–0.5–0–0–0 | 5 – 20 | 0 | front | 14,0 (30,8) | 23,0 (50,7) |
| | 0–0–0–0–0–0 | 70 – 80 | 0 – 40 | rear | 17,5 (38,6) | 21,5 (47,4) |



[1], [2] ➠ *Table footnotes*, p. 2

26.09.2008

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

All the axle loads in the following table are valid for an **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice exten-sion incli-nation (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 12,9 (28 400) | 0.5–0.5–0–0–0–0 | 25 – 45 | 0 – 20 | front | 18,5 (40,8) | 18,5 (40,8) |
| | 0–0–0–0–0–0 | 70 – 80 | 0 – 20 | rear | 11,0 (24,2) | 19,0 (41,9) |
| 15,1 (33 200) | 0.5–0.5–0–0–0–0 | 20 – 40 | 0 – 20 | front | 17,5 (38,6) | 19,0 (41,9) |
| | 0–0–0–0–0–0 | 78 – 80 | 0 – 40 | rear | 12,0 (26,4) | 19,5 (43,0) |
| 17,3 (38 100) | 0.5–0.5–0–0–0–0 | 20 – 35 | 0 – 20 | front | 16,0 (35,4) | 19,5 (43,0) |
| | 0–0–0–0–0–0 | 78 – 80 | 0 – 40 | rear | 13,0 (28,6) | 19,5 (43,0) |
| 19,5 (42 900) | 0.5–0.5–0–0–0–0 | 20 – 30 | 0 – 20 | front | 14,0 (30,8) | 21,0 (46,3) |
| | 0–0–0–0–0–0 | 75 – 80 | 0 – 40 | rear | 14,0 (30,8) | 21,0 (46,3) |
| 21,7 (47 800) | 0.5–0.5–0–0–0–0 | 20 – 25 | 0 – 20 | front | 12,5 (27,5) | 22,0 (48,5) |
| | 0–0–0–0–0–0 | 75 – 80 | 0 – 40 | rear | 15,0 (33,1) | 21,0 (46,3) |
| 23,9 (52 600) | 0.5–0.5–0–0–0–0 | 5 – 15 | 0 | front | 12,5 (27,5) | 22,5 (49,6) |
| | 0–0–0–0–0–0 | 70 – 80 | 0 – 40 | rear | 16,0 (35,4) | 22,5 (49,6) |
| 26,1 (57 500) | 0.5–0.5–0.5–0–0–0 | 5 – 25 | 0 | front | 16,5 (36,4) | 22,5 (49,6) |
| | 0–0–0–0–0–0 | 70 – 80 | 0 – 40 | rear | 17,5 (38,6) | 22,5 (49,6) |



[1], [2] ➠ *Table footnotes*, p. 2

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**22 m (72 ft) boom extension**

All the axle loads in the following table are valid for an **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 15,1 (33 200) | 0.5–0–0–0–0–0 | 20 – 30 | 0 – 20 | front | 13,5 (29,7) | 19,0 (41,9) |
| | 0–0–0–0–0–0 | 78 – 80 | 0 – 20 | rear | 11,5 (25,3) | 20,0 (44,1) |
| 17,3 (38 100) | 0.5–0–0–0–0–0 | 20 – 25 | 0 – 20 | front | 12,0 (26,4) | 20,5 (45,2) |
| | 0–0–0–0–0–0 | 78 – 80 | 0 – 40 | rear | 12,5 (27,5) | 20,5 (45,2) |
| 19,5 (42 900) | 0.5–0–0–0–0–0 | 5 – 15 | 0 | front | 12,0 (26,4) | 21,5 (47,4) |
| | 0–0–0–0–0–0 | 78 – 80 | 0 – 40 | rear | 13,5 (29,7) | 20,5 (45,2) |
| 21,7 (47 800) | 0.5–0.5–0–0–0–0 | 5 – 30 | 0 | front | 18,0 (39,7) | 21,0 (46,3) |
| | 0–0–0–0–0–0 | 75 – 80 | 0 – 40 | rear | 14,5 (32,0) | 22,0 (48,5) |
| 23,9 (52 600) | 0.5–0.5–0–0–0–0 | 5 – 25 | 0 | front | 16,0 (35,4) | 22,0 (48,5) |
| | 0–0–0–0–0–0 | 75 – 80 | 0 – 40 | rear | 16,0 (35,4) | 22,0 (48,5) |
| 26,1 (57 500) | 0.5–0.5–0–0–0–0 | 5 – 20 | 0 | front | 14,5 (32,0) | 23,5 (51,8) |
| | 0–0–0–0–0–0 | 75 – 80 | 0 – 40 | rear | 17,0 (37,5) | 22,0 (48,5) |



[1)], [2)] ➠ *Table footnotes*, p. 2

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**Integrated heavy load lattice extension: ISS-A or ISS-B**

With ISS-A, part A is folded on the main boom; ➠ *Lattice extension operating instructions GMK 4100-L; integrated heavy load lattice extension (ISS).*

All the axle loads in the following table apply for a **40 t hook block** (weight 550 kg (1,215 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 6,3 (13 800) | 0.5–0.5–0.5–0–0–0 | 45 – 55 | 0 – 40 | front | 16,0 (35,4) | 14,5 (32,0) |
| | Not permitted! | | | rear | | |
| 8,5 (18 700) | 0.5–0.5–0.5–0–0–0 | 40 – 55 | 0 – 40 | front | 16,5 (36,4) | 17,5 (38,6) |
| | 0–0–0–0–0–0 | 78 – 80 | 20 – 40 | rear | 9,0 (19,9) | 17,5 (38,6) |
| 10,7 (23 700) | 0.5–0.5–0.5–0–0–0 | 40 – 50 | 0 – 40 | front | 14,5 (32,0) | 17,5 (38,6) |
| | 0–0–0–0–0–0 | 78 – 80 | 20 – 40 | rear | 10,0 (22,0) | 17,5 (38,6) |
| 12,9 (28 400) | 0.5–0.5–0.5–0–0–0 | 40 – 45 | 0 – 40 | front | 13,0 (28,6) | 17,5 (38,6) |
| | 0–0–0–0–0–0 | 75 – 80 | 20 – 40 | rear | 11,5 (25,3) | 18,5 (40,8) |
| 15,1 (33 200) | 0.5–0.5–0.5–0–0–0 | 15 – 40 | 0 | front | 19,0 (41,9) | 18,0 (39,7) |
| | 0–0–0–0–0–0 | 75 – 80 | 20 – 40 | rear | 12,5 (27,5) | 18,5 (40,8) |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 17,3 (38 100) | 0.5–0.5–0.5–0–0–0 | 5 – 35 | 0 | front | 18,5 (40,8) | 19,0 (41,9) |
| | 0–0–0–0–0–0 | 70 – 80 | 20 – 40 | rear | 13,5 (29,7) | 20,0 (44,1) |
| 19,5 (42 900) | 0.5–0.5–0.5–0–0–0 | 5 – 30 | 0 | front | 16,5 (36,4) | 20,0 (44,1) |
| | 0–0–0–0–0–0 | 70 – 80 | 20 – 40 | rear | 14,5 (32,0) | 20,0 (44,1) |
| 21,7 (47 800) | 0.5–0.5–0.5–0–0–0 | 5 – 25 | 0 | front | 15,0 (33,1) | 21,0 (46,3) |
| | 0–0–0–0–0–0 | 65 – 80 | 20 – 40 | rear | 15,5 (34,2) | 21,5 (47,4) |
| 23,9 (52 600) | 0.5–0.5–0.5–0–0–0 | 5 – 15 | 0 | front | 13,0 (28,6) | 22,0 (48,5) |
| | 0–0–0–0–0–0 | 65 – 80 | 20 – 40 | rear | 16,5 (36,4) | 21,5 (47,4) |
| 26,1 (57 500) | 0.5–0.5–0.5–0.5–0–0 | 5 – 20 | 0 | front | 15,0 (33,1) | 22,5 (49,6) |
| | 0–0–0–0–0–0 | 60 – 80 | 20 – 40 | rear | 18,0 (39,7) | 23,0 (50,7) |



[1)], [2)] ➠ *Table footnotes*, p. 2

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# Driving with a rigged crane

**Validity**

These additional pages are valid for all **truck cranes GMK 5095** with the *Lattice extension operating manual* with one of the following identification numbers:

– 3 112 441 – 3 112 443 – 3 112 465 – 3 112 467

**Reasons for the additional information**

**Swing-away lattice and boom extension**

The values for the tables *Driving with rigged crane* are available.

**Integrated heavy load lattice extension: altered procedure**

The specifications in the supplied Lattice extension operating instructions in the chapter *Driving with rigged crane* in the section *Integrated heavy load lattice extension (ISS)* are not applicable. Proceed as follows:

– The rigging modes and axle loads specified in these additional pages are valid; ➠ *Integrated heavy load lattice extension: ISS-A or ISS-B*, p. 9.

- To move the crane on site, enter the SLI code for the current working position with ISS in accordance with the lifting capacity table.
- Move the main boom and the lattice extension into the prescribed position.

**Auxiliary single-sheave boom top and heavy load lattice extension**

The specifications in the delivered Lattice extension operating instructions in the chapter *Driving with rigged crane* for auxiliary single-sheave boom top remain or heavy load lattice extension remain valid.



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## Additional information

**Risk of accidents**
When reading the chapter entitled *Driving with rigged crane* in the operating instructions mentioned above, pay close attention to:

- the safety instructions,
- the notes on driving distance,
- the inspections and notes before driving with a rigged crane,
- the inspections and notes for driving with a rigged crane, and
- the notes concerning the tables with boom positions and axle loads.

### Table footnotes

| | | |
|---|---|---|
| 1) | Boom position to the rear: | 0° position, boom over rear edge of truck crane |
| | Boom position to the front: | 180° position, boom over driver's cab |
| 2) | Front axle load: | on the first and second axle line |
| | Rear axle load: | on the third to fifth axle line |



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

All the axle loads in the following table are valid for a **20 t hook block** (weight: 300 kg (660 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice exten-sion incli-nation (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 9,5 (20 100) | 0–0–0–0–0–0 | 20 – 35 | 0 – 20 | front | 8,5 (18,8) | 14,5 (32,0) |
| | 0–0–0–0–0–0 | 60 – 80 | 0 – 40 | rear | 11,0 (24,2) | 14,5 (32,0) |
| 11,7 (25 800) | 0–0–0–0–0–0 | 5 – 20 | 0 | front | 8,0 (17,6) | 15,0 (33,1) |
| | 0–0–0–0–0–0 | 55 – 80 | 0 – 40 | rear | 12,0 (26,4) | 15,0 (33,1) |
| 13,9 (30 600) | 0.5–0–0–0–0–0 | 20 – 45 | 0 – 20 | front | 11,5 (25,3) | 15,5 (34,2) |
| | 0–0–0–0–0–0 | 55 – 80 | 0 – 40 | rear | 12,5 (27,5) | 15,0 (33,1) |
| 16,1 (36 500) | 0.5–0–0–0–0–0 | 20 – 40 | 0 – 20 | front | 11,0 (24,2) | 16,0 (35,4) |
| | 0–0–0–0–0–0 | 50 – 80 | 0 – 40 | rear | 13,5 (29,7) | 16,0 (35,4) |
| 18,3 (40 300) | 0.5–0–0–0–0–0 | 20 – 35 | 0 – 20 | front | 10,0 (22,0) | 16,5 (36,4) |
| | 0–0–0–0–0–0 | 45 – 80 | 0 – 40 | rear | 14,0 (30,8) | 16,5 (36,4) |
| 20,5 (45 200) | 0.5–0–0–0–0–0 | 5 – 25 | 0 | front | 10,0 (22,0) | 17,0 (37,5) |
| | 0–0–0–0–0–0 | 40 – 80 | 0 – 40 | rear | 15,0 (33,1) | 17,5 (38,6) |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 22,7 (50 000) | 0.5–0.5–0–0–0–0 | 20 – 40 | 0 – 20 | front | 12,0 (26,4) | 18,0 (39,7) |
| | 0–0–0–0–0–0 | 40 – 80 | 0 – 40 | rear | 15,5 (34,2) | 17,5 (38,6) |
| 24,9 (54 900) | 0.5–0.5–0–0–0–0 | 20 – 35 | 0 – 20 | front | 11,5 (25,3) | 18,5 (40,8) |
| | 0–0–0–0–0–0 | 40 – 80 | 0 – 40 | rear | 16,5 (36,4) | 17,5 (38,6) |
| 27,1 (59 700) | 0.5–0.5–0.0–0–0–0 | 5 – 30 | 0 | front | 11,5 (25,3) | 19,0 (41,9) |
| | 0–0–0–0–0–0 | 70 – 80 | 0 – 40 | rear | 17,0 (37,5) | 18,0 (39,7) |

[1], [2] ➠ *Table footnotes*, p. 2



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

All the axle loads in the following table are valid for an **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 9,5 (20 100) | 0–0–0–0–0–0 | 20 – 40 | 0 – 20 | front | 9,0 (19,9) | 14,5 (32,0) |
| | 0–0–0–0–0–0 | 65 – 80 | 0 – 40 | rear | 11,0 (24,2) | 14,0 (30,8) |
| 11,7 (25 800) | 0–0–0–0–0–0 | 5 – 30 | 0 | front | 9,0 (19,9) | 15,0 (33,1) |
| | 0–0–0–0–0–0 | 60 – 80 | 0 – 40 | rear | 12,0 (26,4) | 15,0 (33,1) |
| 13,9 (30 600) | 0.5–0–0–0–0–0 | 20 – 45 | 0 – 20 | front | 12,5 (27,5) | 15,0 (33,1) |
| | 0–0–0–0–0–0 | 60 – 80 | 0 – 40 | rear | 12,5 (27,5) | 15,5 (34,2) |
| 16,1 (36 500) | 0.5–0–0–0–0–0 | 20 – 45 | 0 – 20 | front | 12,0 (26,4) | 16,0 (35,4) |
| | 0–0–0–0–0–0 | 55 – 80 | 0 – 40 | rear | 13,5 (29,7) | 16,0 (35,4) |
| 18,3 (40 300) | 0.5–0–0–0–0–0 | 20 – 40 | 0 – 20 | front | 11,0 (24,2) | 17,0 (37,5) |
| | 0–0–0–0–0–0 | 50 – 80 | 0 – 40 | rear | 14,0 (30,8) | 17,0 (37,5) |
| 20,5 (45 200) | 0.5–0–0–0–0–0 | 5 – 30 | 0 | front | 11,0 (24,2) | 17,0 (37,5) |
| | 0–0–0–0–0–0 | 50 – 80 | 0 – 40 | rear | 15,0 (33,1) | 17,0 (37,5) |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 22,7 (50 000) | 0.5–0.5–0–0–0–0 | 20 – 40 | 0 – 20 | front | 13,5 (29,7) | 17,5 (38,6) |
| | 0–0–0–0–0–0 | 45 – 80 | 0 – 40 | rear | 15,5 (34,2) | 17,5 (38,6) |
| 24,9 (54 900) | 0.5–0.5–0–0–0–0 | 20 – 35 | 0 – 20 | front | 12,5 (27,5) | 18,0 (39,7) |
| | 0–0–0–0–0–0 | 40 – 80 | 0 – 40 | rear | 16,5 (36,4) | 18,5 (40,8) |
| 27,1 (59 700) | 0.5–0.5–0–0–0–0 | 20 – 35 | 0 – 20 | front | 12,0 (26,4) | 19,0 (41,9) |
| | 0–0–0–0–0–0 | 40 – 80 | 0 – 40 | rear | 17,0 (37,5) | 18,5 (40,8) |

1), 2) ➠ *Table footnotes*, p. 2



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**22 m (72 ft) boom extension**

All the axle loads in the following table are valid for an **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 11,7 (25 800) | 0–0–0–0–0–0 | 20 – 40 | 0 – 20 | front | 10,0 (22,0) | 15,0 (33,1) |
| | 0–0–0–0–0–0 | 65 – 80 | 0 – 40 | rear | 11,5 (25,3) | 15,0 (33,1) |
| 13,9 (30 600) | 0–0–0–0–0–0 | 20 – 30 | 0 – 20 | front | 9,0 (19,9) | 15,5 (34,2) |
| | 0–0–0–0–0–0 | 65 – 80 | 0 – 40 | rear | 12,5 (27,5) | 15,0 (33,1) |
| 16,1 (36 500) | 0–0–0–0–0–0 | 5 – 20 | 0 | front | 9,0 (19,9) | 16,0 (35,4) |
| | 0–0–0–0–0–0 | 60 – 80 | 0 – 40 | rear | 13,0 (28,6) | 16,0 (35,4) |
| 18,3 (40 300) | 0.5–0–0–0–0–0 | 20 – 45 | 0 – 20 | front | 12,5 (27,5) | 17,0 (37,5) |
| | 0–0–0–0–0–0 | 60 – 80 | 0 – 40 | rear | 14,0 (30,8) | 16,5 (36,4) |
| 20,5 (45 200) | 0.5–0–0–0–0–0 | 20 – 40 | 0 – 20 | front | 12,0 (26,4) | 17,5 (38,6) |
| | 0–0–0–0–0–0 | 55 – 80 | 0 – 40 | rear | 14,5 (32,0) | 17,0 (37,5) |
| 22,7 (50 000) | 0.5–0–0–0–0–0 | 20 – 35 | 0 – 20 | front | 11,0 (24,2) | 18,0 (39,7) |
| | 0–0–0–0–0–0 | 50 – 80 | 0 – 40 | rear | 15,5 (34,2) | 18,0 (39,7) |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 24,9 (54 900) | 0.5–0–0–0–0–0 | 20 – 30 | 0 – 20 | front | 10,5 (23,1) | 18,5 (40,8) |
| | 0–0–0–0–0–0 | 50 – 80 | 0 – 40 | rear | 16,0 (35,4) | 18,0 (39,7) |
| 27,1 (59 700) | 0.5–0–0–0–0–0 | 5 – 20 | 0 | front | 10,5 (23,1) | 19,0 (41,9) |
| | 0–0–0–0–0–0 | 45 – 80 | 0 – 40 | rear | 17,0 (37,5) | 19,0 (41,9) |

[1], [2] ➠ *Table footnotes*, p. 2



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**Integrated heavy load lattice extension: ISS-A or ISS-B**

With ISS-A, part A is folded on the main boom; ➠ *Lattice extension operating instructions GMK 5095; integrated heavy load lattice extension (ISS).*

All the axle loads in the following table apply for a **40 t hook block** (weight 550 kg (1,215 lbs)) reeved on the lattice extension.

| Counterweight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 2,9 (6 300) | 0.5–0–0–0–0–0 | 40 – 60 | 0 – 40 | front | 12,0 (26,4) | 11,5 (25,3) |
| | 0–0–0–0–0–0 | 65 – 80 | 20 – 40 | rear | 9,0 (19,9) | 12,5 (27,5) |
| 5,1 (11 200) | 0.5–0–0–0–0–0 | 40 – 60 | 0 – 40 | front | 11,0 (24,2) | 13,0 (28,6) |
| | 0–0–0–0–0–0 | 60 – 80 | 20 – 40 | rear | 10,0 (22,0) | 13,0 (28,6) |
| 7,3 (16 100) | 0.5–0–0–0–0–0 | 40 – 55 | 0 – 40 | front | 10,5 (23,1) | 13,5 (29,7) |
| | 0–0–0–0–0–0 | 60 – 80 | 20 – 40 | rear | 10,5 (23,1) | 13,5 (29,7) |
| 9,5 (20 100) | 0.5–0–0–0–0–0 | 40 – 50 | 0 – 40 | front | 9,5 (21,0) | 14,0 (30,8) |
| | 0–0–0–0–0–0 | 55 – 80 | 20 – 40 | rear | 11,5 (25,3) | 14,0 (30,8) |
| 11,7 (25 800) | 0.5–0.5–0–0–0–0 | 40 – 55 | 0 – 40 | front | 11,5 (25,3) | 14,5 (32,0) |
| | 0–0–0–0–0–0 | 50 – 80 | 20 – 40 | rear | 12,0 (26,4) | 15,0 (33,1) |
| 13,9 (30 600) | 0.5–0.5–0–0–0–0 | 40 – 50 | 0 – 40 | front | 10,5 (23,1) | 15,0 (33,1) |
| | 0–0–0–0–0–0 | 45 – 80 | 20 – 40 | rear | 13,0 (28,6) | 15,5 (34,2) |



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| Counterweight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle (°) | Lattice extension inclination (°) | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | front | rear |
| 16,1 (36 500) | 0.5–0.5–0.5–0–0–0 | 40 – 55 | 0 – 40 | front | 12,0 (26,4) | 16,0 (35,4) |
| | 0–0–0–0–0–0 | 45 – 80 | 20 – 40 | rear | 13,5 (29,7) | 15,5 (34,2) |
| 18,3 (40 300) | 0.5–0.5–0.5–0–0–0 | 40 – 50 | 0 – 40 | front | 11,5 (25,3) | 16,0 (35,4) |
| | 0–0–0–0–0–0 | 40 – 80 | 20 – 40 | rear | 14,0 (30,8) | 16,5 (36,4) |
| 20,5 (45 200) | 0.5–0.5–0.5–0.5–0–0 | 40 – 50 | 0 – 40 | front | 12,0 (26,4) | 16,5 (36,4) |
| | 0–0–0–0–0–0 | 40 – 80 | 20 – 40 | rear | 15,0 (33,1) | 16,5 (36,4) |
| 22,7 (50 000) | 0.5–0.5–0.5–0.5–0.5–0 | 40 – 50 | 0 – 40 | front | 12,5 (27,5) | 17,5 (38,6) |
| | 0–0–0–0–0–0 | 40 – 80 | 20 – 40 | rear | 16,0 (35,4) | 17,0 (37,5) |
| 24,9 (54 900) | 0.5–0.5–0.5–0.5–0.5–0.5 | 40 – 50 | 0 – 40 | front | 12,0 (26,4) | 18,0 (39,7) |
| | 0–0–0–0–0–0 | 40 – 80 | 20 – 40 | rear | 16,5 (36,4) | 17,0 (37,5) |
| 27,1 (59 700) | 0.5–0.5–0.5–0.5–0.5–0.5 | 40 – 55 | 0 – 40 | front | 15,0 (33,1) | 18,5 (40,8) |
| | 0–0–0–0–0–0 | 40 – 80 | 20 – 40 | rear | 17,0 (37,5) | 17,0 (37,5) |



[1], [2] ➠ *Table footnotes*, p. 2

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**These operating instructions consist of the following chapters:**





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# 1 Information





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# 1 Information

## 1.1 About these operating instructions

**Validity of these operating instructions**

These Operating instructions apply to the lattice extension of which the serial number is identical to that on the cover sheet. The designation of the lattice extensions ➠ *Identification*, p. 2 - 4.

For the operation of the truck crane with lattice extension, the Operating instructions supplied with the truck crane also apply.

**Prerequisites for assembly and operation**

These lattice extensions may only be operated on truck cranes with the same serial number as that of the lattice extensions.



## 1.2 Basic safety instructions

**Safety instructions**

The operation of the GMK 4100/4100-L/5095 with one of the lattice extensions described in these operating instructions is subject to:

– All the safety instructions contained in the operating instructions supplied with the truck crane **and**

– All of the following safety instructions

Secure the pins both in the connecting points and in the holders always with retaining pins to prevent unsecured pins from coming loose, falling down and causing injuries.

Observe the centre of gravity information for slinging and use suitable slinging material.
In this way, you can prevent attached sections from slipping out, falling down and causing injury during the installation or removal.

**Warnings and symbols**

Information regarding the used warnings and symbols; ➠ *Operating instructions* of the truck crane.

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## 1.3 Intended use

In addition to the following specifications, also observe the specifications for intended use in the *Operating instructions GMK 4100/4100-L/5095.*

The GMK 4100/4100-L/5095 may only be operated with parts of equipment which have been approved by ***Manitowoc Crane Group Germany GmbH*** and are designated with the serial number of the truck crane.

## 1.4 Organisational measures

In addition to the following specifications, also observe the specifications concerning organisational measures in the *Operating instructions* and in the *Maintenance manual* of the crane delivered.

Make sure the maintenance personnel also have the expertise required to operate the crane safely. Make sure the maintenance personnel have access to the operating instructions.

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

The responsibilities regarding the operation of the crane and rigging, maintenance and repair work must be clearly defined.

Make sure those persons appointed to work on the truck crane are provided with the information required for their work before beginning with work. Instruct your personnel (e.g. banksmen, slingers, rigging personnel) accordingly.

Observe all safety instructions and warnings on the truck crane.

Welding work on load-bearing parts may only be carried out by qualified personnel with the manufacturer's prior permission. To avoid any damage, especially to electronic components, you must take certain precautions before performing any welding work. You should therefore always consult ***CraneCARE*** before any welding work.

Spare parts must fulfil the technical requirements defined by the manufacturer. Genuine spare parts always meet these requirements.



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## 1.5 Qualifications of personnel

**Requirements**

These operating instructions are not a training manual for beginners. All descriptions are written explicitly for crane operators who have been trained to operate truck cranes.

Personnel in training may only operate the truck crane under supervision.

Only reliable personnel may operate or carry out work on the truck crane.

The prerequisites which you, as crane operator, must fulfil are described in the *Operating instructions* of the crane delivered and in the *Safety manual*.

Only experienced personnel who are familiar with the valid accident prevention regulations may be authorised to sling loads and instruct the crane operator.

Only trained personnel may be used to maintain the truck crane; ➠ *Maintenance manual* of the truck crane delivered.

**Training courses**

Our training centre at our plant offers specialised training programmes. For details, please contact ***CraneCARE***.



## 1.6 Safety instructions for working with the lattice extension

In addition to the following specifications, also observe the safety instructions for crane operation in the *Operating instructions* of the crane delivered.

Use the appropriate access aids when carrying out overhead rigging or maintenance work. Do not use parts of the machine as access aids.

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Access only those machine parts which are equipped with appropriate steps and railings and therefore guarantee safety. For rigging and maintenance work on machine parts above body height which have no apparatus for accessing them, use the supplied extension ladder (e.g. when reeving the hoist rope on the boom head).

Make sure no unauthorized persons are in the vicinity of or on the truck crane during rigging or crane work. Cordon off the danger zone clearly and mark the zone as such.

Only use parts of equipment (counterweight sections, lattice extension) that belongs to your truck crane. The truck crane and equipment parts must have the same serial number.

Lifting loads simultaneously with two cranes is particularly dangerous. Carry out this type of work with the utmost care.

Secure the truck crane against unauthorised use whenever you leave it.

Crane work in the vicinity of electric cables or oil, gas or other supply lines is dangerous and requires special precautionary measures. Please observe the instructions in the section titled *Crane operation under special operating conditions* in the *Safety manual* and the respective national regulations.

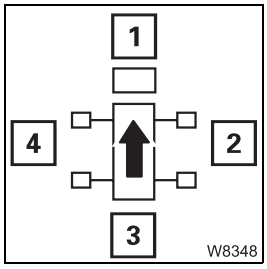


## 1.7 Definitions of directional information

**Basic rule**

Directional information always depend on whether the carrier or the superstructure is operated.

### On the carrier




The driver's cab is always at the front, which means:

**1:** front **2:** right
**3:** rear **4:** left

**Forwards** always means the driver's cab is at the front,
**backwards** always means the rear lights on the carrier are at the front.

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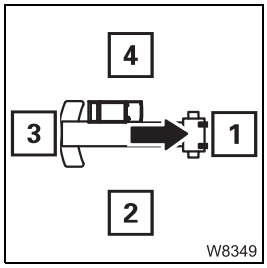
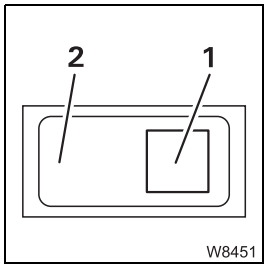
### On the superstructure




The main boom head is always at the front, which means:

**1:** front **2:** right
**3:** rear **4:** left

### Switches and buttons

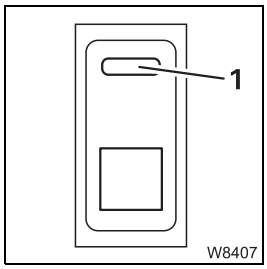



The terms **down** and **up** are used for switches and buttons.

Regardless of the installation position (vertical, horizontal, diagonal, perpendicular or turned), the following always applies:

**Down:** press (**1**) – next to the symbol
**Up:** press (**2**) – opposite the symbol

### General information on the operating elements




Some switches are provided with a lock button.

The lock button (1) is not additionally mentioned for operation. For all switches with a lock button, the following applies:

- **To switch on:**
  - First press the lock button
  - Then press the switch down
- **To switch off:** press the switch up until the lock button latches into place



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## 1.8 How are the operating instructions structured?

In **Chapter 1** you can find information and instructions concerning safety.

In **Chapter 2** you can find details on operations planning, such as dimensions, weight, identification and centre of gravity of the lattice extensions.

Rigging and operation with the lattice extensions are described in **Chapter 3** and the **following chapters**.

**Chapter 7** provides information on turning loads with the lattice extensions.

You can find out how to drive with the rigged crane at construction sites in **Chapter 8**.

**Chapter 9** describes the maintenance of the lattice extensions.

**Chapter 10** contains the index.

## 1.9 Specifications in US units of measurement

The lattice extension lengths are specified in metric units and US units of measurement in these operating instructions. The values for the US units of measurement are rounded off to the nearest whole number. For this reason, these values deviate from the specifications in the *Lifting capacity table*.

The following table compares the two.

| Specified length in metric units of measurement | Corresponding length in US units of measurement according to lifting capacity table | Rounded off length in US units of measurement in these operating instructions |
|---|---|---|
| 10 m | 32.8 ft | 33 ft |
| 17 m | 55.8 ft | 56 ft |
| 22 m | 72.2 ft | 72 ft |
| 27 m | 88.6 ft | 89 ft |



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# 1.10 Conversion table for US units of measurement

The following conversion factors can be used to convert metric units into US units and vice versa if the truck crane is used in countries where US units of measurement are used.

| Conversion from | Into | Multiply by |
|---|---|---|
| mm | in | 0.03937 |
| in | mm | 25.4 |
| m | ft | 3.28084 |
| ft | m | 0.30479 |
| $m^2$ | $ft^2$ | 10.76391 |
| $cm^2$ | $in^2$ | 0.155 |
| $cm^3$ | $in^3$ | 0.061 |
| l | gal (US) | 0.264178 |
| kg | lbs | 2.204622 |
| lbs | kg | 0.45359 |
| t | lbs | 2204.622 |
| lbs | t | 0.0004536 |
| kN | lbf | 224.809 |
| daN / $cm^2$ | lbf / $in^2$ | 14.50378 |
| lbf / $in^2$ | daN / $cm^2$ | 0.06895 |
| bar | psi | 14.50378 |
| psi | bar | 0.06895 |
| m / s | ft / s | 3.28084 |
| km/h or km | mph or mi | 0.62137 |
| mph or mi | km/h or km | 1.60935 |
| Nm | lbf ft | 0.7375 |
| °C | °F | 1.8 x °C +32 |
| °F | °C | (°F –32) / 1.8 |
| t / $m^2$ | lbs / $ft^2$ | 204.8 |
| $m^2$ / t | $ft^2$ / lbs | 0.04882 |



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# 2 For operations planning





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# 2 For operations planning

## 2.1 Notes

The following section contains information on the following subjects:
– Assembly
– Identification
– Transport dimensions and weights
– Slinging points
– Transport

**Assembly**

The length dimensions correspond to the respective distances between the centre of the locking pin (on the main boom head) and the front edge of the head sheave.
Therefore, the length dimensions of the individual parts from *Transport dimensions and weights* and their sum do not agree with the lengths specified there.

**Identification**

**Risk of accidents if not adjusted properly**
The lattice extension is designed for the truck crane with which it was delivered.
If a lattice extension is to be used on several truck cranes, it must be adjusted to the truck crane and marked with the serial number.
Have the lattice extensions only adjusted by ***CraneCARE***.
You can prevent malfunctions and damage in this way.

**Transport dimensions and weights**

Observe the weight specifications and the dimensions of the lattice extensions in the respective sections. The dimensions specified here and their sums do not correspond to the specifications in the section titled *Assembly*.



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## Slinging points

**Risk of accidents due to falling parts of the lattice extension**
Observe the centre of gravity in the corresponding illustration when slinging. Use the existing slinging points.
Always use lifting gear of sufficient lifting capacity.
In this way, you can prevent attached sections from slipping out, falling down and causing injury during the installation or removal.

## Transport

**Risk of damaging the lattice extension**
Always secure the lattice extension by tying it down with suitable belts when transporting it on a separate vehicle. This prevents the lattice extension from tipping and becoming damaged during transport.



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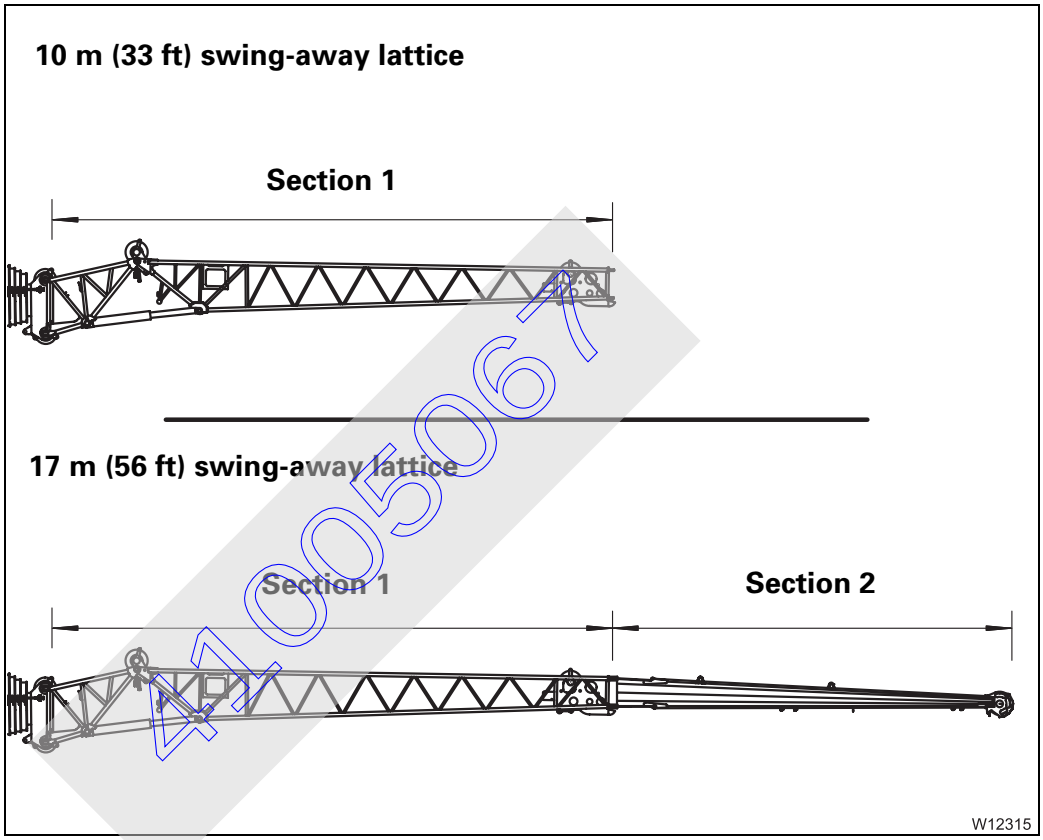
# 2.2 Swing-away lattice

## 2.2.1 Assembly

Observe the notes on *Assembly* and *Identification*; ➠ p. 2 - 1.



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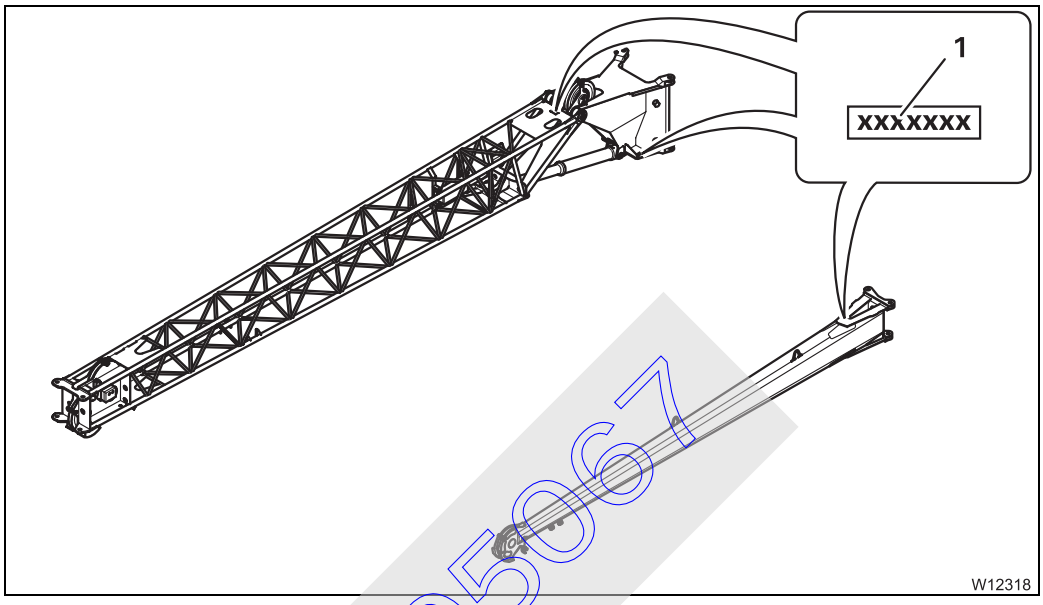
## 2.2.2 Identification

Observe the notes on *Identification*; ➠ p. 2 - 1.

In order to identify the parts of the swing-away lattice, they are marked with the serial number (**1**) of the truck crane.






## 2.2.3 Transport dimensions and weights

The following values apply for the derricking and inclinable swing-away lattice. Swing-away lattice.

| Designation | Length x width x height in m (ft) | Weight in kg (lbs) |
|---|---|---|
| 17 m (56 ft) swing-away lattice, complete, folded | 10.50 x 0.90 x 1.20 (34.5 x 3.0 x 4.0) | 1,300 (2,870) |
| Section 1 | 10.50 x 0.90 x 1.20 (34.5 x 3.0 x 4.0) | 1,000 (2,205) |
| Section 2 | 7.00 x 0.50 x 0.60 (23.0 x 1.7 x 2.0) | 300 (665) |

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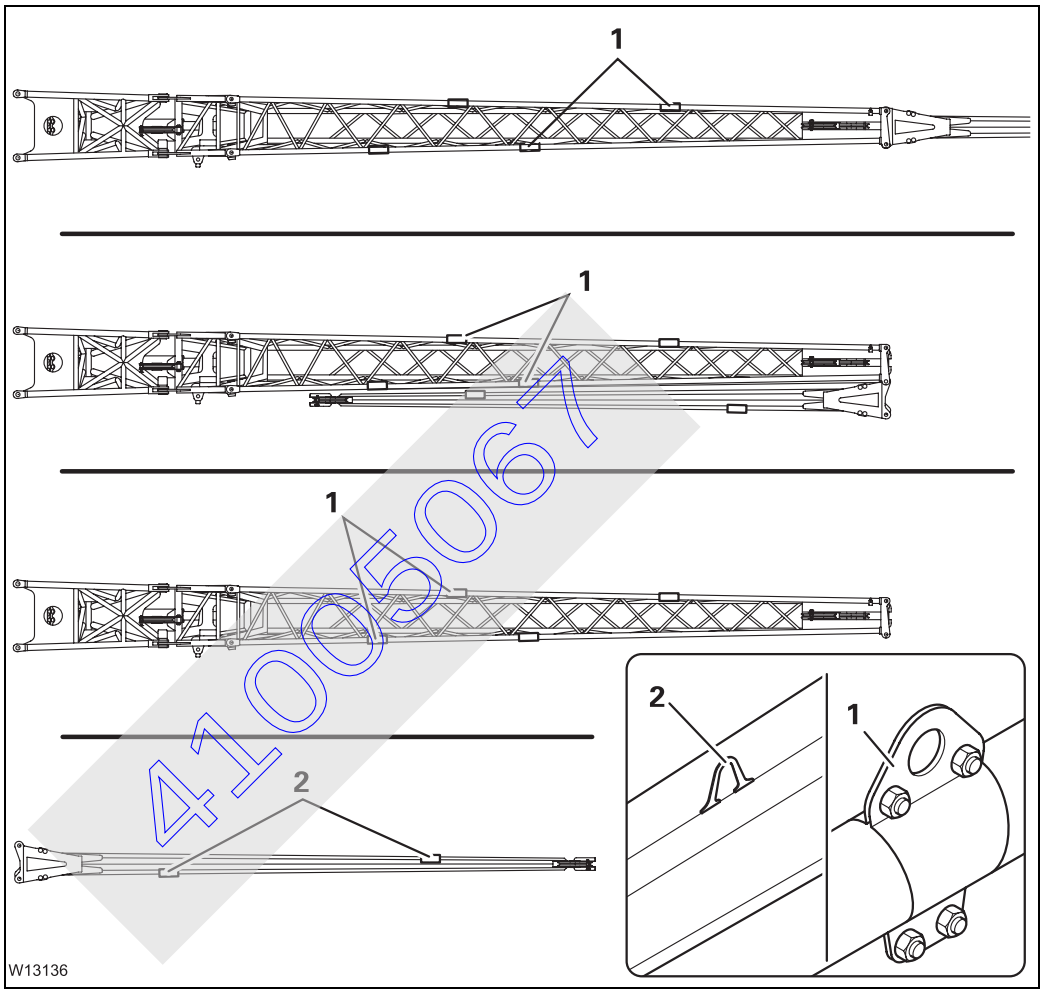
## 2.2.4 Slinging points

Observe the notes on *Slinging points*; ➠ p. 2 - 2.

Only use the connection eyes (**1**) or (**2**). Use the different connection eyes depending on whether section 2 is folded or swung out.



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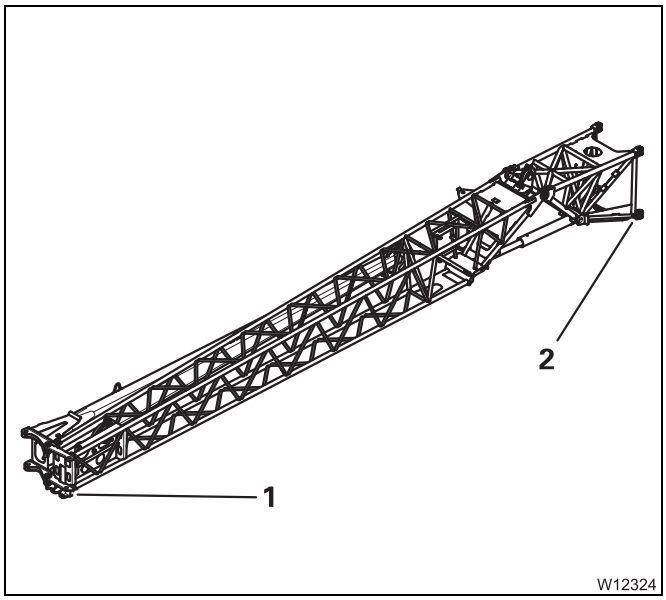
## 2.2.5 Transport

Observe the notes on *Transport* and *Slinging points*; ➠ p. 2 - 2.




- Check whether all the required connections for transport condition are established; ➠ *Transport condition with removed swing-away lattice*, p. 3 - 29.
- For transportation, place the lattice extension on the skid (**1**) at the front and onto the lower connecting points (**2**) at the rear.
- Always secure the lattice extension on the transport vehicle with belts to prevent slipping and overturning.



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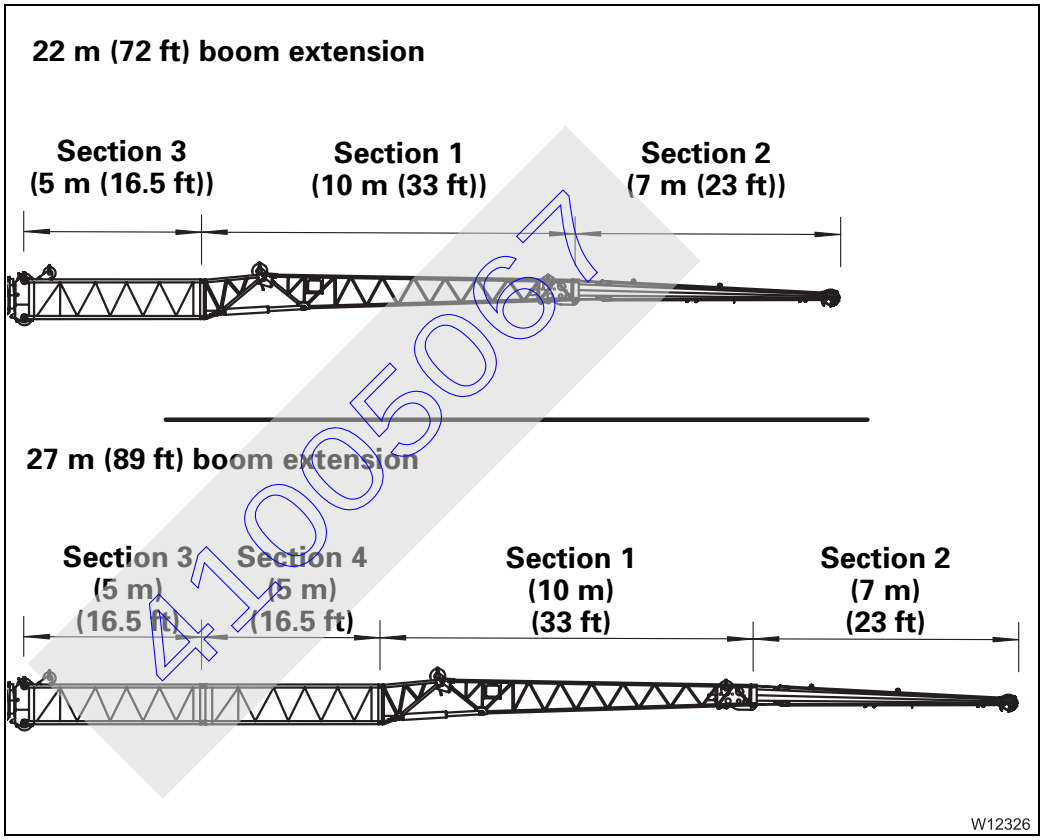
# 2.3 Boom extension

## 2.3.1 Assembly

Observe the notes on *Assembly* and *Identification*; ➠ p. 2 - 1.

For GMK 4100-L and GMK 5095, only the 22 m (72 ft) boom extension is delivered.



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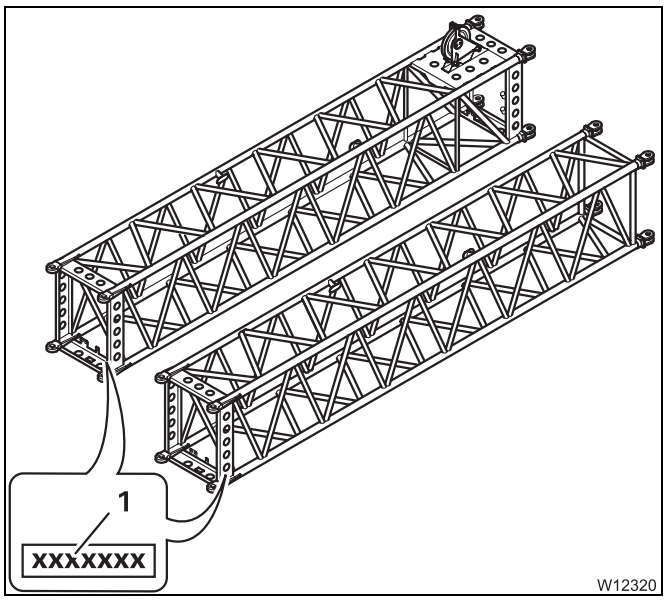
## 2.3.2 Identification

Observe the notes on *Identification*; ➠ p. 2 - 1.




In order to identify the parts of the boom extension, they are marked with the serial number (**1**) of the truck crane.



## 2.3.3 Transport dimensions and weights

| Description | Length x width x height in m (ft) | Weight in kg (lbs) |
|---|---|---|
| Section 3 (with deflection sheave) | 5.20 x 0.90 x 1.20 (17.1 x 3.0 x 4.0) | 460 (1,020) |
| Section 4 | 5.20 x 0.90 x 1.20 (17.1 x 3.0 x 4.0) | 350 (775) |

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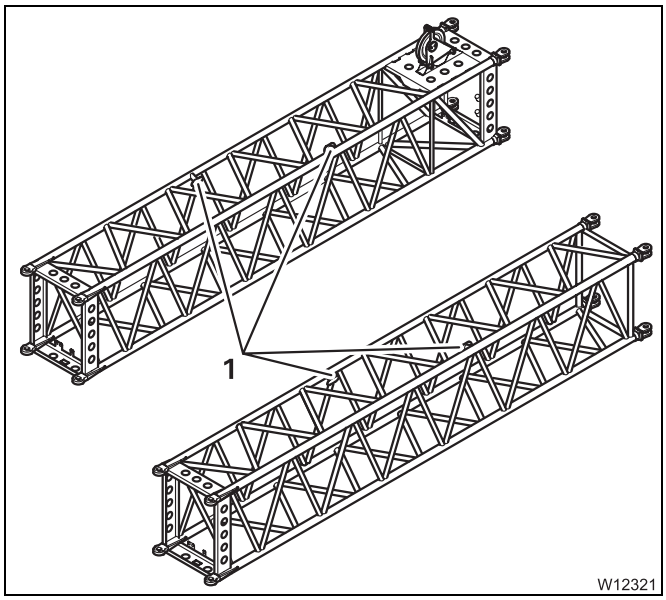
## 2.3.4 Slinging points

Observe the notes on *Slinging points*; ➠ p. 2 - 2.

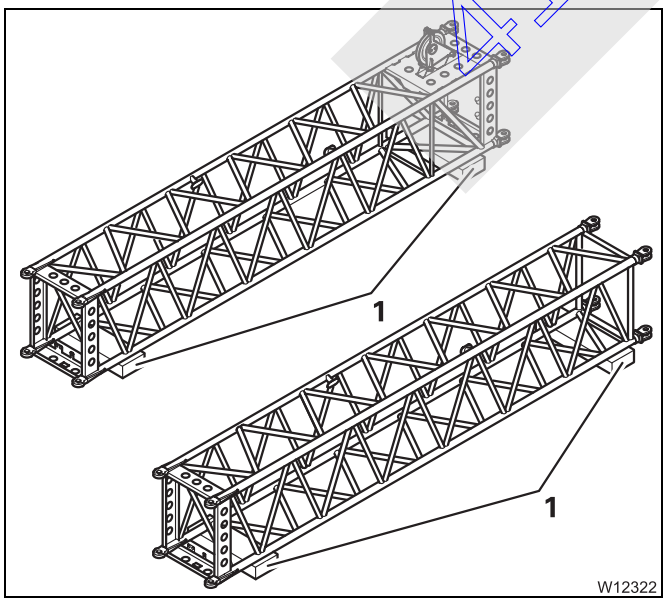



Section 3 and section 4 each have two slinging points (**1**).



## 2.3.5 Transport

Observe the notes on *Transport*; ➠ p. 2 - 2.




- Place section **3** or section **4** on the supports (**1**) at the front and rear for transport.
- Secure the lattice extension on the transport vehicle with belts to prevent it from slipping and overturning.

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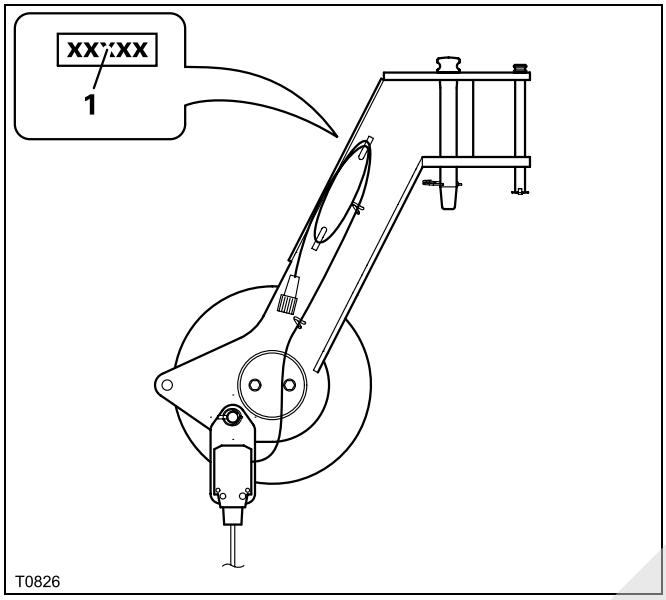
# 2.4 Auxiliary single-sheave boom top

**Identification and slinging point**

Observe the notes on:
– *Identification;* ➠ p. 2 - 1
– *Slinging points* ➠ p. 2 - 2




The serial number (**1**) is on a plate at the front of the auxiliary single-sheave boom top.

- Sling a lifting strap. Do not damage any attachments in the process.



**Transport dimension and weight**

| Description | Length x width x height in m (ft) | Weight in kg (lbs) |
|---|---|---|
| Auxiliary single-sheave boom top | 1.00 x 0.40 x 1.00 (3.3 x 1.3 x 3.3) | 60 (135) |

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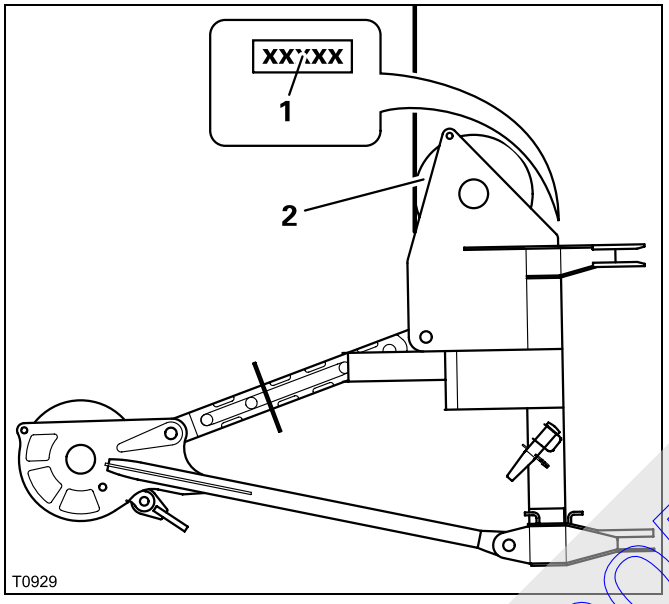
# 2.5 Heavy load lattice extension

**Identification and slinging point**

Observe the instructions regarding:
– *Identification;* ➠ p. 2 - 1 and
– *Slinging points;* ➠ p. 2 - 2.




The serial number (**1**) is on a metal sheet on the front of the cross-strut of the heavy load lattice extension.

- Attach the heavy load lattice extension at a 0° angle in front of the sheave (**2**). Be careful not to damage any additional units.



**Transport dimensions and weight**

| Designation | Length x width x height in m (ft) | Weight in kg (lbs) |
|---|---|---|
| Heavy load lattice extension 2 m (6.6 ft) | 2.30 x 0.90 x 1.60 (7.6 x 3.0 x 5.3) | 330 (730) |

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# 3 Swing-away lattice





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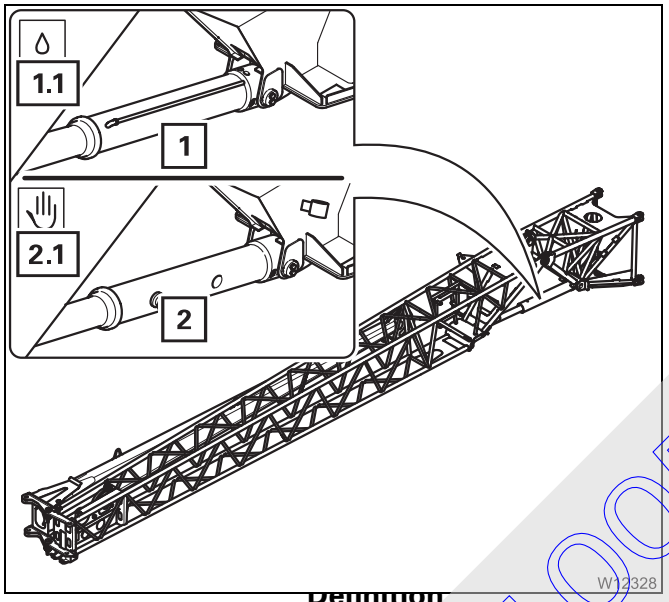
# 3 Swing-away lattice

## 3.1 Validity

This chapter applies to the derricking and inclinable swing-away lattice. The swing-away lattices are distinguished by their angle settings.




The angle of the **derricking** swing-away lattice is adjusted with the hydraulic cylinder (**1**).

Rigging work that applies **only** to this swing-away lattice is indicated in the checklists with the symbol (**1.1**).

The angle of the **inclinable** swing-away lattice is adjusted with the angle piece (**2**).

Rigging work that applies **only** to this swing-away lattice is indicated in the checklists with the symbol (**2.1**).



**Definition**

The swing-away lattice is also part of the boom extension. The described circumstances therefore also refer to the boom extension under certain conditions.
In this case the collective term *lattice extension* is used instead of the term *swing-away lattice*.

The term *swing-away lattice extension* is predominantly used in the *Lifting capacity tables*. This term is only used later on in this chapter whenever a length dimension is necessary.
If no length dimension is necessary (e.g. for rigging work), only the term *swing-away lattice* is used to keep the text as short as possible.

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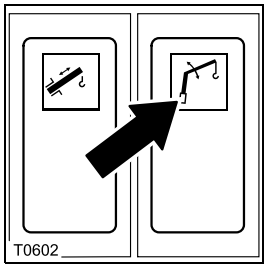
# 3.2 Short description of the operating elements

## 3.2.1 In the crane cab

### On the control console, right

This section only applies to the derricking swing-away lattice.

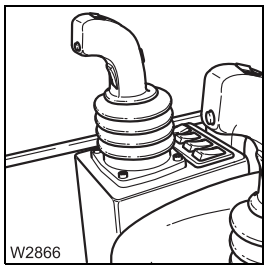



**Lattice extension derricking gear on / off**

There is a lamp in the button.

– **Press once** – Lamp bright – derricking gear on, power units with the same control lever assignment off
– Lamp dim – derricking gear off

➠ p. 3 - 77




**Right-hand control lever**

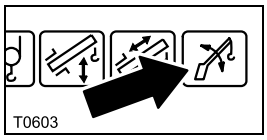
– **To the left:** Raise – lift swing-away lattice
– **To the right:** Lower – lower swing-away lattice

➠ p. 3 - 77



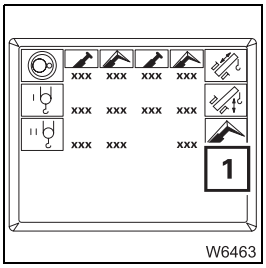
### On the crane control display

This section only applies to the derricking swing-away lattice.



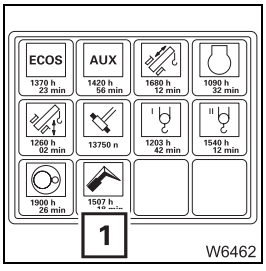

**Power unit display – in main menu**

– **Green:** Derricking gear on
– **Red:** Derricking gear off




**Limiting the power unit speed – power unit speed submenu**

If the symbol (**1**) in displayed in black, a maximum speed can be set for the lattice extension derricking gear; ➠ Operating instructions GMK 4100/4100-L/5095.




**Displaying the operating hours – operating hours submenu**

The operating hours of the lattice extension derricking gear are displayed under the symbol (**1**); ➠ Operating instructions GMK 4100/4100-L/5095.

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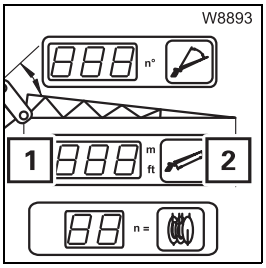
**On the safe load indicator**

The following buttons and displays are active if a lattice extension is electrically connected.

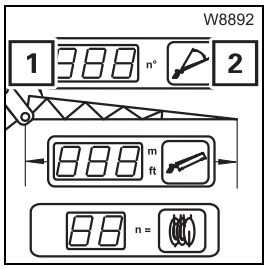



### Lattice extension length display and input

**1 Display:** Lattice extension length in metres (m) or feet (ft) – for displayed SLI code

**2 Input:** In input mode, press once – next length

p. 3 - 87



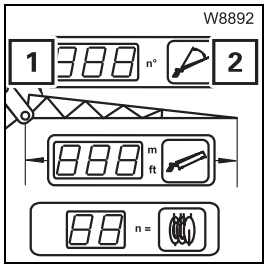

### Lattice extension angle display and input

An SLI code for the inclinable lattice extension is displayed.

**1 Display:** Angle between lattice extension and main boom in degrees (°) – for displayed SLI code

**2 Input:** In input mode, press once – next angle

p. 3 - 87




### Current lattice extension inclination display

An SLI code for the derricking lattice extension is displayed.

**1 Display:** Angle between the lattice extension and main boom in degrees (°)

**2 Display:** Additional function:
Press once – display of current angle between lattice extension and horizontal position, for two seconds

p. 3 - 87



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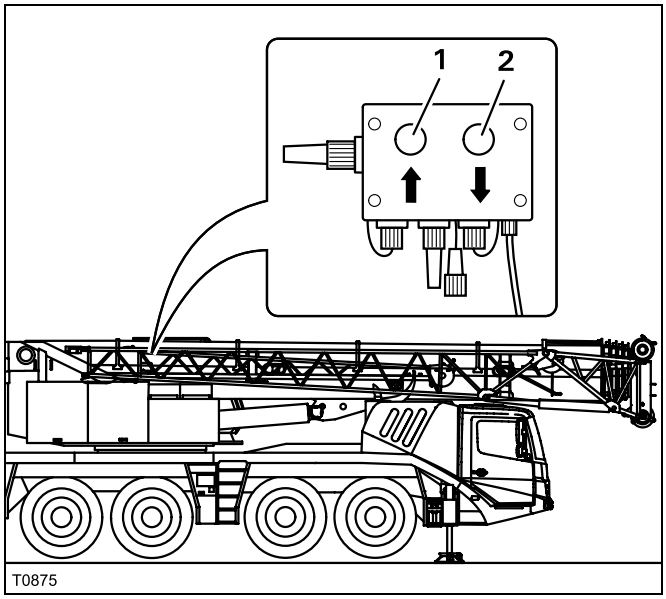
## 3.2.2 Operating elements on the swing-away lattice




This section only applies to the derricking swing-away lattice.

**1** Raise swing-away lattice

**2** Lower swing-away lattice

The swing-away lattice is moved as long as the button is pressed or a switch-off point is reached.



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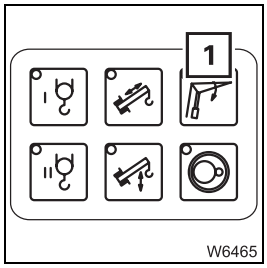
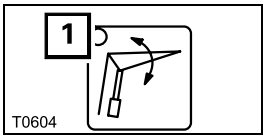
## 3.2.3 Operating elements on the hand-held control

This section only applies to the derricking swing-away lattice.

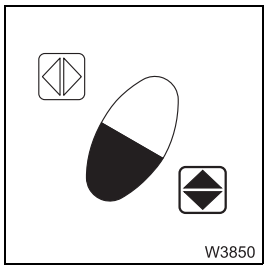



The *Derrick lattice extension* button (**1**) is active if the derricking swing-away lattice is electrically connected.

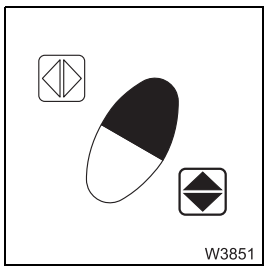
Pre-select and then press the required combination of buttons.



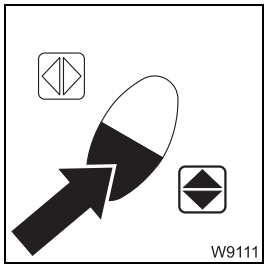

- **Pre-selection on:** Press button once – lamp (**1**) goes on – pre-selection on until another pre-selection is made
- **Pre-selection off:** Press a non-allocated combination of buttons
- **Pre-selected function on:** Press the required button combination
- **Pre-selected function off:** Release one of the buttons or both of them




- **Raise swing-away lattice:** Press the displayed button combination




- **Lower swing-away lattice:** Press the displayed button combination




- **Faster movements:** Press button further in
- **Slower movements:** Press button to a lesser degree



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# 3.3 Rigging work checklists

## 3.3.1 Overview of the required rigging work

There are different initial conditions for rigging the swing-away lattice, depending on whether the swing-away lattice is:

– Folded on the side of the main boom or
– Removed for on-road driving.

You can find out which checklist describes the required rigging work for your initial condition in the following table.

| | Initial condition of the swing-away lattice | Corresponding checklist for ... |
|---|---|---|
| **Before** crane operation | – On the side of the main boom | ➠ Rigging; p. 3 - 15 |
| | – Completely removed | ➠ Installation; p. 3 - 8 |
| **After** crane operation | – To be folded on the side of the main boom | ➠ Unrigging; p. 3 - 21 |
| | – To be removed for on-road driving | ➠ Removal[1)]; p. 3 - 10 |

[1)] Details on the driving mode ➠ *Operating instructions GMK 4100/4100-L/5095 – driving modes*.



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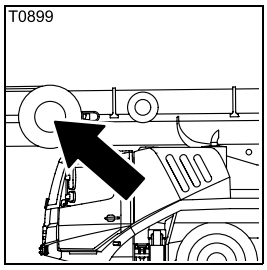
## 3.3.2 CHECKLIST: Installing the 10 / 17 m (33 / 56 ft) swing-away lattice

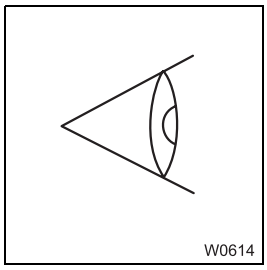
This checklist is no complete set of operating instructions. There are accompanying operating instructions which are referred to by cross-references. **Observe the warnings and safety instructions specified there.**

**Prerequisites:**

– The truck crane is on outriggers or the main boom has been set down on the boom rest.
– An auxiliary crane is available.

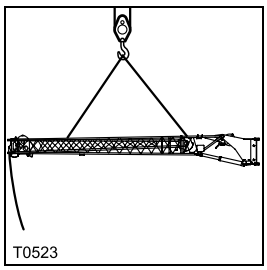



1. For the derricking swing-away lattice, release the locking device on the hose drum; ➠ p. 3 - 33.

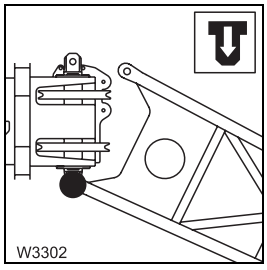



2. Check whether the transport condition of the swing-away lattice has been established; ➠ *Transport condition with removed swing-away lattice*, p. 3 - 29.






3. Sling the swing-away lattice onto the auxiliary crane and attach the guide rope to the front of section 1; ➠ *Slinging points*, p. 2 - 5.




4. Raise the swing-away lattice and pin section 1 to the right-hand side of the main boom; ➠ p. 3 - 49.

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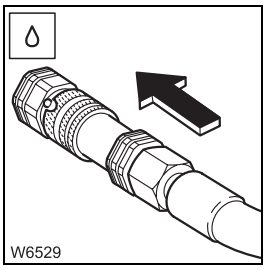
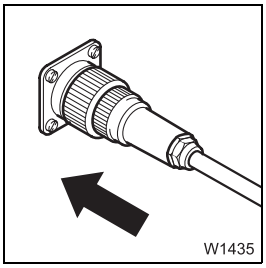
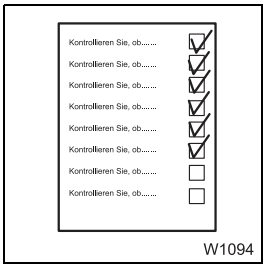
**Risk of crushing due to the swing-away lattice swinging around**
Secure the swing-away lattice against swinging always with the guide rope before establishing the hydraulic or electrical connection.
This will prevent the swing-away lattice from swinging inadvertently to the side of the main boom and crushing you.



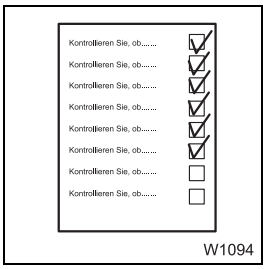

5. For derricking swing-away lattice, establish a hydraulic connection; ➠ p. 3 - 35.




6. Establish the electrical connection; ➠ p. 3 - 61.




7. For further folding:
➠ *CHECKLIST: Unrigging the 10 / 17 m (33 / 56 ft) swing-away lattice* beginning with point 19. ➠ p. 3 - 24.




8. For further rigging:
➠ *CHECKLIST: Rigging the 10 / 17 m (33 / 56 ft) swing-away lattice* beginning with point 14. ➠ p. 3 - 17.



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## 3.3.3 CHECKLIST: Removing the 10 / 17 m (33 / 56 ft) swing-away lattice

This checklist is no complete set of operating instructions. There are accompanying operating instructions which are referred to by cross-references. **Observe the warnings and safety instructions specified there.**

**Prerequisites:**

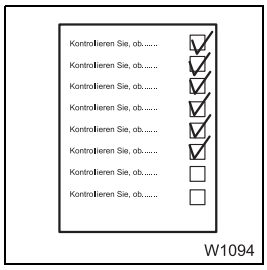
– The truck crane is on outriggers or the main boom has been set down on the boom rest.

– An auxiliary crane is available.

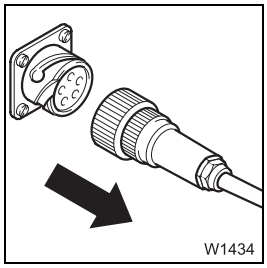
**With rigged swing-away lattice**

This checklist only applies if the swing-away lattice is rigged. If the swing-away lattice is folded on the side of the main boom, the *With folded swing-away lattice* checklist applies; ➠ p. 3 - 12.

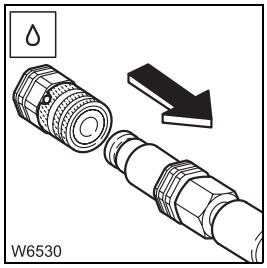
If the swing-away lattice is to be transported while folded and crane work was only carried out with section 2, you should first unrig the swing-away lattice and then remove it:
➠ *CHECKLIST: Unrigging the 10 / 17 m (33 / 56 ft) swing-away lattice*, p. 3 - 21,
➠ *With folded swing-away lattice*, p. 3 - 12.




1. Carry out all rigging work from the *CHECKLIST: Unrigging the 10 / 17 m (33 / 56 ft) swing-away lattice* up to and including point 18.; ➠ p. 3 - 24.




2. Undo the electrical connection; ➠ p. 3 - 62.




3. For derricking swing-away lattice, disconnect the hydraulic connection; ➠ p. 3 - 35



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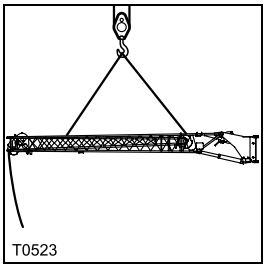
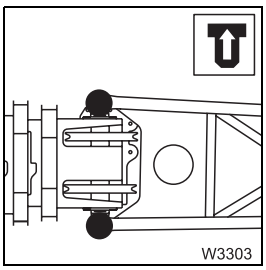
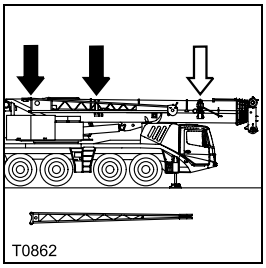


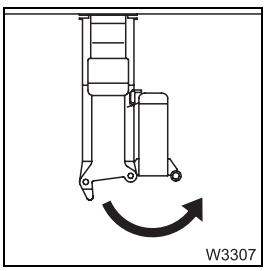

4. Sling the swing-away lattice onto the auxiliary crane and attach the guide rope to the front of section 1; ➠ *Slinging points*, p. 2 - 5.



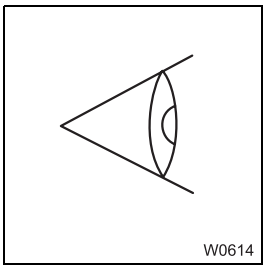

5. Undo the connection on the right and left; ➠ *Connections on the left and right-hand side of the main boom head*, p. 3 - 49.



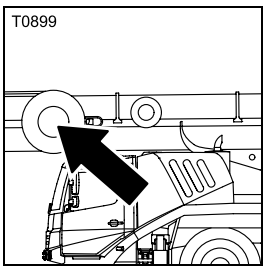

6. If section 2 is still to be removed:
   - Sling section 2 onto the auxiliary crane; ➠ *Slinging points*, p. 2 - 5.
   - Move the connection in the *Middle* area into the *Undo section 2 / main boom* position; ➠ p. 3 - 43.
   - Undo the connection in the *Rear* area; ➠ p. 3 - 45.
   - Set down section 2 on the separate vehicle.




7. If necessary, fold in the run-up rail; ➠ p. 3 - 36.




8. Check the transport condition of the swing-away lattice; ➠ *Transport condition with removed swing-away lattice*, p. 3 - 29.




9. For the derricking swing-away lattice, insert the locking device on the hose drum; ➠ p. 3 - 33.



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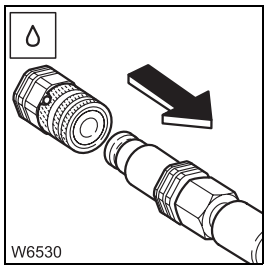
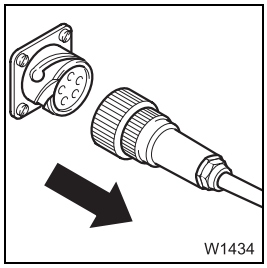
**With folded swing-away lattice**

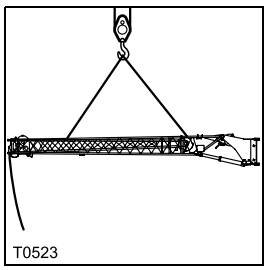
This checklist only applies if the swing-away lattice is unrigged. If the swing-away lattice is folded in front of the main boom, the checklist ➠ *With rigged swing-away lattice*, p. 3 - 10 applies.



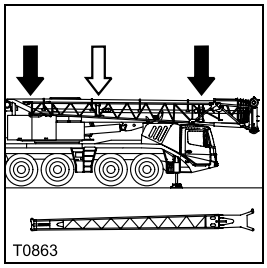

1. For derricking swing-away lattice, disconnect the hydraulic connection; ➠ p. 3 - 35



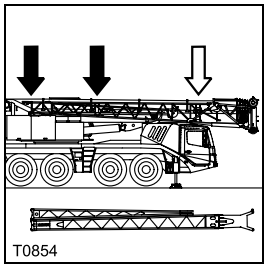

2. Undo the electrical connection; ➠ p. 3 - 62.




3. Sling the swing-away lattice onto the auxiliary crane and attach a guide rope tot the front of section 1; ➠ *Slinging points*, p. 2 - 5.




4. If the 10 m (33 ft) swing-away lattice is folded on the side:
   - Undo the connection between *section 1* and the main boom in the *Rear* area; ➠ p. 3 - 47.
   - Undo the connection in the *Front* area; ➠ p. 3 - 39.




5. If the 17 m (56 ft) swing-away lattice is folded on the side:
   - Check whether the connection between section 1 and section 2 in the *Rear* area has been established; ➠ p. 3 - 48.
   - Check whether the connection in the *Middle* area is in the *section 1 / section 2* position; ➠ p. 3 - 42.



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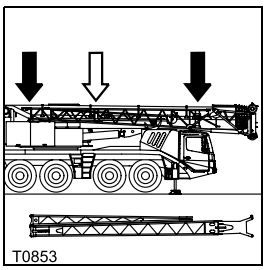
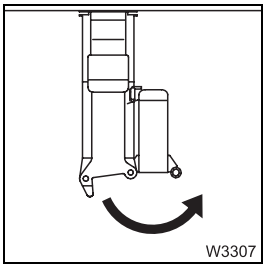
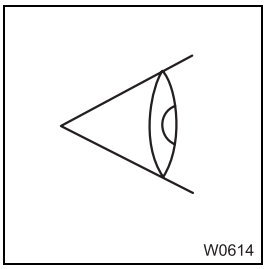



6. If the 17 m (56 ft) swing-away lattice is folded on the side:
   - Undo the connection between section 2 and the main boom in the *rear* area; ➠ p. 3 - 45.
   - Undo the connection in the *Front* area; ➠ p. 3 - 39.

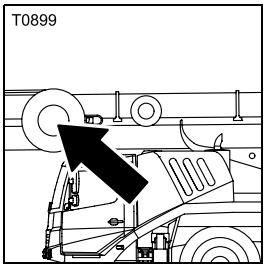
7. Set down the swing-away lattice on the separate vehicle; ➠ *Transport*, p. 2 - 6.




8. If necessary, fold in the run-up rail; ➠ p. 3 - 36.




9. Check the transport condition of the swing-away lattice; ➠ *Transport condition with removed swing-away lattice*, p. 3 - 29.




10. For the derricking swing-away lattice, insert the locking device on the hose drum; ➠ p. 3 - 33.

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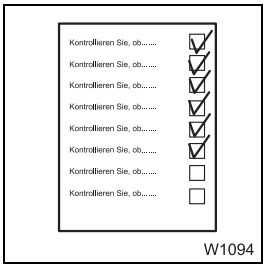
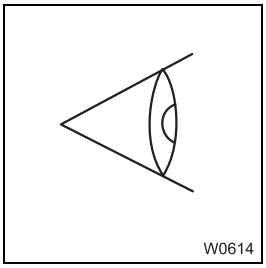
## 3.3.4 CHECKLIST: Rigging the 10 / 17 m (33 / 56 ft) swing-away lattice

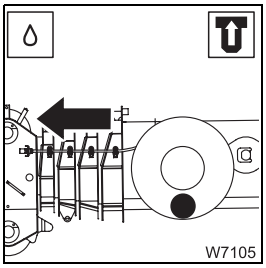
This checklist is not a complete set of operating instructions. There are accompanying operating instructions which are referred to by cross-references. **Observe the warnings and safety instructions there.**



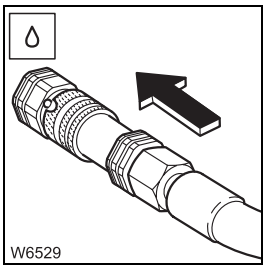

1. Rig the truck crane:
   - Rig the truck crane according to the *CHECKLIST: Rigging;* ➠ Operating instructions.
   - Before operating the crane, check according to the *CHECKLIST: Checks before crane operation*; ➠ Operating instructions.
   - Fully retract the main boom and lower it into a horizontal position.
   - Roll up the unused hoist rope onto the drum.



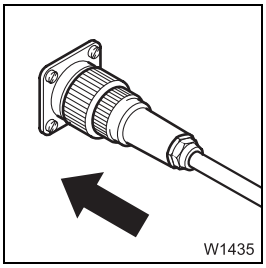

2. Check the transport condition of the swing-away lattice; ➠ *Transport condition with folded swing-away lattice,* p. 3 - 30.




3. With derricking swing-away lattice:
   - Check whether the locking device on the hose drum has been released; ➠ p. 3 - 33.
   - Bring the hydraulic hoses into the position for operating with the lattice extension; ➠ p. 3 - 34.




4. For derricking swing-away lattice, establish a hydraulic connection; ➠ p. 3 - 35.




5. Establish the electrical connection; ➠ p. 3 - 61.



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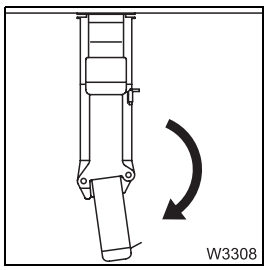
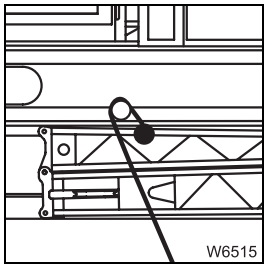
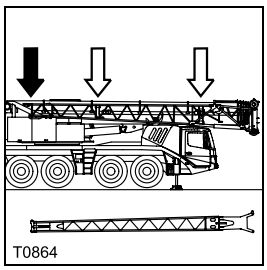



**6.** Fold out the run-up rail; ➠ p. 3 - 36.

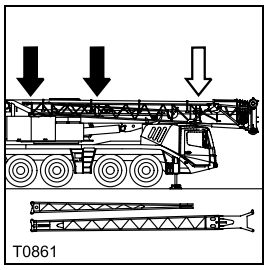



**7.** Secure the lattice extension with the guide rope; ➠ p. 3 - 27.



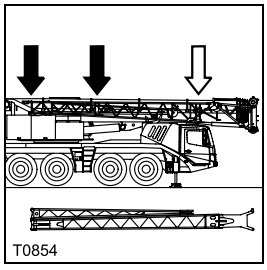

**8.** Only applies to rigging the 10 m (33 ft) swing-away lattice if only section 1 is installed.

– Undo the connection between section 1 and the main boom in the *Rear* area; ➠ p. 3 - 46.



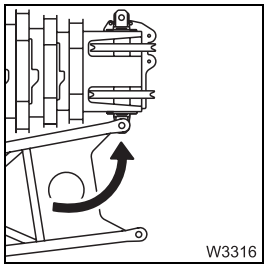

**9.** Only applies to rigging the 10 m (33 ft) swing-away lattice if section 2 is also installed.

– Bring the connection in the *Middle* area into the *section 2 / main boom* position; ➠ p. 3 - 43.
– Establish the connection between section 2 and the main boom in the *Rear* area; ➠ p. 3 - 45.
– Undo the connection between section 2 and section 1 in the *Rear* area; ➠ p. 3 - 48.




**10.** Only applies to rigging the 17 m (56 ft) swing-away lattice.

– Check whether the connection in the *Middle* area is in the *section 1 / section 2* position; ➠ p. 3 - 42.
– Check whether the connection between section 1 and section 2 in the *Rear* area has been established; ➠ p. 3 - 48.
– Undo the connection between section 2 and the main boom in the *Rear* area; ➠ p. 3 - 45.




**11.** Swing the lattice extension onto the main boom head; ➠ p. 3 - 54.



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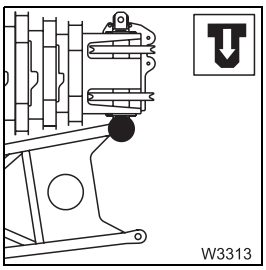
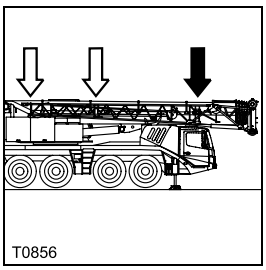
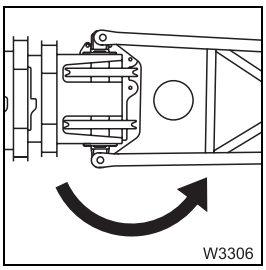


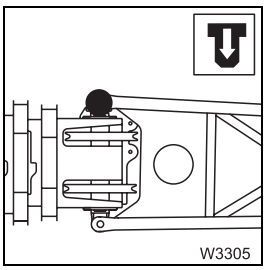

**12.** Pin section 1 onto the main boom head, on the right-hand side;
➠ p. 3 - 49.



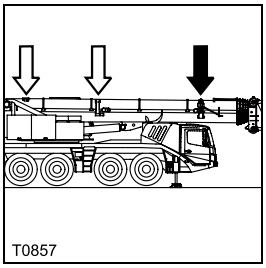

**13.** Undo the connection in the *Front* area; ➠ p. 3 - 39.




**14.** Swing the lattice extension in front of the main boom head; ➠ *When rigging – section 1*, p. 3 - 55.




**15.** Pin section 1 onto the main boom head, on left-hand side. At the same time, release the bearing points if necessary or use the hydraulic rigging aid (additional equipment);
➠ *Left-hand connection*, p. 3 - 50,
➠ *Relieving the connecting points*, p. 3 - 51.
➠ *Hydraulic rigging aid (additional equipment)*, p. 3 - 51.




**16.** Move the connection in the *Front* area into the *Unrigging* position;
➠ p. 3 - 41.

If the 10 m (33 ft) swing-away lattice is rigged – continue with **point 23.**;
➠ p. 3 - 19.



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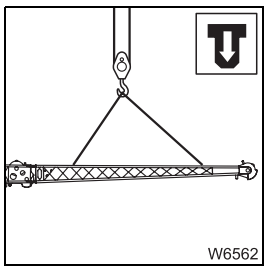
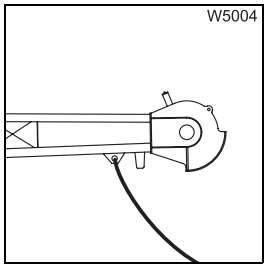
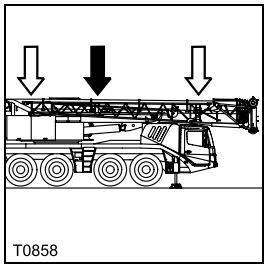



**17.** If section 2 is transported on a separate vehicle, install section 2 before section 1:
- Sling section 2; *Slinging points*, S. 2 - 5.
- Lift section 2 in front of section 1 and pin it there; ➠ p. 3 - 59.

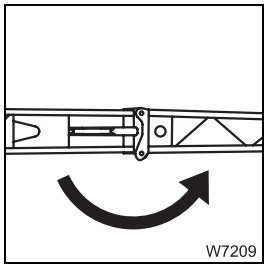
After installing section 2, continue with **point 23.**



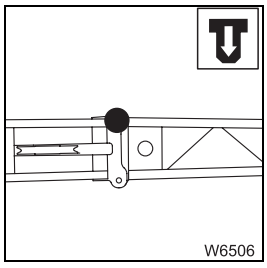

**18.** If section 2 is folded onto section 1, fasten the guide rope to the head of section 2.



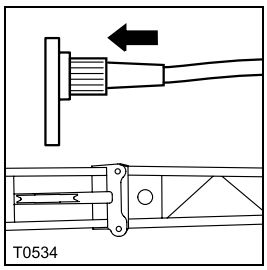

**19.** Move the connection in the *Middle* area into the *On section 1* position; ➠ p. 3 - 43.




**20.** Swing section 2 in front of section 1; ➠ *When rigging – section 2*, p. 3 - 57.




**21.** Establish the connection on the left between section 2 and section 1; ➠ *Establishing / undoing connections at the swing-away lattice*, p. 3 - 59.




**22.** Establish the electrical connection; ➠ p. 3 - 63.



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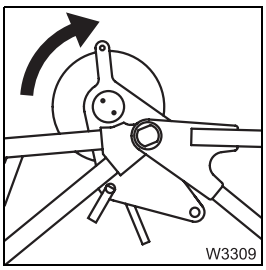
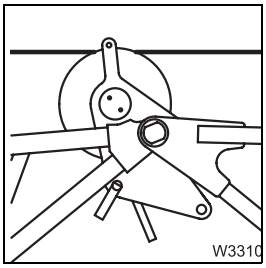
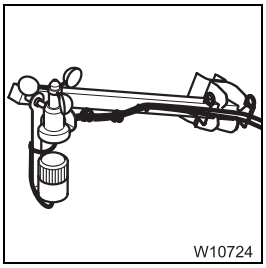


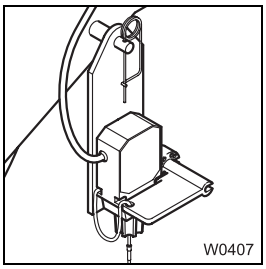

**23.** Fold out the deflection sheave at the front and rear; ➠ p. 3 - 64.



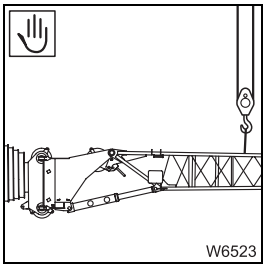

**24.** Place the hoist rope on the swing-away lattice; ➠ p. 3 - 66.



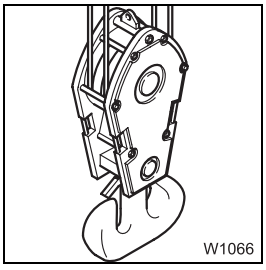

**25.** Install the anemometer and establish an electrical connection for the air traffic control light if necessary;
➠ *Installing / removing the anemometer*, p. 3 - 71,
➠ *Air traffic control light – electrical connection*, p. 3 - 73.




**26.** Install the lifting limit switch; ➠ *Installing / removing the lifting limit switch*, p. 3 - 68.




**27.** With inclinable swing-away lattice, adjust the angle, if necessary;
➠ *Setting the angle – with an auxiliary crane*, p. 3 - 79.
➠ *Setting the angle – without auxiliary crane*, p. 3 - 80.




**28.** Reeve the hoist rope on the hook block; ➠ *Possible reeving methods at the swing-away lattice*, p. 3 - 67.



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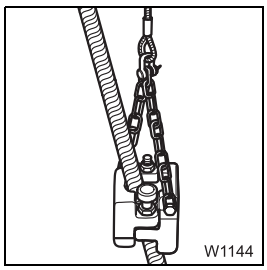
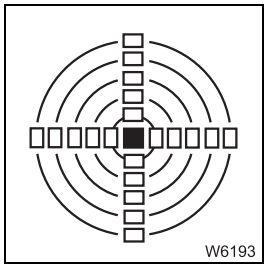
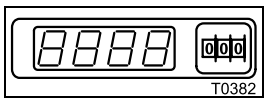


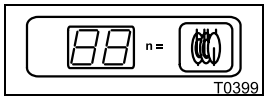

**29.** Attach the lifting limit switch weight and place it around the hoist rope; ➠ *Operating instructions* of the truck crane, *Part 2 Superstructure – Rigging work.*




**30.** Check the horizontal alignment of the truck crane and correct it, if necessary.




**31.** Enter the current rigging mode with the rigged swing-away lattice; ➠ *Setting the SLI*, p. 3 - 87.




**32.** Enter the current reeving; ➠ *Setting the SLI*, p. 3 - 87.

Further steps with swing-away lattice:

– Raise the main boom; ➠ p. 3 - 89.
– Telescope the main boom; ➠ p. 3 - 90.



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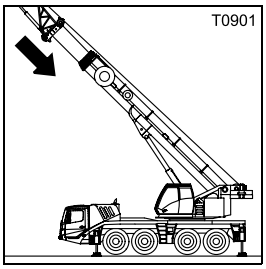
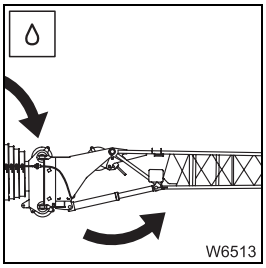
## 3.3.5 CHECKLIST: Unrigging the 10 / 17 m (33 / 56 ft) swing-away lattice

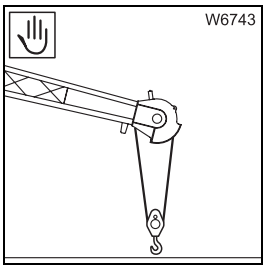
This checklist is not a complete set of operating instructions. There are accompanying operating instructions which are referred to by cross-references. **Observe the warnings and safety instructions there.**



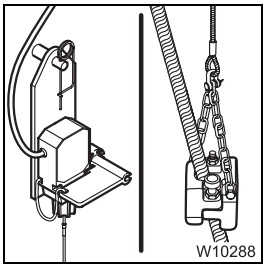

1. Fully retract the main boom; ➠ *Telescoping with rigged swing-away lattice*, p. 3 - 90.



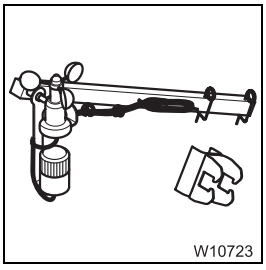

2. Only applies to the derricking swing-away lattice.
   - Raise the swing-away lattice completely; ➠ *Derricking the swing-away lattice*, p. 3 - 75.
   - Lower the main boom into a horizontal position; ➠ p. 3 - 89.




3. Only applies to the inclinable swing-away lattice.
   - Lower the main boom in order to unreeve the hook block.




4. Take off the lifting limit switch weight and remove the lifting limit switch; ➠ *Installing / removing the lifting limit switch*, p. 3 - 68.




5. If necessary, undo the electrical connection for the air traffic control light and remove the anemometer;
   ➠ *Air traffic control light – electrical connection*, p. 3 - 73,
   ➠ *Installing / removing the anemometer*, p. 3 - 71.



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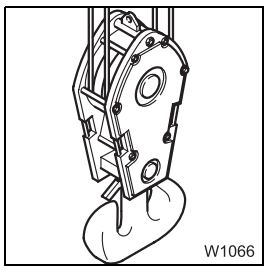
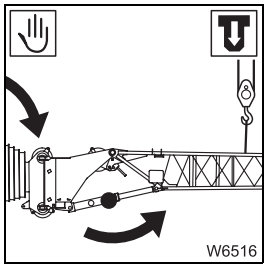
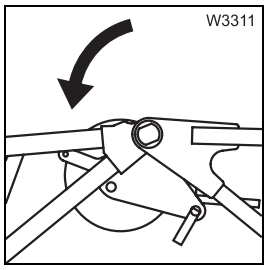



**6.** Unreeve the hoist rope and remove it from the swing-away lattice; ➠ p. 3 - 66.

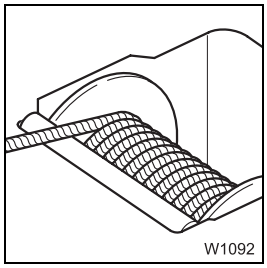



**7.** Only applies to the inclinable swing-away lattice.

– Set an angle of 0°, if necessary;
➠ *Setting the angle – with an auxiliary crane*, p. 3 - 79
➠ *Setting the angle – without auxiliary crane*, p. 3 - 80.



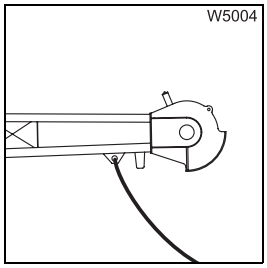

**8.** Fold in the deflection sheaves at the front and rear; ➠ p. 3 - 65.



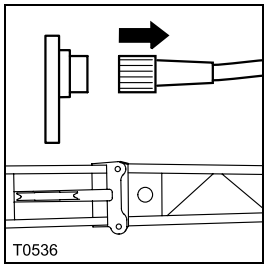

**9.** Remove the hoist rope and reel it up to the main boom head; ➠ p. 3 - 66.



If the 10 m (33 ft) swing-away lattice is rigged – continue with **point 16.**; ➠ p. 3 - 23.




**10.** Fasten the guide rope to the front of section 2.




**11.** Undo the electrical connection; p. 3 - 63.

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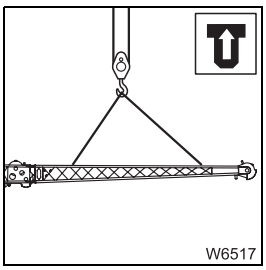
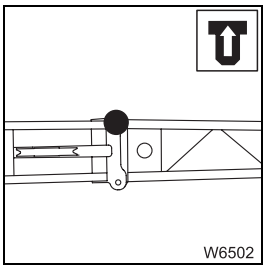


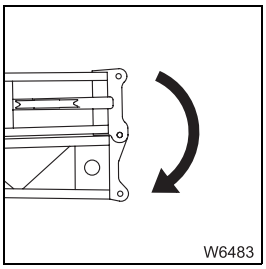

**12.** If section 2 is to be removed:

- Sling section 2 onto the auxiliary crane; ➠ *Slinging points*, p. 2 - 5.
- Remove the locking pins between section 2 and section 1; ➠ p. 3 - 59.
- Set down section 2 on the separate vehicle.

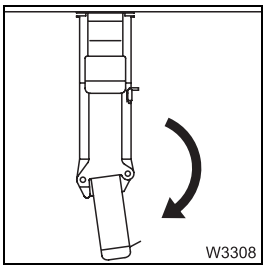
After removing section 2, continue with point 15.



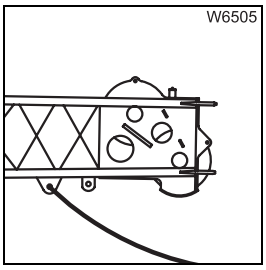

**13.** Undo the connection on the left between section 2 and section 1; ➠ p. 3 - 59.



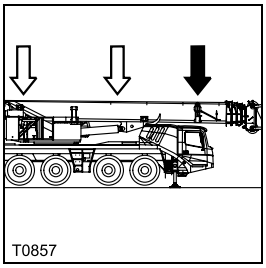

**14.** Swing section 2 to the side of section 1 and move the connection in the *Middle* area into the *Section 1 / section 2* position;
➠ *When unrigging – section 2*, p. 3 - 58,
➠ *Section 1 / section 2 position*, p. 3 - 42.




**15.** Fold out the run-up rail; ➠ p. 3 - 36.




**16.** Fasten the guide rope to the front of section 1.




**17.** Move the connection at the *Front* area into the *Unrigging* position; ➠ p. 3 - 41.



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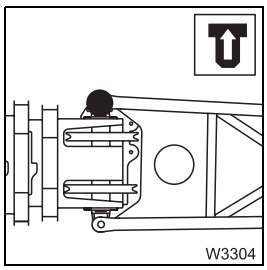
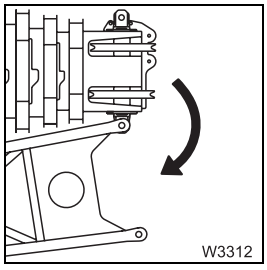



**18.** Release the connection between section 1 and the main boom head at the left of the main boom head. At the same time, release the bearing points if necessary or use the hydraulic rigging aid (additional equipment);

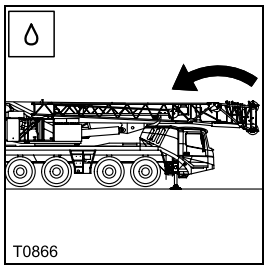
➠ *Left-hand connection*, p. 3 - 50,

➠ *Relieving the connecting points*, p. 3 - 51.

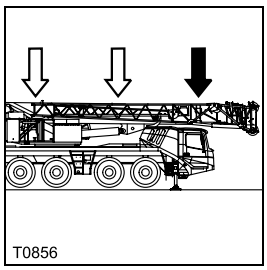
➠ *Hydraulic rigging aid (additional equipment)*, p. 3 - 51.




**19.** Swing the lattice extension to the side of the main boom with the guide rope; ➠ *When unrigging – section 1*, p. 3 - 56.

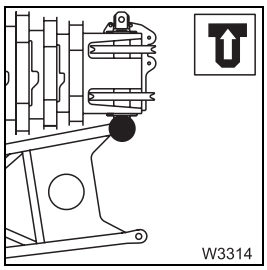



**20.** Lower the derricking swing-away lattice so that it is positioned on the run-up rail.

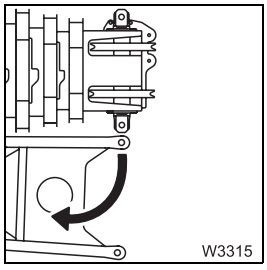



**21.** Establish the connection in the *Front* area; ➠ *Establishing the connection*, p. 3 - 38.






**22.** Undo the connection between section 1 and the main boom head on the right-hand side of the main boom head; ➠ *Right-hand connection*, p. 3 - 49.




**23.** Swing the lattice extension on the run-up rail onto the main boom; ➠ *When unrigging – section 1*, p. 3 - 56.

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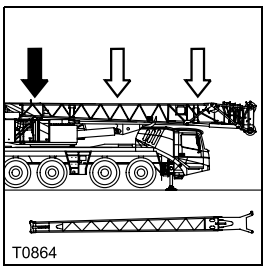
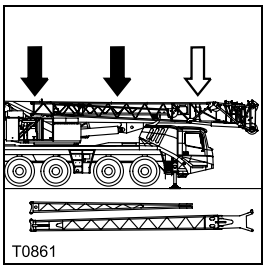
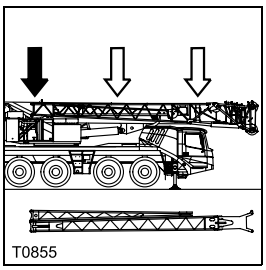


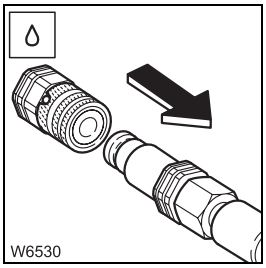

**24.** This point only applies to unrigging the 10 m (33 ft) swing-away lattice extension if only **section 1** is installed.
- Establish the connection between section 1 and the main boom in the *Rear* area; ➠ p. 3 - 46.



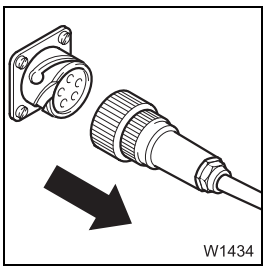

**25.** This point only applies to unrigging the 10 m (33 ft) swing-away lattice extension if **section 2** is also installed.
- Establish the connection between section 1 and section 2 in the *Middle* area; ➠ p. 3 - 42.
- Establish the connection between section 1 and section 2 in the *Rear* area; ➠ p. 3 - 48.



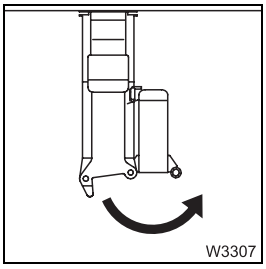

**26.** This point only applies to unrigging the 17 m (56 ft) swing-away lattice.
- Establish the connection between section 2 and the main boom in the *Rear* area; ➠ p. 3 - 44.



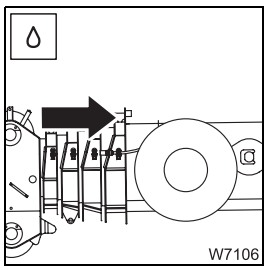

**27.** Only applies to the derricking swing-away lattice.
- Undo the hydraulic connection; ➠ p. 3 - 35.



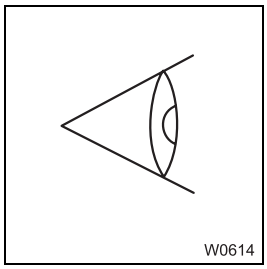

**28.** Undo the electrical connection; ➠ *Disconnecting the electrical connection*, p. 3 - 62.




**29.** Fold in the run-up rail; ➠ *Folding out / in the run-up rail*, p. 3 - 36.




**30.** Only applies to the derricking swing-away lattice:
– Move the hydraulic hoses into the main boom operation position;
➠ p. 3 - 34.




**31.** Check the transport condition of the swing-away lattice; ➠ *Transport condition with folded swing-away lattice*, p. 3 - 30.



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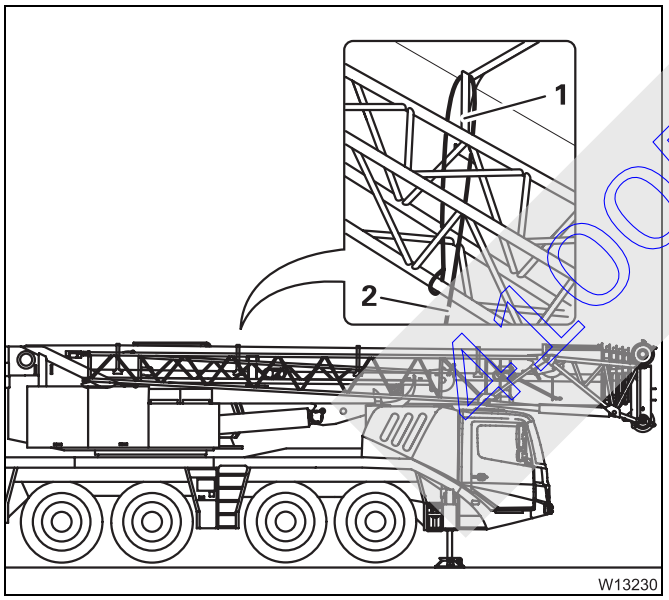
# 3.4 Description of the rigging work

## 3.4.1 Securing the swing-away lattice with a rope

If the truck crane is aligned unfavourably, the swing-away lattice can swivel around independently when you undo the last connection to the main boom.

**Risk of accidents due to the swing-away lattice swinging of its own accord**
Secure the swing-away lattice on the main boom always with a guide rope before undoing any connections.
This will prevent the swing-away lattice from swinging around of its own accord and pushing you off the carrier or injuring other persons in the slewing range.




Secure the swing-away lattice in the following manner:

- Attach a rope (**2**) to the front of the swing-away lattice.
- Guide the rope underneath the swing-away lattice, over the rope guide (**1**) on the main boom and back again.
- Have a helper hold the rope tight while you undo the last connection.

If you are alone, fasten the other end of the rope to the crane (depending on the slewing direction of the superstructure, e.g. to the outrigger beam on the rear right or to the steps of the access ladder to the carrier on the left).



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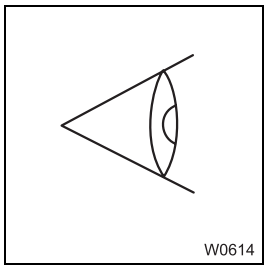
## 3.4.2 Checking the transport condition




Certain connections must be established between the sections of the swing-away lattice for transport, depending on whether the swing-away lattice is:
– Folded on the main boom for transport or
– Removed for transport

**Risk of damage to the lattice extension and the main boom**
Always put the swing-away lattice into transport condition before driving the truck crane with folded swing-away lattice or working with the main boom.
Only then is the swing-away lattice secured against slipping.
This will prevent the incompletely fastened swing-away lattice from hitting the main boom or components of the swing-away lattice from hitting each other and becoming damaged.

**Check the transport condition:**

– After unrigging the swing-away lattice, before you drive the truck crane or work with the main boom.

– After unrigging the swing-away lattice, regardless of whether you drive the truck crane, work with the main boom or whether the swing-away lattice has been removed.

– Before installation and before rigging the swing-away lattice.
The corresponding checklists require that the swing-away lattice is in transport condition.



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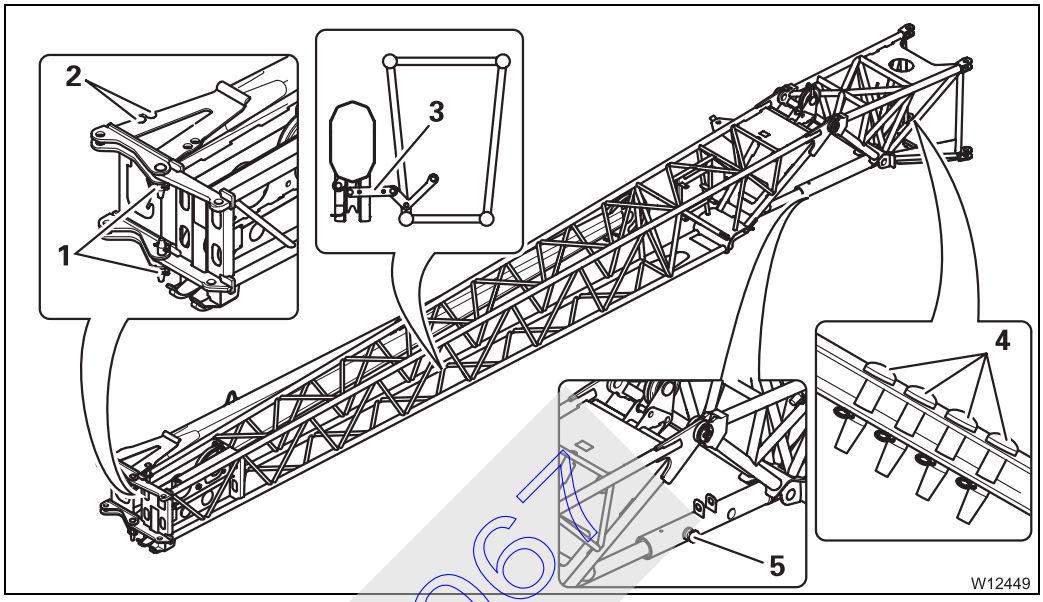
**Transport condition with removed swing-away lattice**

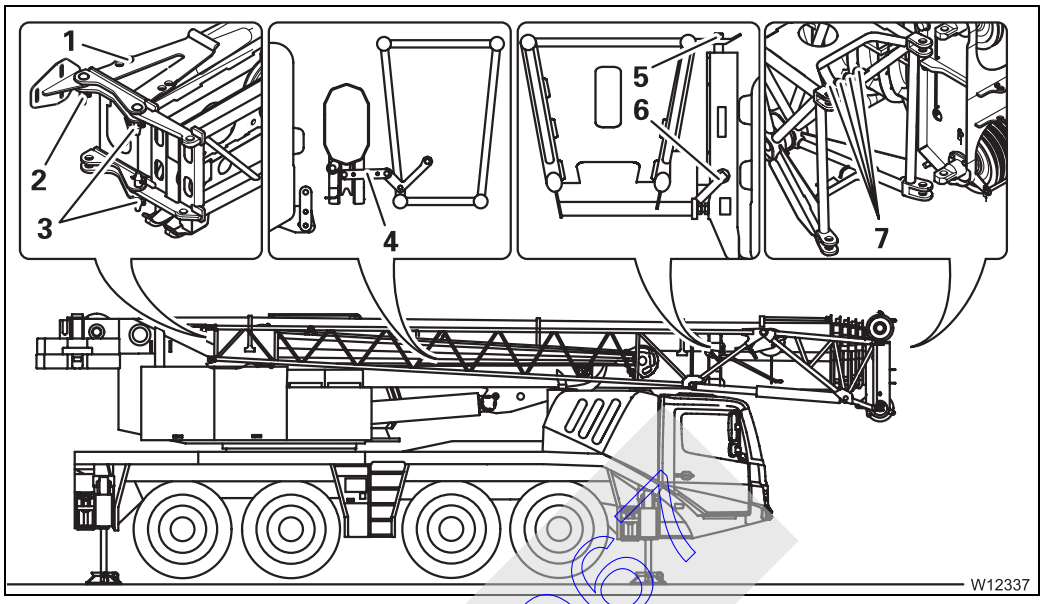
The transport condition is established once all of the following connections have been established.




- Check the following connections and establish them if necessary.
  - In the *Rear* area, the connection (**1**) between section 1 and section 2 is established; ➠ p. 3 - 48.
    The unneeded pins (**2**) are secured in the retaining sheet.
  - In the *Middle* area, the connection (**3**) is in the position *Section 1/ Section 2*; ➠ p. 3 - 42.
  - The pins (**4**) on section 1 are secured with retaining pins.
  - When using manually inclinable lattice extension, the pin (**5**) is inserted in the *0° angle* position; ➠ *Setting the angle – with an auxiliary crane*, p. 3 - 79.

**Transport condition with folded swing-away lattice**

The transport condition is established when all of the following connections have been made.




Check the connections and establish them if necessary.

**When section 1 and section 2 are folded:**

- In the *Front* area, section 1 must be engaged at the slewing axis (**5**) on the main boom and the slewing axis must be secured with the pin (**6**); ➠ *Establishing the connection*, p. 3 - 38.
- In the *Middle* area, the connection (**4**) is in the position *Section 1/ Section 2*; ➠ p. 3 - 42.
- In the *Rear* area, the connection (**2**) between section 2 and the main boom is established; ➠ p. 3 - 44.
- In the *Rear* area, the connection (**3**) between section 1 and section 2 is established; ➠ p. 3 - 48.
  The unneeded pin (**1**) is secured in the retaining sheet.
- The pins (**7**) on section 1 are secured with retaining pins.



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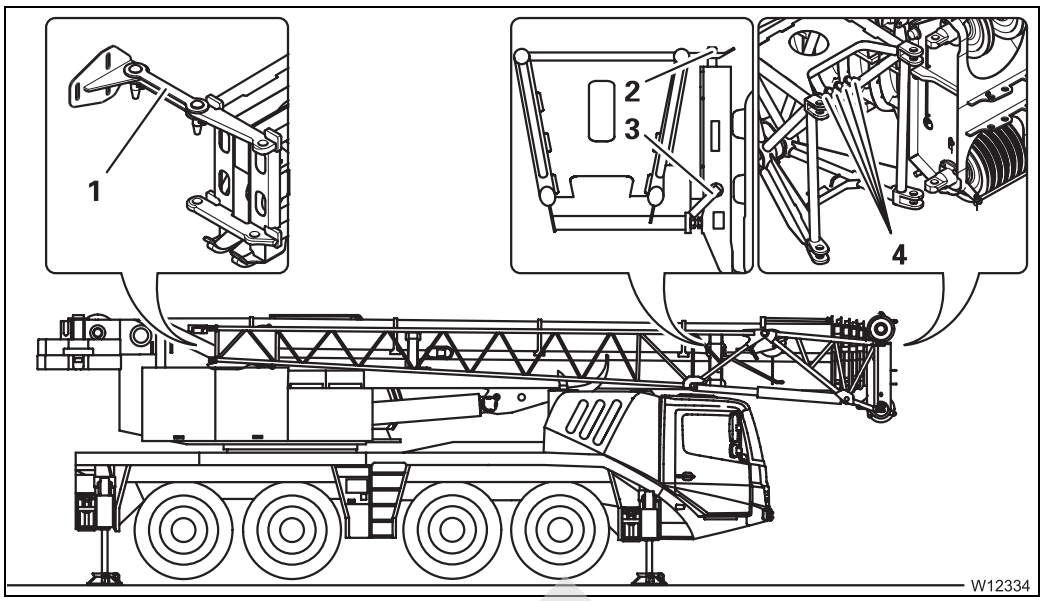
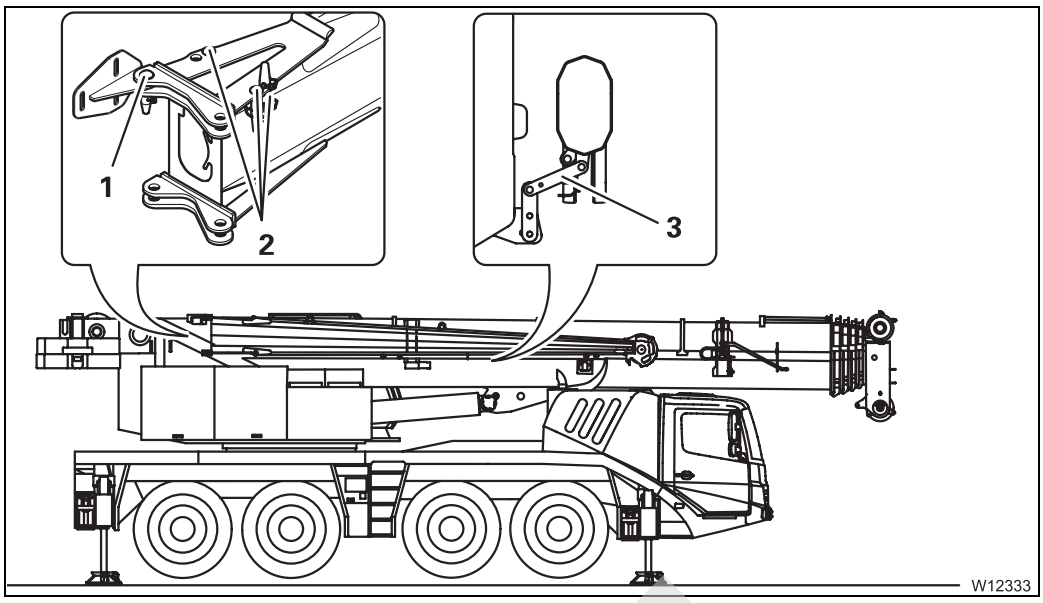



**When only section 1 is folded:**

- In the *rear* area, the connection (**1**) between section 1 and the main boom is established; ➠ p. 3 - 46.
- In the *Front* area, section 1 must be engaged at the slewing axis (**2**) on the main boom and the slewing axis must be secured with the pin (**3**); ➠ *Establishing the connection*, p. 3 - 38.
- The pins (**4**) on section 1 are secured with retaining pins.




**When only section 2 is folded:**

– In the *Middle* area, the connection (**3**) is in the position *section 2/main boom*; ➠ p. 3 - 43.

– In the *rear* area, the connection (**1**) between section 2 and the main boom is established; ➠ p. 3 - 46.
The unneeded pins (**2**) are secured in the retaining sheet.



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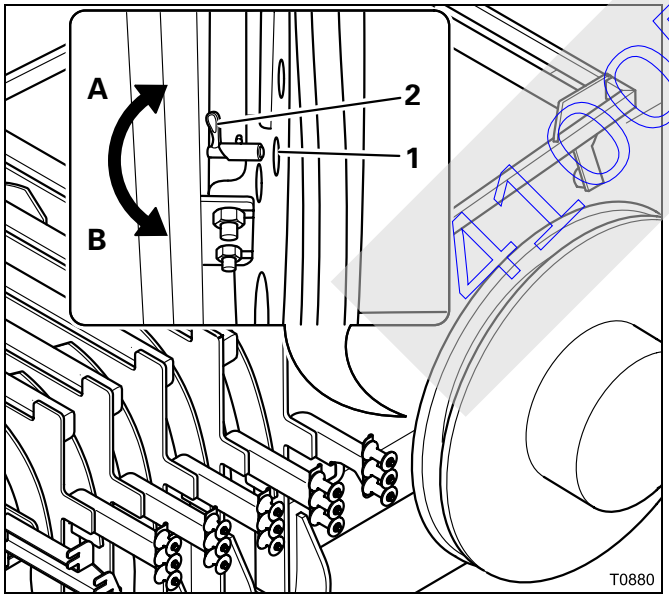
## 3.4.3 Checking the locking device on the hose drum

This section only applies to the derricking swing-away lattice.

The hydraulic supply is provided via a hose drum on the side of the main boom. The hose drum is equipped with a locking device.
The locking device must be undone for operation with the swing-away lattice.
If the hose drum has to be removed, you must first insert the locking device.

**Risk of damage to the hydraulic hoses**
Always check whether the locking device is undone before beginning operation with the lattice extension.
This will prevent the hydraulic hoses from tearing during the telescoping procedure.

**Risk of accidents due to the hose drum turning in an uncontrolled manner**
The locking device must always be engaged before the hose drum is removed. Otherwise, the hose drum will turn in an uncontrolled manner against the holder and could injure you.




Bores (**1**) are distributed along the inner flanged wheel of the hose drum. The hose drum is secured against turning by turning the spring latch (**2**) in the bore.

**Releasing the locking device**

- Turn the spring latch (**2**) to position **A**. The spring latch is **not** inserted in any of the bores (**1**).

**Engaging the locking device**

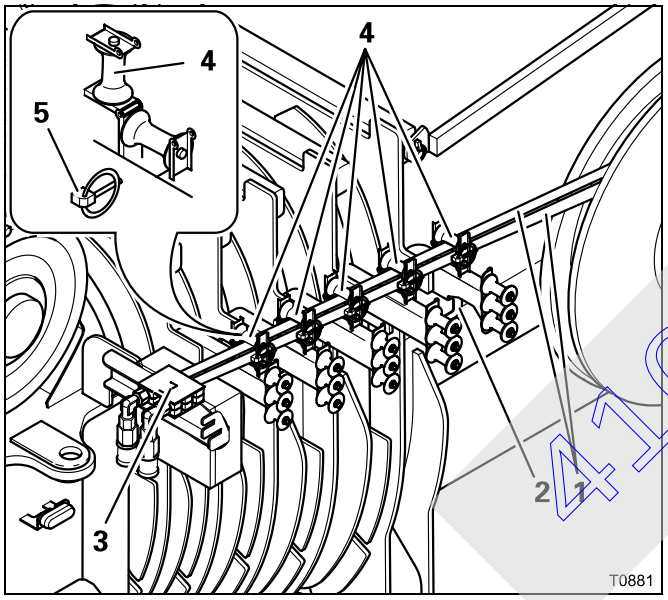
- Turn the hose drum until one of the bores is in front of the spring latch (**2**).
- Turn the spring latch (**2**) to position **B**. The spring latch is inserted in one of the bores (**1**).

## 3.4.4 Positions of the hydraulic connections

Before operating with the lattice extension, you must move the hydraulic connections into the *lattice extension operation* position.

Before working with the main boom for long periods of time, you must move the hydraulic connections into the *main boom operation* position to avoid putting the hose drum under unnecessary strain.

**Risk of accidents due to hydraulic hoses springing back**
If you detach the strain relief after the locking device has been released, you must not under any circumstances let go of the strain relief until it has been re-attached. If you let go of the strain relief, the hydraulic hoses will spring back in an uncontrolled manner due to the spring force in the hose drum and may injure persons or damage parts of the truck crane.

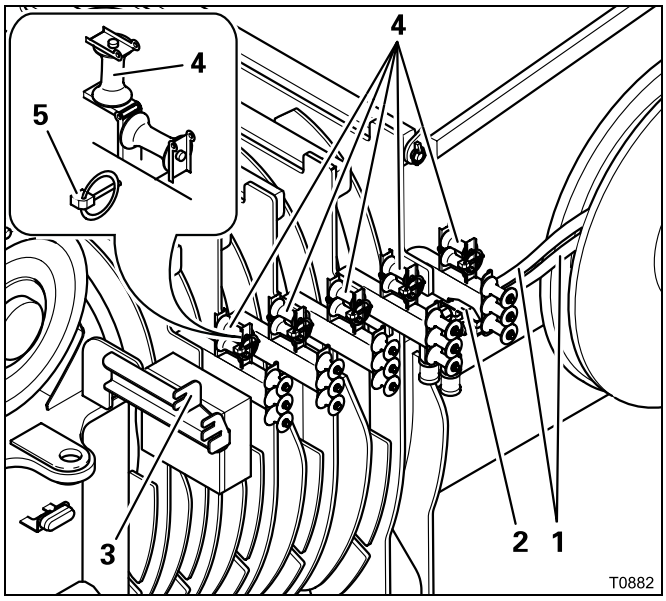



**Position for lattice extension operation**

The locking device on the hose drum must be released; ➠ p. 3 - 33.

- Undo the linchpins (**5**) and fold up the guide sheaves (**4**).
- Take the strain relief out of the holder (**2**) and pull the hydraulic hoses (**1**) towards the main boom head.
- Attach the strain relief to the holder (**3**).
- Fold down the guide sheaves (**4**) and secure them with the linchpins (**5**).






**Position for main boom operation**

The locking device on the hose drum must be released; ➠ p. 3 - 33.

- Undo the linchpins (**5**) and fold up the guide sheaves (**4**).
- Detach the strain relief from the holder (**3**) and attach it to the holder (**2**).
- Fold down the guide sheaves (**4**) and secure them with the linchpins (**5**).

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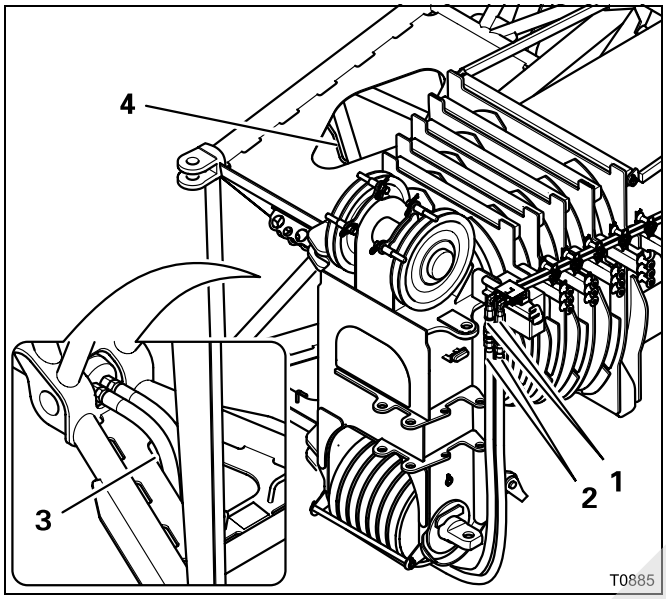
## 3.4.5 Establishing / disconnecting the hydraulic connection

This section only applies to the derricking swing-away lattice.

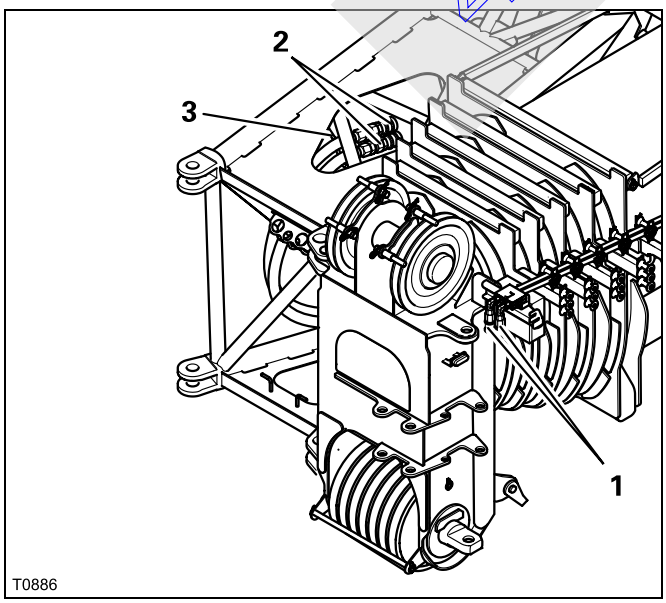



### Establishing the hydraulic connection

- If necessary, bring the connections (**1**) into the position for lattice extension operation; p. 3 - 34.
- Remove the hose lines (**2**) from the holder (**4**).
- Lay the hose lines though the lower opening (**3**) in section 1 under the boom head towards the left-hand side.
- Remove the protective caps from the connections (**1**) and connect the hose lines (observe the colour code).

**Risk of damage to the hydraulic hoses**
Lay the hydraulic hoses under the main boom head in such a way that they hang freely. Take care that the hoses are not torn off when folding the lattice extension. This will prevent damage to the hydraulic hoses.






### Undoing the hydraulic connection

- Remove the hose lines (**2**) from the connections (**1**).
- Close the hose lines and the connections (**1**) with the protective caps.
- Secure the hoses on the holder (**3**) on section 1.

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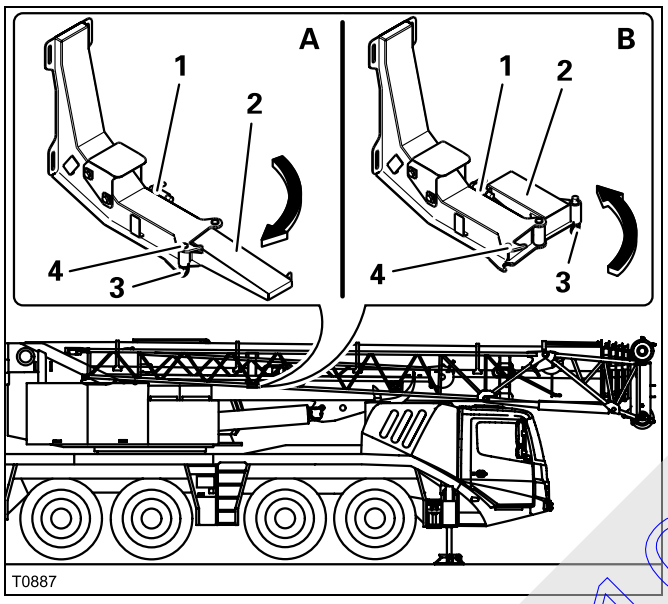
## 3.4.6 Folding out / in the run-up rail

The run-up rail is folded out for rigging and folded back in again for on-road driving after unrigging.

**Risk of accidents by exceeding the specified overall width**
Always fold in the run-up rail before driving. With the run-up rail folded out, the overall width specified for on-road driving is exceeded.




**(A) – Folding out the run-up rail**

- Release the spring latch (**1**).
- Fold out the run-up rail (**2**) until the locking bar (**3**) engages in the bore hole (**4**).

**(B) – Folding in the run-up rail**

- Pull the locking bar (**3**) downwards against the spring force, and out of the bore hole (**4**).
- Fold out the run-up rail (**2**) slightly and let go of the locking bar (**1**).
- Fold in the run-up rail completely.
- Secure the run-up rail with the spring latch (**1**).



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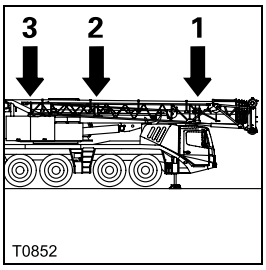
## 3.4.7 Connections with folded swing-away lattice




If the swing-away lattice is swivelled to the main boom, there are areas on the main boom where various connections must be loosely established during rigging:

**1** *Front* area, in front of the locking point at 100%

**2** *Middle* area, in front of the locking point at 50%

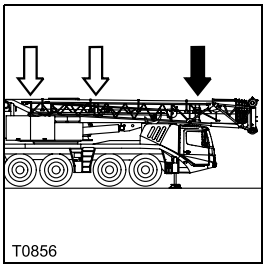
**3** *Rear* area, under the side panelling

Depending on the rigging mode and job, different sections of the swing-away lattice have to be connected one below the other or to the main boom basic section.

**Risk of accidents due to falling parts**
Secure the pins both in the bearing points and the holders always with retaining pins to prevent unsecured pins from coming loose, falling down and causing injuries.

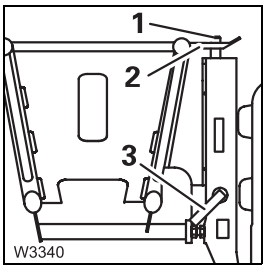
**Connections in the front area**

There is a connection between section 1 and the main boom in the *Front* area.




This connection must be established if the lattice extension is folded on the side of the main boom during unrigging or the installation.

The connection must be undone if the lattice extension is rigged or removed.




The connection consists of the pin (**3**), the slewing axis (**1**) on the basic section and the holder (**2**) on section 1.



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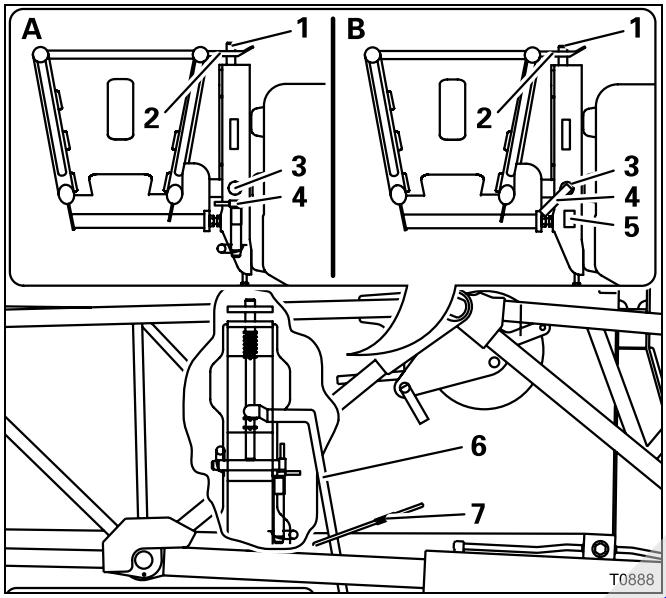
### Establishing the connection

**Risk of accidents due to falling lattice extension**
Attach section 1 to the main boom always with the pin (**4**). If section 1 is only attached at the slewing axis, the lattice extension could slip out of the slewing axle and fall down (e.g. when working with the main boom).

To establish the connection, the lattice extension must be on the run-up rail.




- (**A**) – Check whether the pin (**4**) has been pulled out of the bore (**3**).
- Check whether the lever (**6**) is under the rest (**7**).
- Swing the lattice extension on the run-up rail sideways onto the main boom.

The slewing axle (**1**) is first pressed down by the holder (**2**) and then engages in the holder.

- (**B**) – Check whether the slewing axle (**1**) protrudes out of the top of the holder (**2**).
- Undo the retaining pin and take the pin (**4**) out of the holder (**5**).
- Insert the pin (**4**) through the bores (**3**).
- Secure the pin (**4**) with the retaining pin.

The connection is now established. The pin (**4**) prevents the retraction of the slewing axis and fastens section 1 to the main boom.



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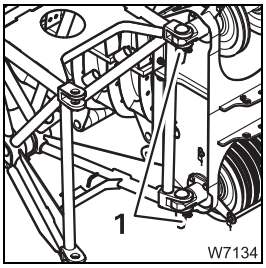
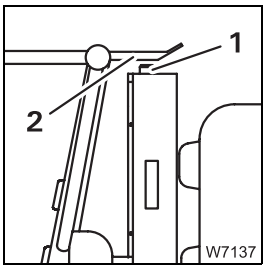
### Undoing the connection




- Check whether section 1 is pinned to the main boom head at the front right with both pins (**1**); ➠ p. 3 - 49.
- Secure the lattice extension with a guide rope; ➠ p. 3 - 27.




– **With derricking swing-away lattice**

- Raise the lattice extension completely; ➠ p. 3 - 75.
- Check whether the holder (**2**) has been completely raised out of the slewing axis (**1**). If this is the case, the connection is undone.

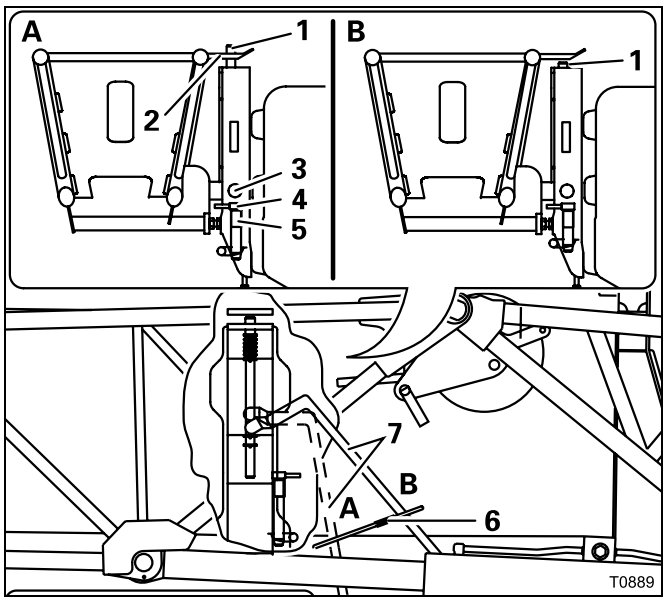
If the slewing axis remains partially inside the holder, you must retract the slewing axis, as when rigging an inclinable lattice extension.

– **With inclinable swing-away lattice**

With the inclinable lattice extension, you must retract the slewing axis as follows.

**Risk of accidents due to falling swing-away lattice**
Before undoing the connection, make sure section 1 is pinned to the front right of the main boom head.
This will prevent the swing-away lattice from falling down and injuring you or other persons when undoing the connection.

**Risk of accidents due to the swing-away lattice swinging of its own accord**
Secure the lattice extension always with a guide rope on the main boom before retracting the slewing axis.
This will prevent the lattice extension from slipping off the run-up rail of its own accord, swinging around and knocking you off the carrier or injuring other persons in the slewing range.




- (**A**) – Pull the pin (**4**) out of the bore (**3**) and insert it in the holder (**5**).
- Secure the pin (**4**) with the retaining pin.

You can now retract the slewing axis (**1**) so that it no longer protrudes out of the holder (**2**).

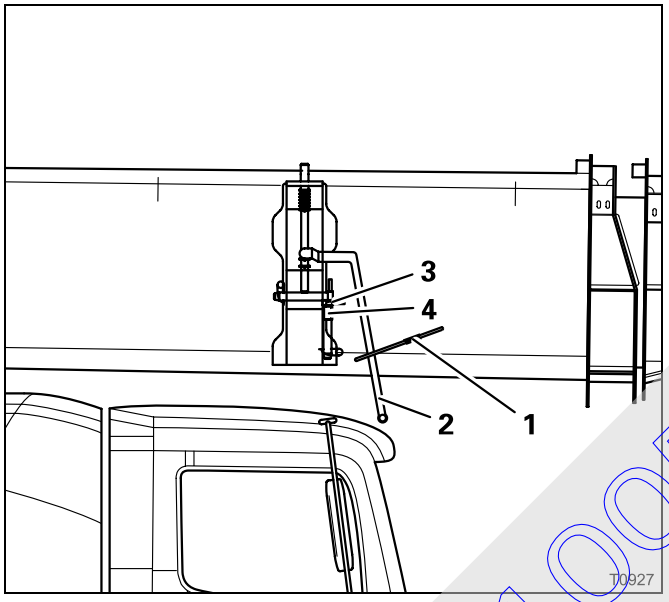
- (**B**) – Pull the lever (**7**) upwards against the spring force into position (**B**).
- Set down the lever (**7**) on the rest (**6**).

  The slewing axis (**1**) is now retracted and you can swing the lattice extension in front of the main boom head.

### Bringing the *Front* connection into the *Unrigging* position

Before you fold the lattice extension to the side during unrigging, you must bring the *Front* connection into the *Unrigging* position.

**Risk of crushing due to the swinging lattice extension**
Start the following work only if the lattice extension is pinned in front of the main boom head or secured against swinging around.
This will prevent the lattice extension from swinging inadvertently to the side of the main boom and crushing you.




The following prerequisites must be fulfilled for unrigging:

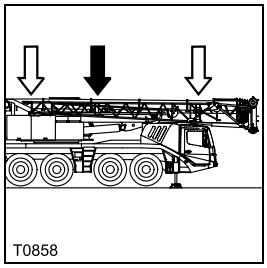
– The pin (**3**) is secured in the holder (**4**).

– The lever (**2**) is underneath the rest (**1**).

- Insert the pin (**3**) in the holder (**4**), if necessary, and secure it with the retaining pin.
- If necessary, raise the lever (**2**) sideways from the rest (**1**) and ease the spring force slightly.

The *Front* connection is now in the *Unrigging* position.

**Connections in the Middle area**




The connections in the *Middle* area consist of a locking bar with two pins.

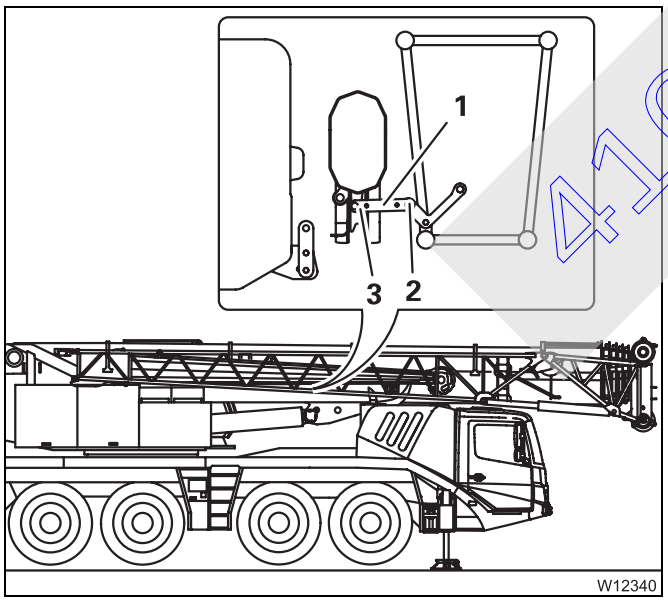
Depending on the position of the locking bar, different sections are connected with one another. There are three positions:

– Position Section 1/section 2
– Position Section 2/main boom
– Position At section 1

### Section 1 / section 2 position

This position must be established:

– When rigging the 17 m (56 ft) swing-away lattice – before the swing-away lattice is swung in front of the main boom head
– When unrigging the 17 m (56 ft) swing-away lattice extension – after swinging section 2 onto section 1
– When unrigging the 10 m (33 ft) swing-away lattice – if section 2 is installed on the main boom
– When removing the 17 m (56 ft) swing-away lattice




- Pin the locking bar (**1**) to section 2 with the pin (**2**).
- Pin the locking bar (**1**) to section 2 with the pin (**3**).
- Secure the pins with the retaining pins.



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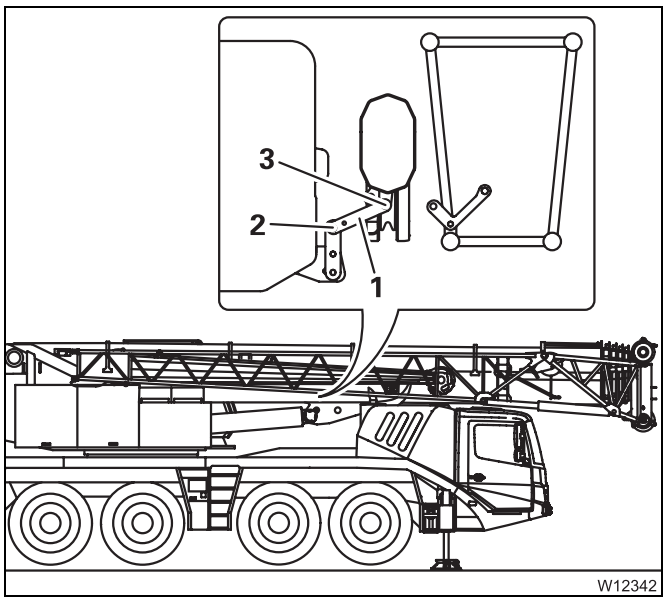


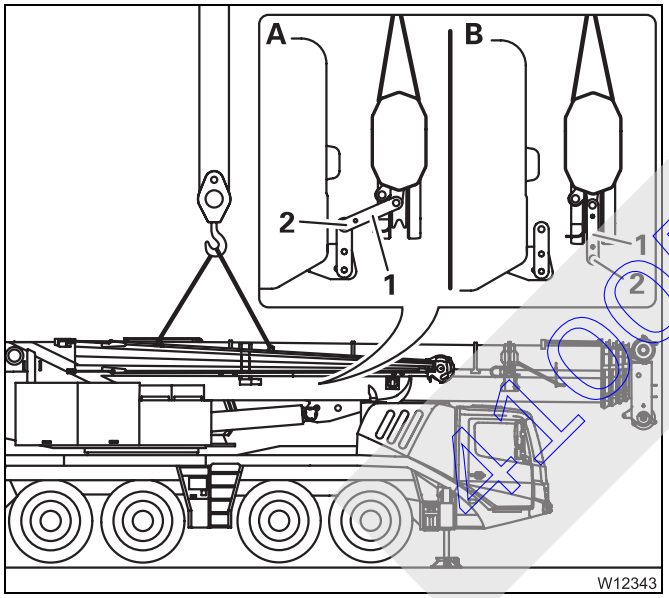

### Establishing the section 2 / main boom position

This position must be established:

– When rigging the 10 m (33 ft) swing-away lattice – if section 2 is installed.

– Before the removal – if only section 1 is to be removed.

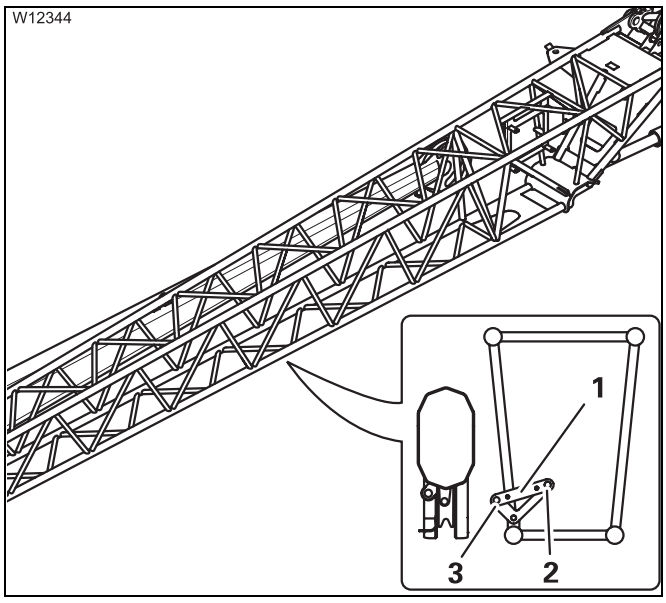
- Pin the locking bar (**1**) to the main boom with the pin (**2**).
- Pin the locking bar (**1**) to section 2 with the pin (**3**).
- Secure the pins with the retaining pins.




### Undoing the section 2 / main boom position

This position must be undone if only section 2 is to be installed and removed.

- Sling section 2; ➠ p. 2 - 5.
- (**A**) – Pull out the pin (**2**).
- (**B**) – Fold down the locking bar (**1**).
- Insert the pin (**2**) in the locking bar (**1**).
- Secure the pin (**2**) with the retaining pin.




### On section 1 position

This position must be established:

– When rigging the 17 m (56 ft) swing-away lattice – before section 2 is swung in front of section 1.

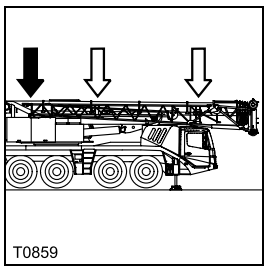
- Pin the locking bar (**1**) to section 1 with the pins (**2**) and (**3**).
- Secure the pins with the retaining pins.

**Connections in the rear area**

There are three different connections in the *Rear* area:

– The connection between section 2 and the main boom
– The connection between section 1 and the main boom
– The connection between section 1 and section 2

### Connection between section 2 and the main boom

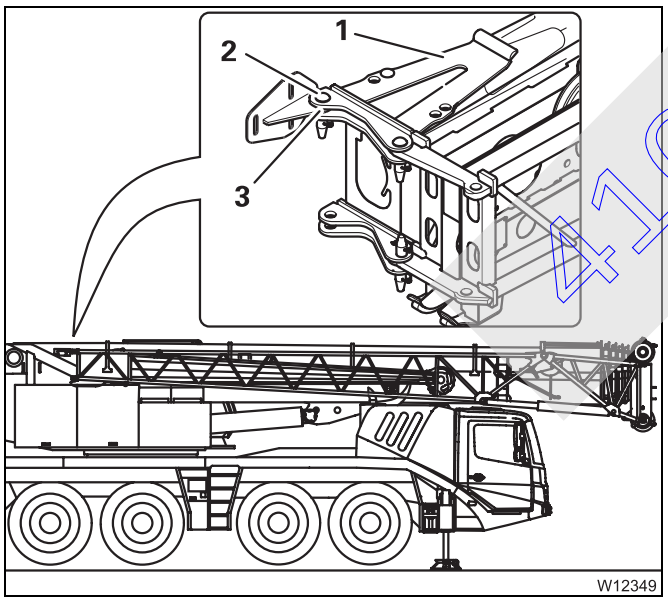



The connection must be disconnected:

– When rigging the 17 m (56 ft) swing-away lattice
– When removing the 17 m (56 ft) swing-away lattice
– When removing section 2

The connection must be established:

– When unrigging the 17 m (56 ft) swing-away lattice
– For operation with the 10 m (33 ft) swing-away lattice if section 2 is installed
– When removing section 2




**Establishing the connection**

- Align the connecting point (**3**).
- Take the pin (**2**) out of the holder (**1**).
- Insert the pin (**2**) in the connecting point (**3**) and secure it with the retaining pin.



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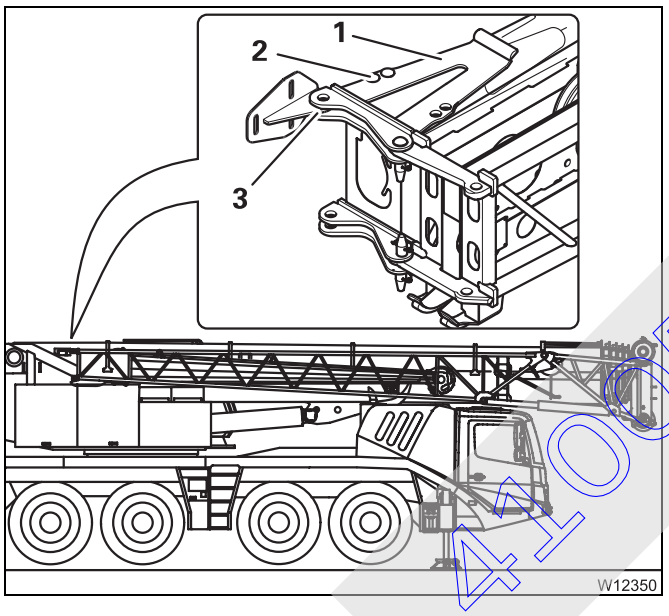
### Undoing the connection – with 17 m (56 ft) swing-away lattice

- Before undoing the connection, check whether:
  - The connection in the *Front* area has been established; ➠ p. 3 - 38
  - The connection at the pivot point between section 2 and section 1 has been established; ➠ p. 3 - 48

**Risk of accidents due to falling parts**
Before undoing the connection, make sure all of the aforementioned connections have been established.
In this way you will prevent either section 2 or section 1 or both of them from falling down when the connection is undone.




- Pull the pin (**2**) out of the connecting point (**3**).
- Insert the pin in the holder (**1**).
- Secure the pin with the retaining pin.



### Undoing the connection – when removing section 2

- Check whether section 2 is slung at the centre of gravity; ➠ p. 2 - 5.

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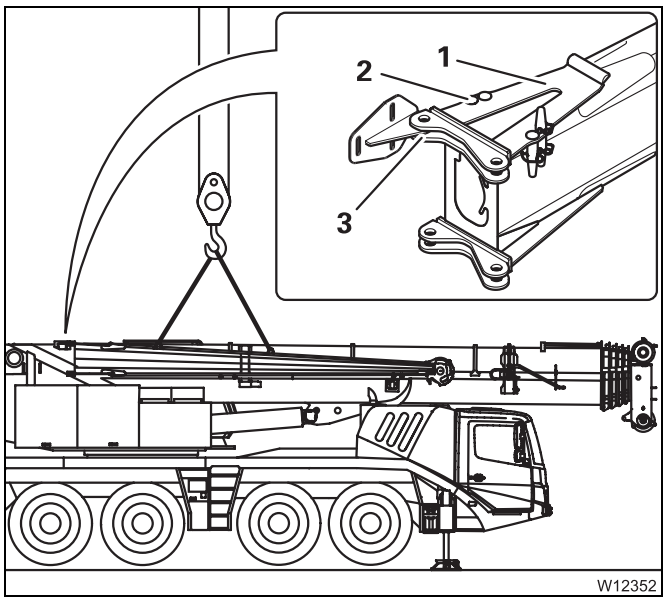
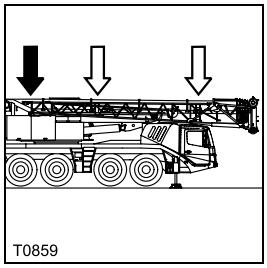



- Pull the pin (**2**) out of the connecting point (**3**).
- Insert the pin (**2**) in the holder (**1**).
- Secure the pin with the retaining pin.

**Connection between section 1 and the main boom**

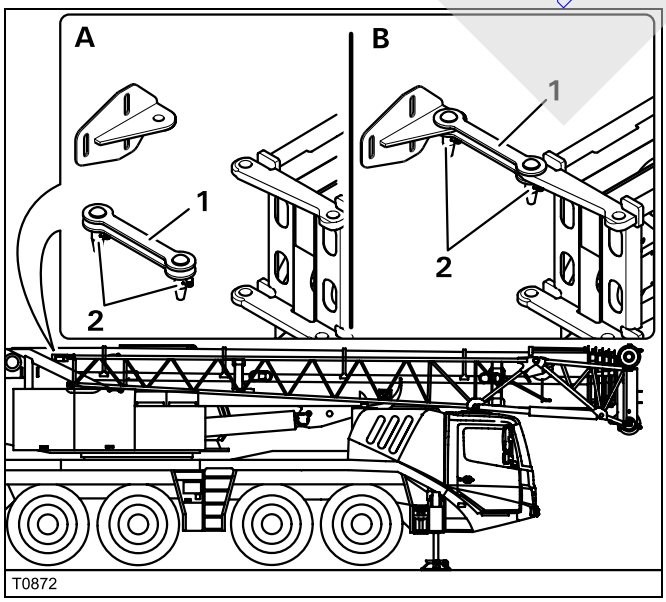
This connection is not available at truck cranes supplied with a 17 m (56 ft) swing-away lattice.




This connection must be established if the 10 m (33 ft) swing-away lattice is folded to the side during unrigging.

The connection must be undone before the 10 m (33 ft) swing-away lattice is swung towards the main boom head, if section 2 has been removed.






**Establishing the connection**

The correct original position is reached once the connection in the *Front* area has been established; ➠ p. 3 - 38.

- (**A**) – Take the pins (**2**) out of the retaining strut (**1**).
- (**B**) – Fasten the retaining strut (**1**) to the main boom with a pin (**2**).
- Fasten the retaining strut (**1**) to section 1 with the other pin (**2**).
- Secure the pins with the retaining pins.

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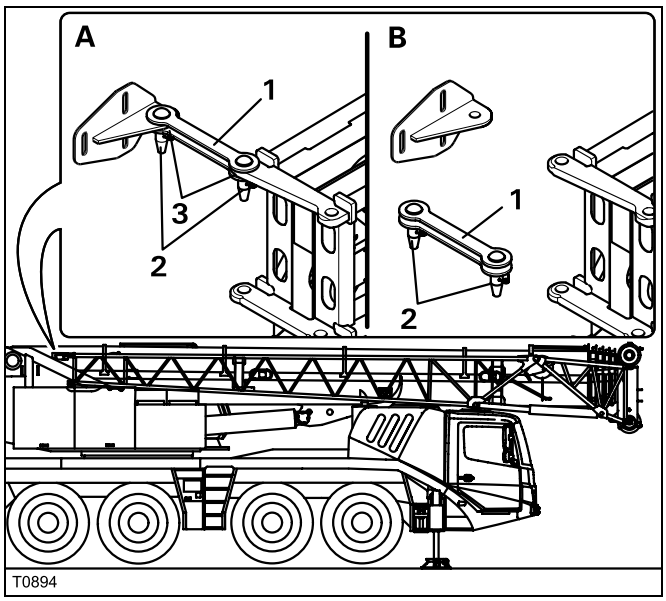
### Undoing the connection

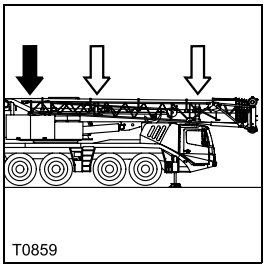
- Check whether the connection in the *Front* area has been established; ➠ p. 3 - 38.




- (**A**) – Pull the pins (**2**) out of the connecting points (**3**).
- Remove the retaining strut (**1**).
- (**B**) – Insert the pins (**2**) in the retaining strut (**1**).
- Secure the pins with the retaining pins.
- Stow the retaining strut with the pins for crane operation (e.g. in the storage box).

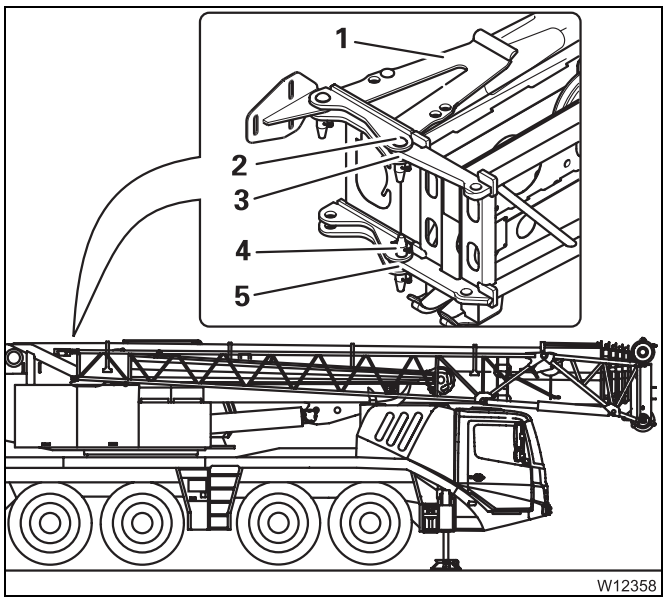
### Connection between section 1 and section 2

All information in this section only applies to the operation of the 10 m (33 ft) swing-away lattice extension if section 2 is installed.




This connection is established after the 10 m (33 ft) swing-away lattice has been swung to the side of the main boom during unrigging.

The connection is disconnected before the 10 m (33 ft) swing-away lattice is swung towards the main boom during rigging.



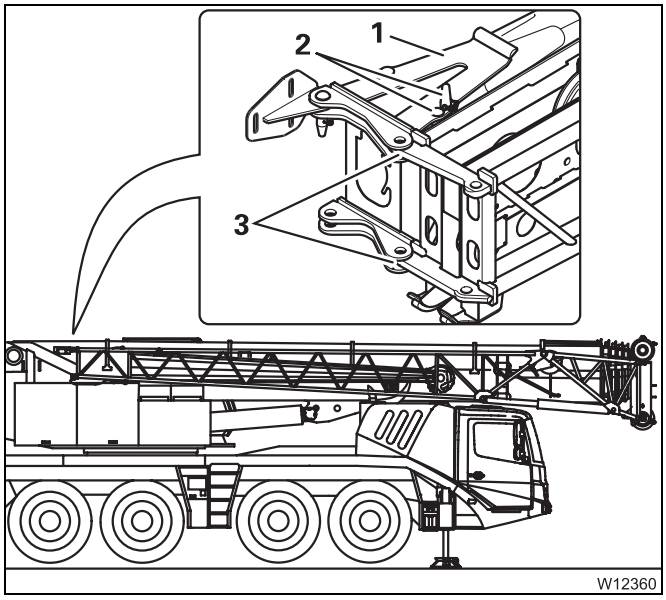

### Establishing the connection

- Pull the conical pin (**4**) and another pin (**2**) out of the holder (**1**).
- Insert the pin (**2**) in the upper connecting point (**3**).
- Insert the conical pin (**4**) in the lower connecting point (**5**).
- Secure the pins (**2**) and (**4**) with the retaining pins.

### Undoing the connection

- Before undoing the connection, check whether:
  - The connection in the *Front* area has been established; ➠ p. 3 - 38
  - The connection in the *Middle* area is in the *Section 2 / main boom* position; ➠ p. 3 - 43
  - The connection between section 2 and the main boom has been established in the *Rear* area; ➠ p. 3 - 46.

**Risk of accidents due to falling parts**
Before undoing the connection, make sure all of the afore-mentioned connections have been established.
In this way you will prevent either section 2 or section 1 or both of them from falling down when the connection is undone.




- Pull the pins (**2**) out of the connecting points (**3**).
- Insert the pins in the holder (**1**).
- Secure the pins with the retaining pins.



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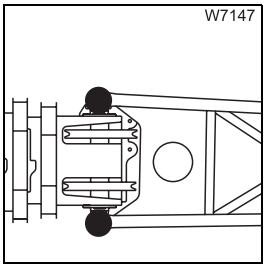
## 3.4.8 Connections on the left and right-hand side of the main boom head



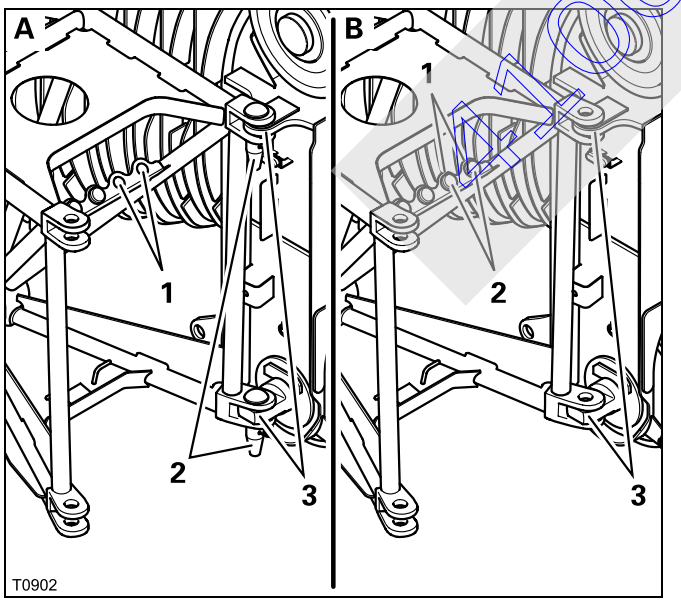

The connections must be established after the swing-away lattice has been swivelled in front of the main boom head during rigging.

The connections must be undone to allow the swing-away lattice to be swung to the side of the main boom during unrigging.

If the pins are unable to be inserted or pulled out, relieve the strain on the connecting points; p. 3 - 51.

### Right-hand connection

**Risk of accidents due to falling lattice extension**
Make sure the connection in the *Front* area has been established before you undo the connection on the right-hand side. This will prevent the lattice extension from falling down and injuring you or other persons when undoing the connection.




**(A) – Establishing the connection**

- Swing the swing-away lattice to the main boom until the connecting points (**3**) are in line.
- Pull the pins (**2**) out of the holders (**1**).
- Insert the pins in the connecting points (**3**) and secure them with retaining pins.

**(B) – Undoing the connection**

The swing-away lattice has been swung towards the main boom.

- Check whether the connection in the *Front* area has been established; p. 3 - 38.
- Pull the pins (**2**) out of the connecting points (**3**).
- Insert the pins in the holders (**1**) and secure them with retaining pins.



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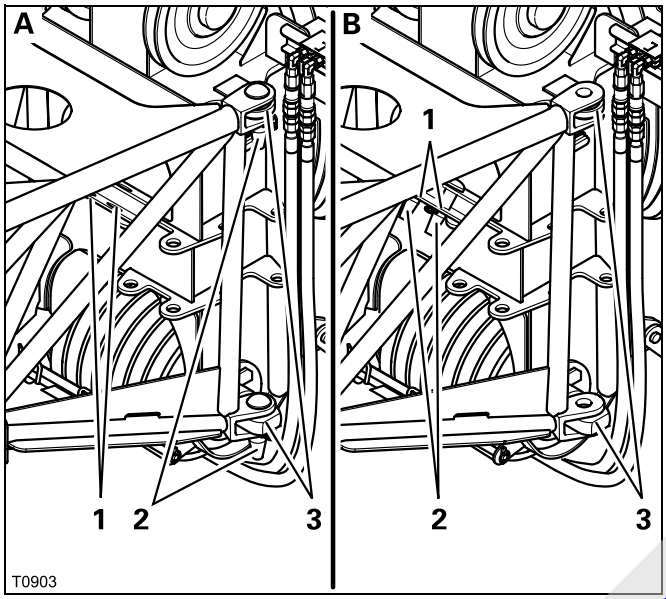
## Left-hand connection

**Risk of accidents due to the lattice extension swinging of its own accord**
Secure the swing-away lattice always with a guide rope before undoing any connections.
This will prevent the lattice extension from swinging around of its own accord and causing injury to you or other persons.




**(A) – Establishing the connection**

- Swing the swing-away lattice to the main boom until the connecting points (**3**) are in line.
- Pull the pins (**2**) out of the holders (**1**).
- Insert the pins in the connecting points (**3**) and secure them with retaining pins.

**(B) – Undoing the connection**

- Secure the swing-away lattice with a guide rope before undoing the connection; ▶ p. 3 - 27.
- Pull the pins (**2**) out of the connecting points (**3**).
- Insert the pins in the holders (**1**) and secure them with retaining pins.



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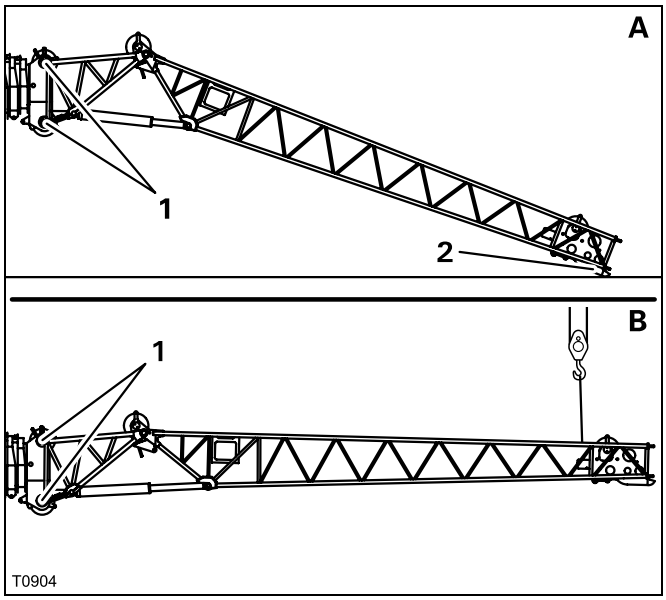
**Relieving the connecting points**

Proceed in the following manner to relieve the strain on the connecting points:



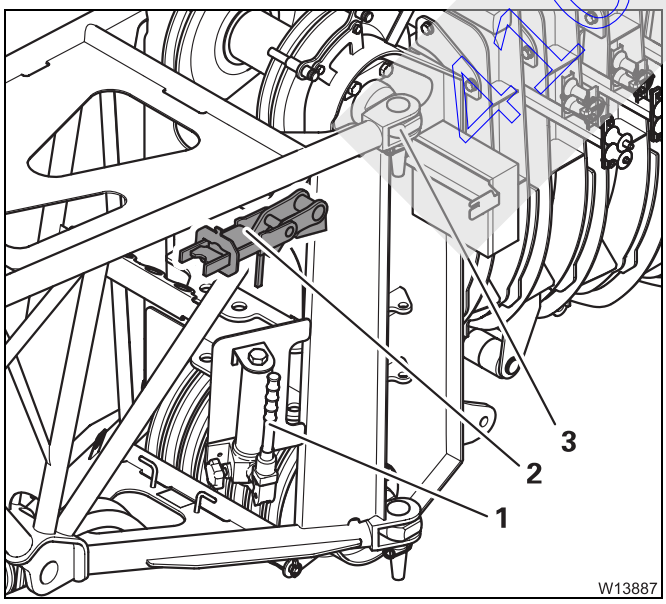

**(A) – With derricking swing-away lattice**

- Lower the swing-away lattice until it is with the skids (**2**) on the ground (if necessary, override the lifting limit switch).
- Continue the lowering procedure carefully until the connecting points (**1**) are in line or the pins have been relieved; ➠ *Derricking the swing-away lattice*, p. 3 - 75.

**(B) – With inclinable swing-away lattice**

- Sling the swing-away lattice with an auxiliary crane.
- Carefully raise the swing-away lattice until the connecting points (**1**) are in line or the pins have been relieved.

**Hydraulic rigging aid (additional equipment)**




The hydraulic cylinder is operated with the hand pump (**1**) to pull a swing-away lattice toward the main boom during rigging and unrigging.

**When rigging:**
– Align the bores in the connecting point (**3**); the pin can be inserted.

**When unrigging:**
– The pin on the connecting point (**3**) is relieved.

**Falling hazard if ladder is set up incorrectly**
Do not lean the ladder in the area of the swing-away lattice. You will fall when the swing-away lattice is swivelled. Lean the ladder only in the area of the main boom.



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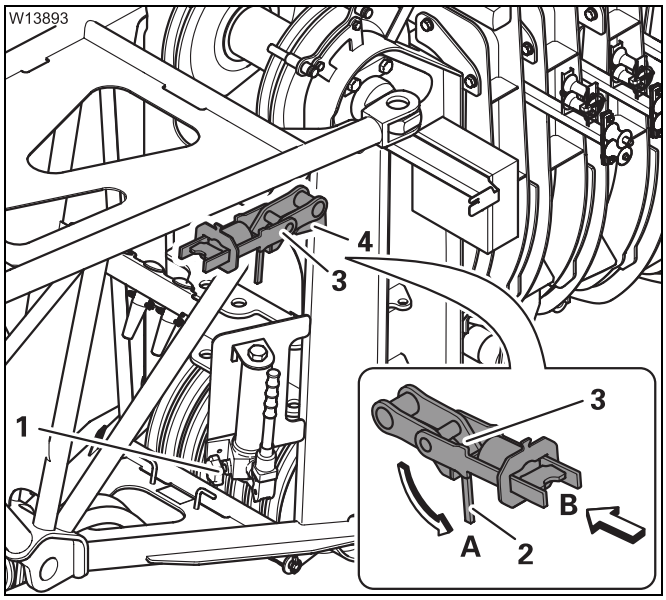
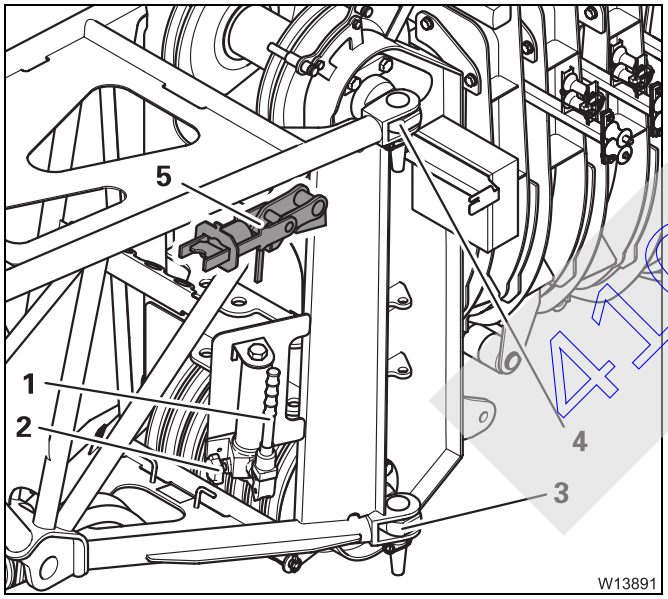
## Rigging




### Rigging position

- Open the valve (**1**).
- Place the lever (**2**) in position (**A**).
- Press the pull rod (**3**) manually as far as it will go in direction (**B**).
- Close the valve (**1**).
- Swivel the swing-away lattice in front of the main boom head.
  In end position, the pull rod (**3**) falls onto the hook (**4**).




### Establishing connections

- Fit the pin into the connecting point (**3**) and secure it.
- Move the lever (**1**) forward and back again. The ram of the hydraulic cylinder (**5**) is extended. Move the lever (**1**) until the bores on the connecting point (**4**) align.
- Fit the pin into the connecting point (**4**) and secure it.
- Open the valve (**2**).



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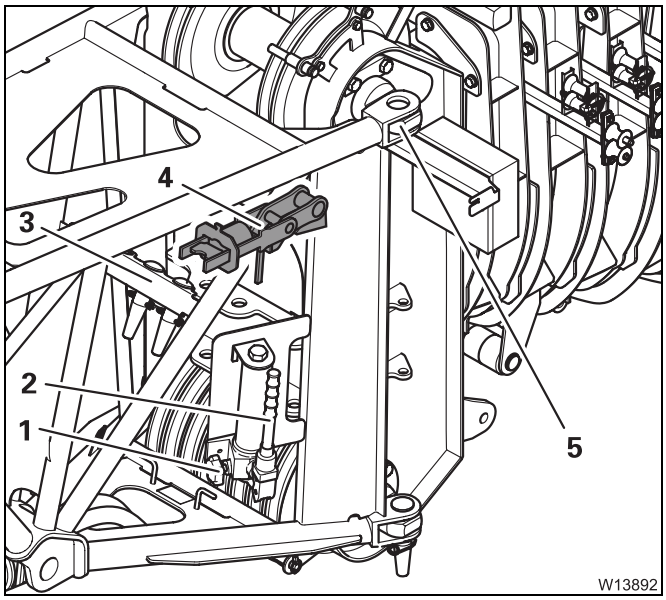
## Unrigging

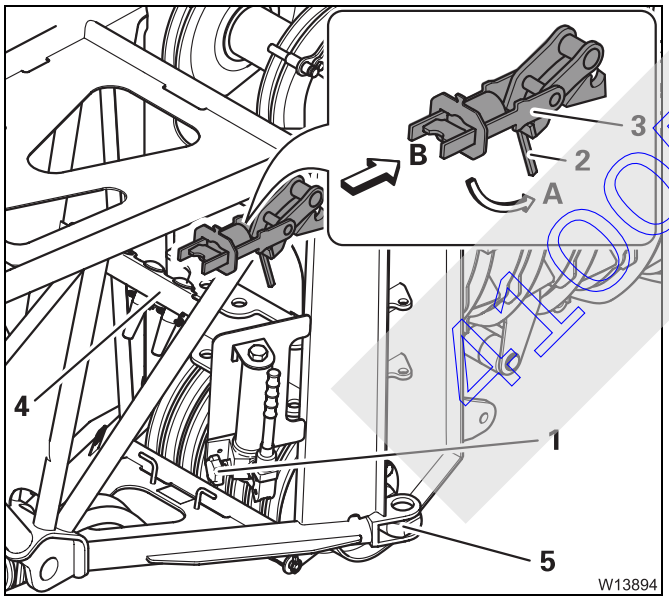



- First pull the pin out of the connecting point (**5**).

If the pin cannot be pulled, take the load off the pin.

### Taking load off the pin

- Close the valve (**1**).
- Move the lever (**2**) forward and back again. The ram of the hydraulic cylinder (**4**) is extended. Move the lever (**2**) until the pin on the connecting point (**5**) is relieved.
- Unplug the pin from the connecting point (**5**), plug it into holder (**3**) and secure it.
- Slowly open the valve (**1**).




### Unrigging position

- Place the lever (**2**) in position (**A**).

If the lever (**2**) cannot be put in position (**A**):

- Check that the valve (**1**) is open.
- Press the pull rod (**3**) manually as far as it will go in direction (**B**).

- Unplug the pin from the connecting point (**5**), plug it into holder (**4**) and secure it.

The swing-away lattice can now be swivelled onto the side of the main boom.



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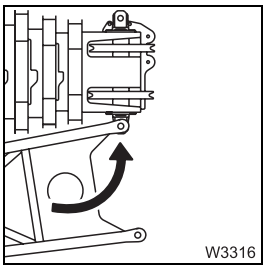
## 3.4.9 Swinging the swing-away lattice towards the main boom head




This section describes the slewing of the swing-away lattice

– Onto the main boom head when rigging
– Onto the main boom when unrigging

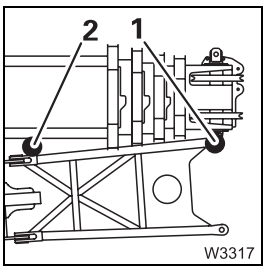
**Prerequisites**

– The swing-away lattice is in transport position with the swing-away lattice folded on the side; ➠ p. 3 - 30.
– The connection in the *Front* area has been established; ➠ p. 3 - 38.
– In the *Rear* area, either the connection between section 2 and the main boom **or** between section 1 and section 2 has been undone, depending on the swing-away lattice required; ➠ p. 3 - 45.
– The connection in the *Middle* area is in the position required for the necessary swing-away lattice; ➠ p. 3 - 42.

**Risk of accidents due to falling swing-away lattice**
Make sure the connection in the *Front* area has been established before you swing the lattice extension towards the main boom head.
This will prevent the swing-away lattice from falling down during swivelling and causing injury to you or other persons.

**Swinging the lattice extension**

Only swing the swing-away lattice once all of the mentioned prerequisites have been fulfilled.




When swinging, the swing-away lattice rolls onto the run-up rail, turns around the slewing axis (**2**) in the *Front* area and makes contact at the connecting points (**1**) at the front.

- When **rigging**, pull the swing-away lattice away from the main boom at the back until it makes contact at the front and the connecting points (**1**) are in line.
- When **unrigging**, push the swing-away lattice on the run-up rail onto the main boom at the rear until it engages on the slewing axis, and insert the pin; ➠ *Establishing the connection*, p. 3 - 38.



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## 3.4.10 Swinging the swing-away lattice during rigging

**When rigging – section 1**

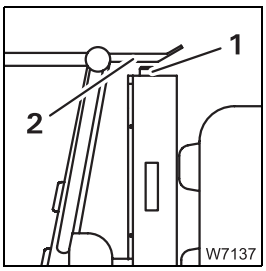
When rigging the 10 m (33 ft) or 17 m (56 ft) swing-away lattice, you must swing section 1 in front of the main boom head.

- Check that the following conditions are met:
  - The connection on the right-hand side of the main boom has been established; ➠ p. 3 - 49.
  - The lattice extension is secured with a guide rope to the front of section 1; ➠ p. 3 - 27.
  - The connections have been undone which, according to the checklist titled *Rigging the 10 m (33 ft) / 17 m (56 ft) swing-away lattice*, have to be undone for the swing-away lattice currently installed before swinging; ➠ p. 3 - 16, point 8. to point 13.

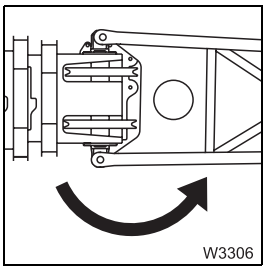
**Risk of accidents due to the swing-away lattice swinging of its own accord**
Secure the swing-away lattice always with a guide rope before swinging it. Make sure no persons or objects are within the slewing range of the swing-away lattice and swing out the swing-away lattice from the base always with the guide rope.



**With hydraulically derricking swing-away lattice**




- Carefully raise the lattice extension completely from the ground with the hand-held control; ➠ p. 3 - 75.
  - If the holder (**2**) on section 1 has now been completely lowered out of the slewing axis (**1**), the lattice extension starts to swing.
  - If the holder (**2**) still reaches into the slewing axis (**1**), you must undo the connection in the *Front* area; ➠ p. 3 - 39.




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

If you are alone and have attached the guide rope to the crane when securing, the swing-away lattice now only swings until the guide rope is tight. You can now swing the swing-away lattice in front of the main boom head with the guide rope.

You may have to initiate the swinging procedure by pulling the guide rope.

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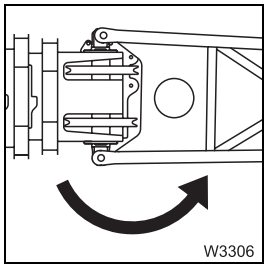
**With manually inclinable swing-away lattice**

- Check whether the connection in the *Front* is undone; ➠ p. 3 - 39.

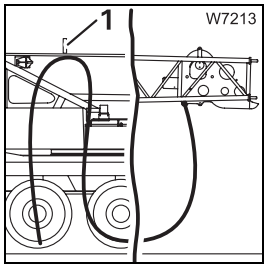



- Pull the swing-away lattice from the run-up rail on the ground by the guide rope and swing it in front of the main boom head.

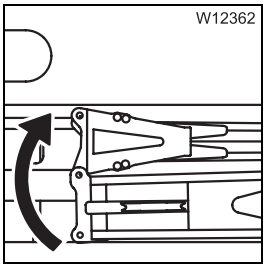
**When unrigging – section 1**

When unrigging the 10 m (33 ft) or 17 m (56 ft) swing-away lattice, you must swing section 1 towards the main boom from the side.

**Risk of accidents due to the swing-away lattice swinging of its own accord**
Secure the swing-away lattice always with a guide rope before swinging it. Make sure no persons or objects are within the slewing range of the swing-away lattice and swing out the swing-away lattice from the base always with the guide rope.




- Fasten a guide rope to the front of section 1 and lay the guide rope over the clamp (**1**) at the rear of the main boom.
- Check in the *Front* area whether the slewing axis is in the position for unrigging; ➠ p. 3 - 39.



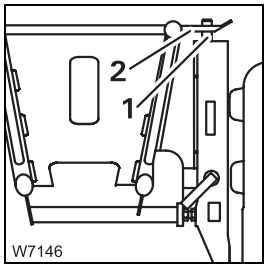

- Swing the swing-away lattice to the main boom from the side.

– **With derricking swing-away lattice**

  - Lower the swing-away lattice until it is resting on the run-up rail.

– **With inclinable swing-away lattice**

  - Pull the swing-away lattice onto the run-up rail.




- Pull the swing-away lattice closely enough towards the main boom for the holder (**2**) to reach into the slewing axis (**1**).
- Insert the pin (**1**) in the *Front* area and secure it with the retaining pin; ➠ p. 3 - 38.



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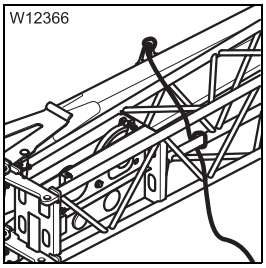
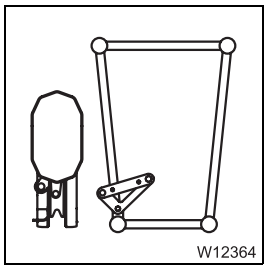
**When rigging – section 2**

When rigging the 17 m (56 ft) swing-away lattice, you must also swing section 2 in front of section 1.

**Risk of accidents due to section 2 swinging of its own accord**
Secure section 2 always with a guide rope before you undo the connection between section 1 and section 2 and only position the ladder on the left side of section 1.
In this way you will prevent section 2 from swinging round of its own accord and knocking you off the ladder when the connection is undone.



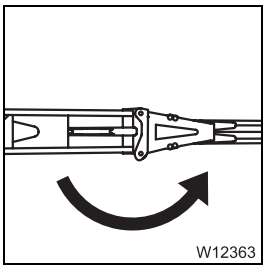

- Fasten a guide rope to the front of section 2.
- Secure section 2 against swinging round.
  Have a helper hold the guide rope tight or fasten it to the bottom of section 1.



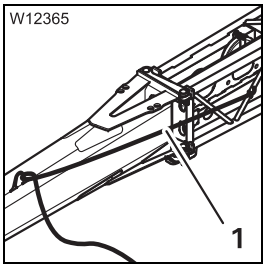

- In the *Middle* area, bring the connection into the *On section 1* position;
  ➠ p. 3 - 43.



**Risk of accidents due to section 2 swinging**
Make sure no persons or objects are within the slewing range of the swing-away lattice and swing out the swing-away lattice from the base always with the guide rope.




- Swing section 2 in front of section 1 with the guide rope.
- Secure section 2 against swinging around.
  Have a helper hold the guide rope tight.




- If you are alone, secure section 2 to on the left-hand side to section 1 with a second guide rope (**1**) to prevent it from swinging around.
- Establish the left-hand connection between section 2 and section 1;
  ➠ p. 3 - 59.

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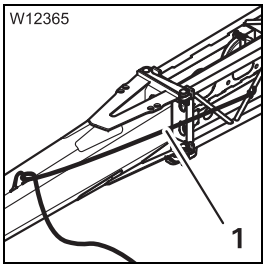
**When unrigging – section 2**

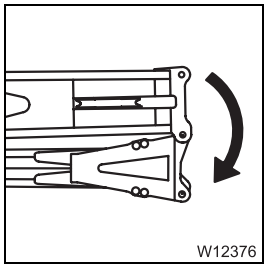
When unrigging the 17 m (56 ft) swing-away lattice, you must swing section 2 to section 1 from the side.

Check whether the electrical connection between section 1 and section 2 has been undone before you swing section 2 to section 1. It is difficult to access the electrical connection after swinging section 2.



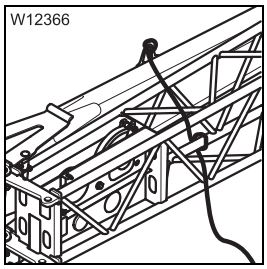

- Secure section 2 against swinging around.
  Have a helper hold the guide rope tight.
- If you are alone, secure section 2 to on the left-hand side to section 1 with a second guide rope (**1**) to prevent it from swinging around.
- Undo the left-hand connection between section 2 and section 1;
  p. 3 - 59.

**Risk of accidents due to section 2 swinging**
Make sure no persons or objects are within the slewing range of the swing-away lattice and swing out the swing-away lattice from the ground always with the guide rope.

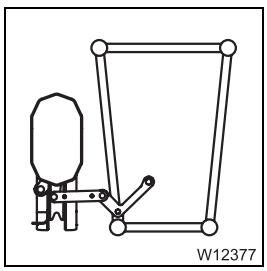



- Swing section 2 to the side of section 1 with the guide rope.

**Risk of accidents due to section 2 swinging of its own accord**
Secure section 2 always with a guide rope before you establish the connection between section 1 and section 2 and only position the ladder on the left-hand side of section 1.
In this way you will prevent section 2 from swinging round of its own accord and knocking you off the ladder.




- Secure section 2 against swinging around.
  Have a helper hold the guide rope tight or fasten it to the bottom of section 1.




- Move the connection in the *Middle* area into the *Section 1 / section 2* position;
  p. 3 - 42.



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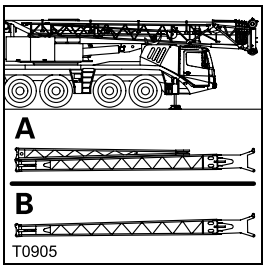
## 3.4.11 Establishing / undoing connections at the swing-away lattice



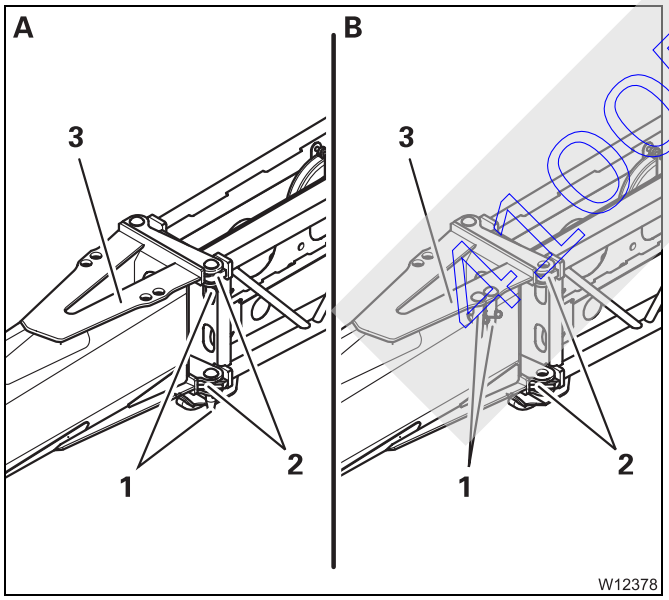

(**A**) – If section 1 and section 2 are folded on the side for transport, you only need to establish and undo the connection on the **left-hand side**.

(**B**) – If only section 1 is folded on the side for transport and section 2 has been removed for transport, you must establish and undo the connections on **both sides**.

**Section 1 and section 2 installed**

You can relieve the connecting points if necessary; ➠ p. 3 - 51.

**Risk of accidents due to section 2 swinging of its own accord**
Always secure section 2 with a guide rope and only position the ladder on the left-hand side of section 1. In this way you will prevent section 2 from swinging around of its own accord and knocking you off the ladder.




**(A) – Establishing the connection**

The connection is established after slewing section 2 in front of section 1.

- Pull the pins (**1**) out of the retaining sheet (**3**).
- Insert the pins (**1**) in the connecting points (**2**) and secure them with retaining pins.

**(B) – Undoing the connection**

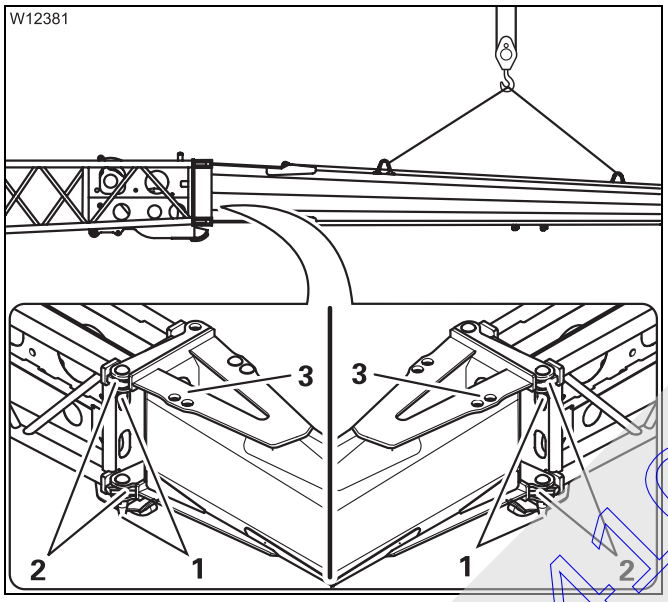
The connection is undone before section 2 is folded onto the side of section 1.

- Remove the pins (**1**) from the connecting points (**2**).
- Insert the pins (**1**) in the retaining sheet (**3**) and secure them with retaining pins.

## Only section 1 installed

**Danger of crushing due to section 2 swinging**
Always secure section 2 with a guide rope from the ground before establishing or undoing the connection.
In this way you will prevent the swinging lattice extension from knocking you off the ladder, or yourself from being crushed between the sections of the swing-away lattice.

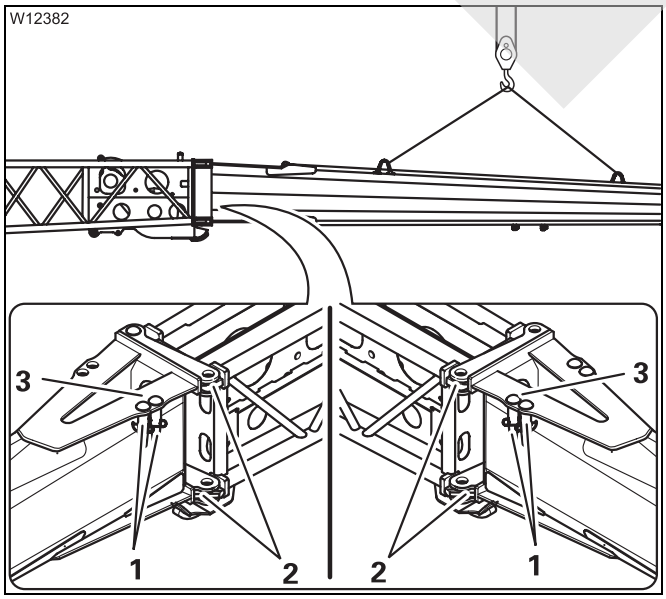
- Fasten a guide rope to section 2.
- Sling section 2 onto an auxiliary crane; ➠ *Slinging points*, p. 2 - 5.




### Establishing a connection

- Align section 2 so that the connecting points (**2**) in line.
- Pull the pins (**1**) out of the retaining sheet (**3**).
- Insert the pins (**1**) in the connecting points on both sides (**2**) and secure them with retaining pins.






### Releasing the connection

- Remove the pins (**1**) from the connecting points (**2**) on both sides.
- Insert the pins (**1**) in the retaining sheet (**3**) and secure them with retaining pins.

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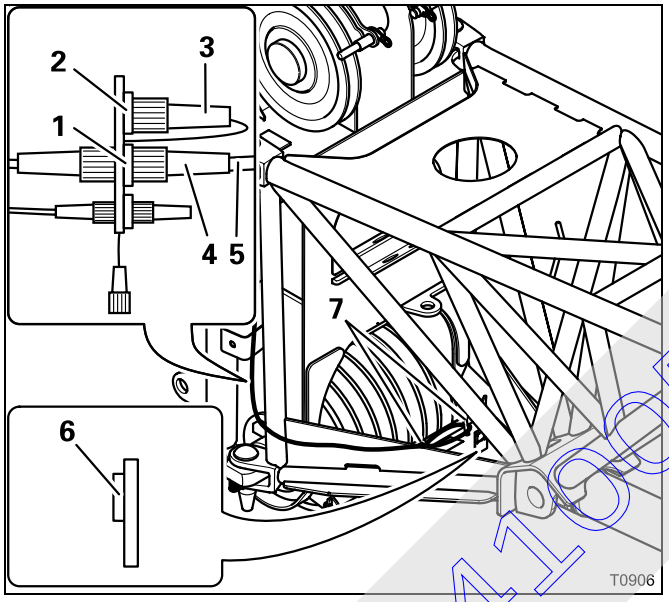
## 3.4.12 Electrical connections at the swing-away lattice

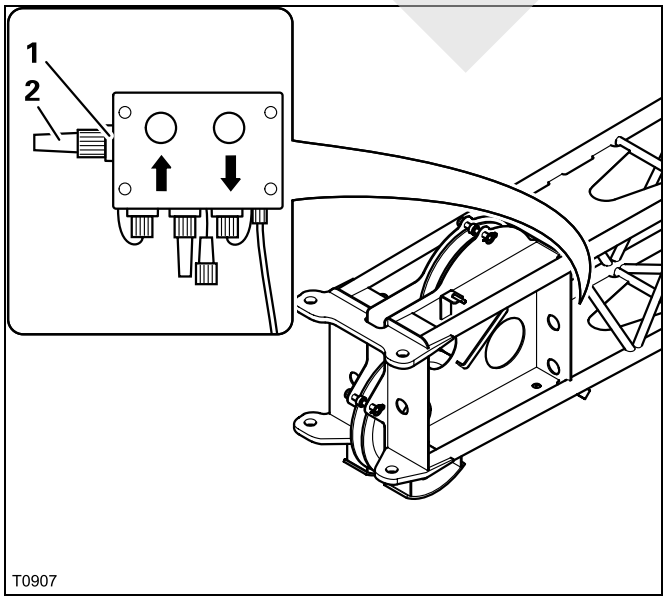
**Risk of crushing due to the swing-away lattice swinging around**
Start the subsequent work only if the swing-away lattice has been pinned in front of the main boom head or is secured against swinging around. This will prevent the swing-away lattice from swinging inadvertently to the side of the main boom and crushing you.

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




**Establishing the electrical connection**

- Remove the bridging plug (**3**) from the socket (**1**) and plug it into the dummy socket (**2**).
- Unwind the cable (**5**) from the holder (**7**).
- Remove the plug (**4**) from the dummy socket (**6**) and plug it into the socket (**1**).
- Wind up the cable (**5**) on the holder (**7**) until it does not sag.




- Check whether the bridging plug (**2**) is inserted in the socket (**1**) at the front of section 1.



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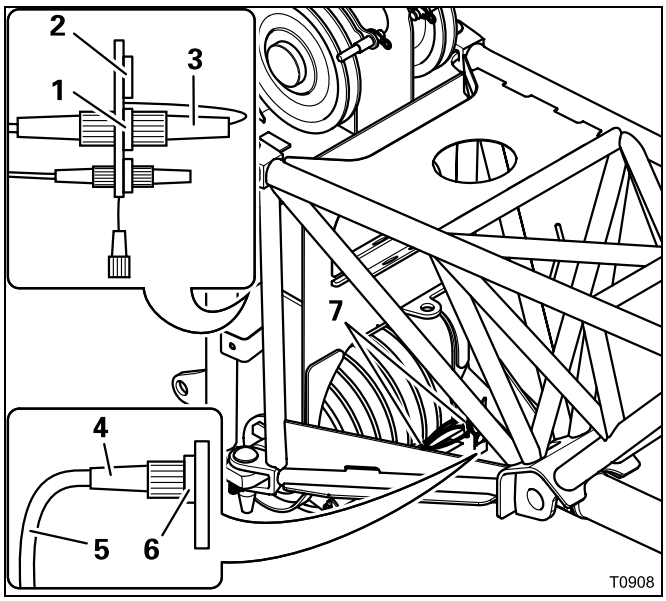


**Disconnecting the electrical connection**

- Remove the plug (**4**) from the socket (**1**) and plug it into the dummy socket (**6**).
- Wind the cable (**5**) onto the holder (**7**).
- Remove the bridging plug (**3**) from the dummy socket (**2**) and plug it into the socket (**1**).



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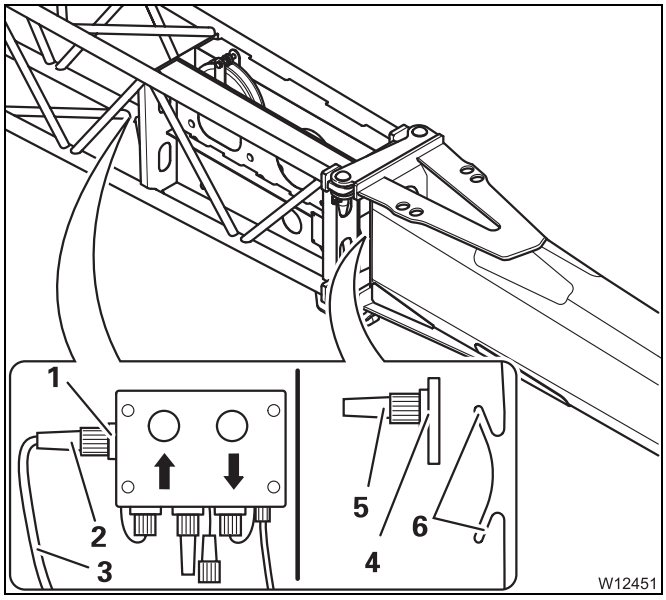
**With 17 m (56 ft) swing-away lattice**

- First establish the electrical connection at the 10 m (33 ft) swing-away lattice extension; ➠ p. 3 - 61.

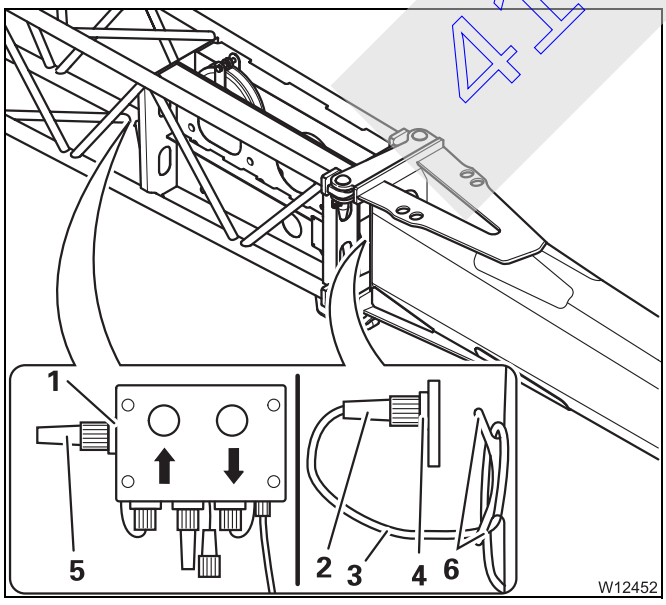



### Establishing the electrical connection

- Remove the bridging plug (**5**) from the socket (**1**) and plug it into the dummy socket (**4**).
- Unwind the cable (**3**) from the holder (**6**).
- Remove the plug (**2**) from the dummy socket (**4**) and plug it into the socket (**1**).
- Wind up the cable (**3**) on the holder (**6**) until it does not sag.

**Risk of damage to the cable**
Always disconnect the electrical connection before you swivel section 2 to section 1. In this way you will prevent the cable from tearing during swivelling.






### Disconnecting the electrical connection

- Remove the plug (**2**) from the socket (**1**) and plug it into the dummy socket (**4**).
- Wind the cable (**3**) onto the holder (**6**).
- Remove the bridging plug (**5**) from the dummy socket (**4**) and plug it into the socket (**1**).

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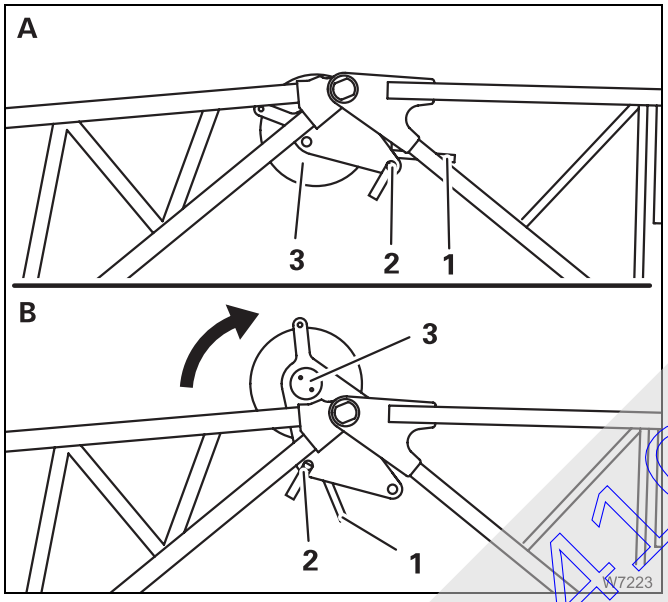
## 3.4.13 Folding deflection sheaves out / in

**Folding out deflection sheaves**

For operation with the swing-away lattice, you must fold out the deflection sheave.

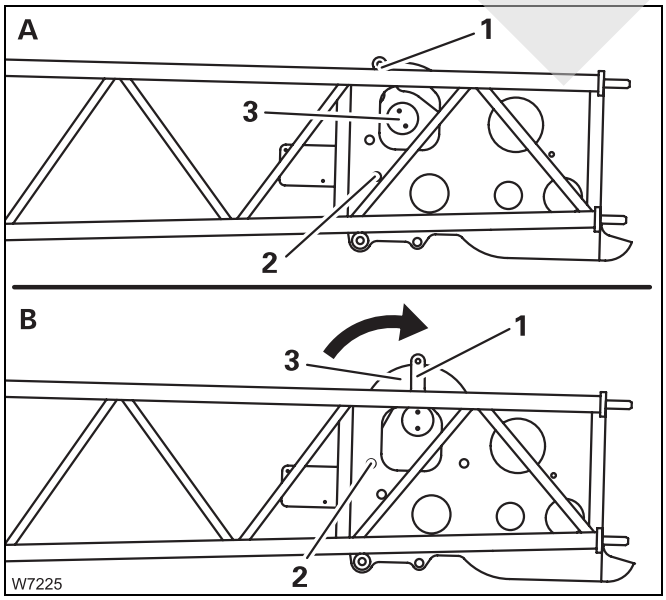
**Risk of crushing**
When pulling the pins, always hold the *Rear deflection sleeve* tight by the handle and the *Front deflection sheave* by the strut.
Your fingers might get crushed if you hold the sheave by the side plate.




**Rear deflection sheave**

- (**A**) – Undo the retaining pin for the pin (**2**).
- Hold the deflection sheave tight by the handle (**1**) and pull out the pin (**2**).
- (**B**) – Fold the deflection sheave (**3**) upwards and fasten it in this position with the pin (**2**).
- Secure the pin (**2**) with the retaining pin.






**Front deflection sheave**

- (**A**) – Undo the retaining pin for the pin (**2**).
- Hold the deflection sheave tight by the strut (**1**) and pull out the pin (**2**).
- (**B**) – Fold the deflection sheave (**3**) upwards and fasten it in this position with the pin (**2**).
- Secure the pin (**2**) with the retaining pin.

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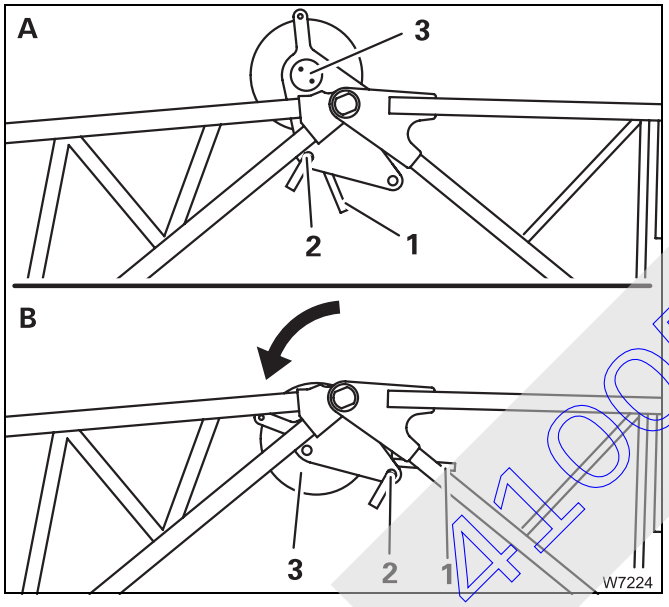
**Folding in deflection sheaves**

In order to drive with the folded swing-away lattice, you must fold in the deflection sheaves.

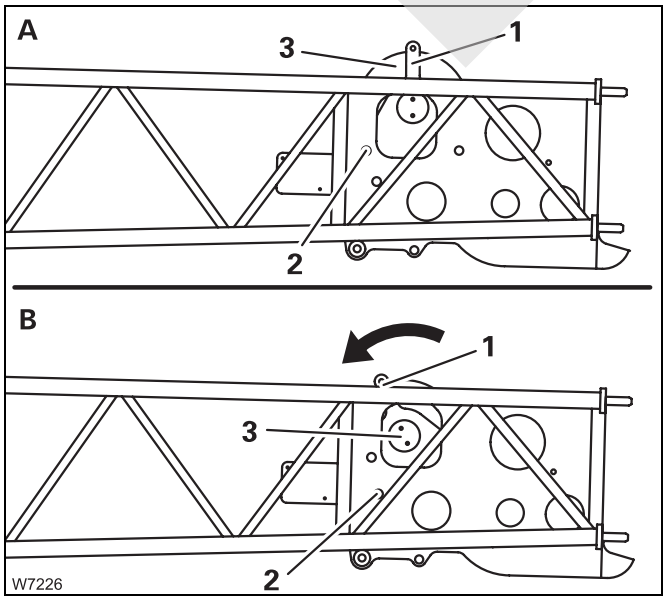
**Risk of accidents by exceeding the permissible overall height**
Always fold in the deflection sheaves when the swing-away lattice is folded onto the main boom for driving. The overall height specified for on-road driving is exceeded if the deflection sheaves are folded out.

**Risk of crushing**
When pulling the pins, always hold the *Rear deflection sleeve* tight by the handle and the *Front deflection sheave* by the strut.
Your fingers might get crushed if you hold the sheave by the side plate.




**Rear deflection sheave**

- (**A**) – Undo the retaining pin for the pin (**2**).
- Hold the deflection sheave tight by the handle (**1**) and pull out the pin (**2**).
- (**B**) – Fold the deflection sheave (**3**) downwards and fasten it in this position with the pin (**2**).
- Secure the pin (**2**) with the retaining pin.

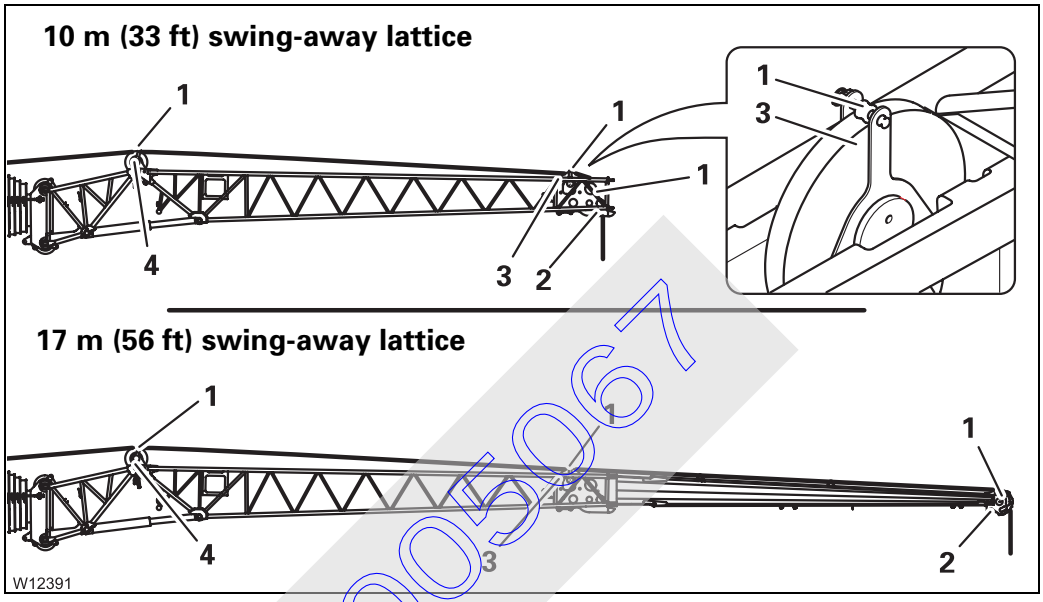



**Front deflection sheave**

- (**A**) – Undo the retaining pin for the pin (**2**).
- Hold the deflection sheave tight by the strut (**1**) and pull out the pin (**2**).
- (**B**) – Fold the deflection sheave (**3**) downwards and fasten it in this position with the pin (**2**).
- Secure the pin (**2**) with the retaining pin.

## 3.4.14 Applying / removing the hoist rope

**Risk of accidents due to falling parts**
Secure the sheaves and rods always with retaining pins when securing the hoist rope.
This will prevent elements from becoming loose, falling down and injuring persons.






**Applying the hoist rope**

- Remove the sheaves (**1**).
- Lay the hoist rope over the deflection sheaves (**4**), (**3**) and over the head sheave (**2**) to section 1 or section 2.
- Put all sheaves (**1**) back in place and secure them with retaining pins.
- Attach the hook tackle or the hook block. The hoist rope may be reeved once or twice, depending on the swing-away lattice; ➠ p. 3 - 67.

**Removing the hoist rope**

- Unreeve the hook block.
- Remove the sheaves (**1**).
- Take the hoist rope off the head sheave (**2**) and the deflection sheaves (**4**), (**3**) and place it on the left side on the ground.
- Put all sheaves back in place and secure them with retaining pins.

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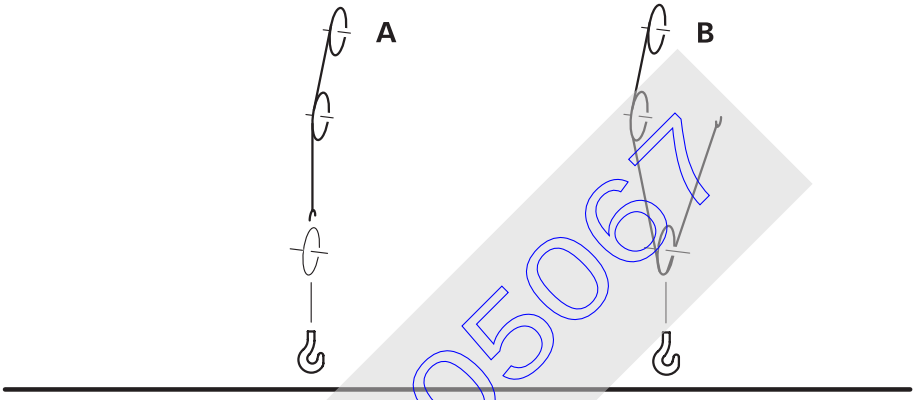
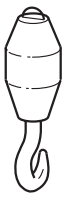
**Possible reeving methods at the swing-away lattice**

**Single-sheave** hook block
Max. lifting capacity of the hook block 20 t (44 000 lbs)
**Max. lifting capacity with the GMK 4100/4100-L/5095:**

**A** with single reeving 5.7 t (12 500 lbs)

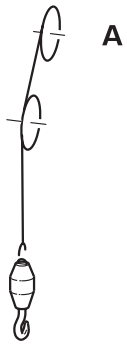
**B** with double reeving 11.4 t (25 000 lbs)



**Hook tackle**
Max. lifting capacity of the hook tackle 8 t (17 600 lbs)
**Max. lifting capacity with the GMK 4100/4100-L/5095:**

**A** with single reeving 5.7 t (12 500 lbs)

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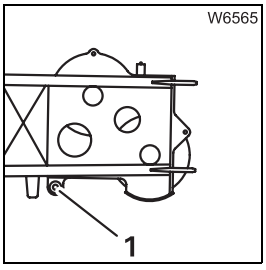


- With double reeving, fasten the rope end clamp to the attachment plate (**1**).

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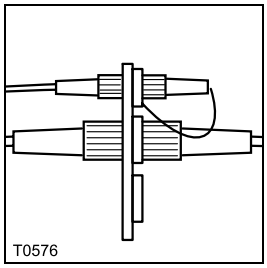
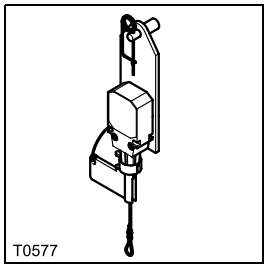
## 3.4.15 Installing / removing the lifting limit switch

The functions *Lift hoist, extend main boom telescoping*, *Lower main boom* and *Derrick swing-away lattice* are monitored by the lifting limit switch on the swing-away lattice and switched off, if necessary.

### Connection to the main boom




If the lifting limit switch is removed from the main boom, both connections must be overridden; ➠ *Operating instructions GMK 4100/4100-L/5095*.




If a lifting limit switch remains attached to the main boom, the lifting limit switch must be blocked; ➠ *Operating instructions GMK 4100/4100-L/5095.*



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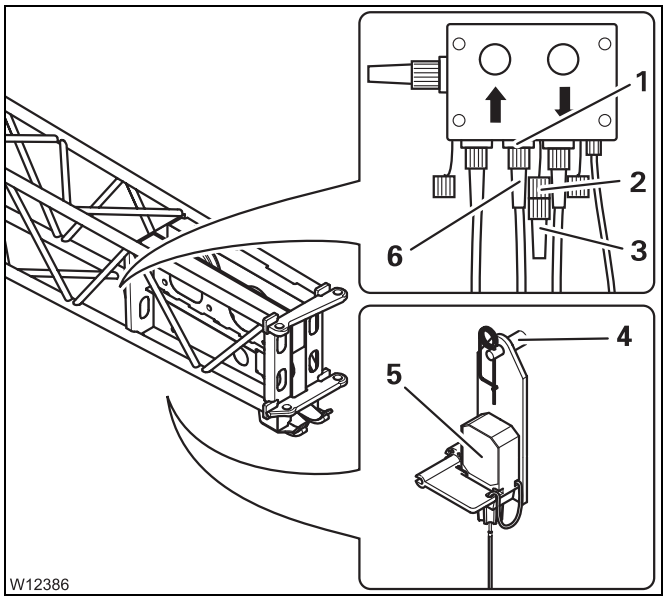
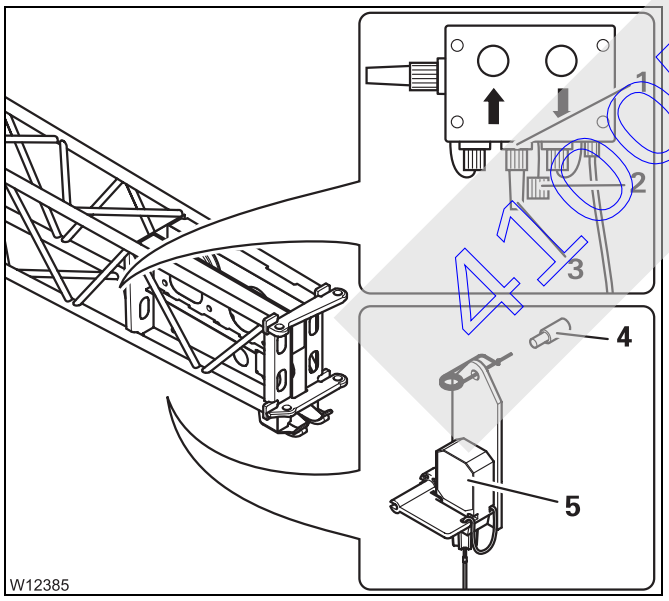
## At the 10 m (33 ft) swing-away lattice




### Connecting the lifting limit switch

- Fit the lifting limit switch (5) onto the clamp (**4**) and secure it with a retaining pin.
- Remove the bridging plug (**3**) from the socket (**1**) and plug it into the dummy socket (**2**).
- Lay the connecting cable (**6**) in such a way that it will not be damaged during crane operation, and insert the lifting limit switch into the socket (**1**).




### Removing the lifting limit switch

- Pull the plug from the socket (**1**).
- Remove the bridging plug (**3**) from the dummy socket (**2**) and plug it into the socket (**1**).
- Remove the lifting limit switch (5) from the clamp (**4**).
- Attach the retaining pin to the lifting limit switch.



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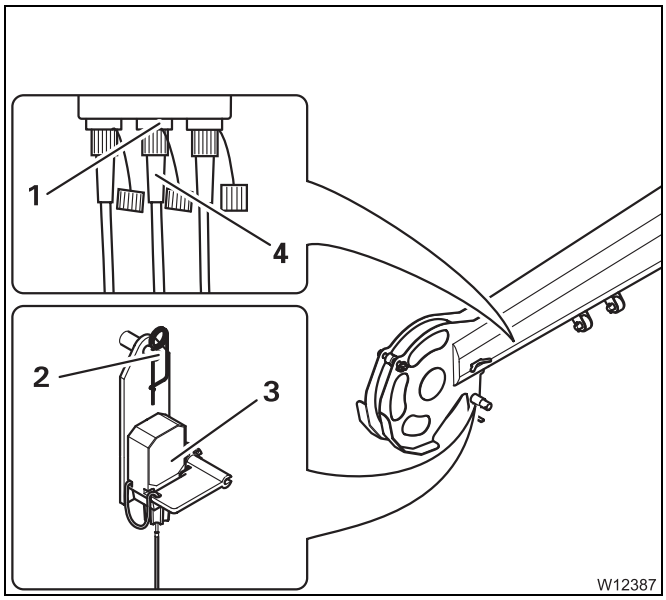
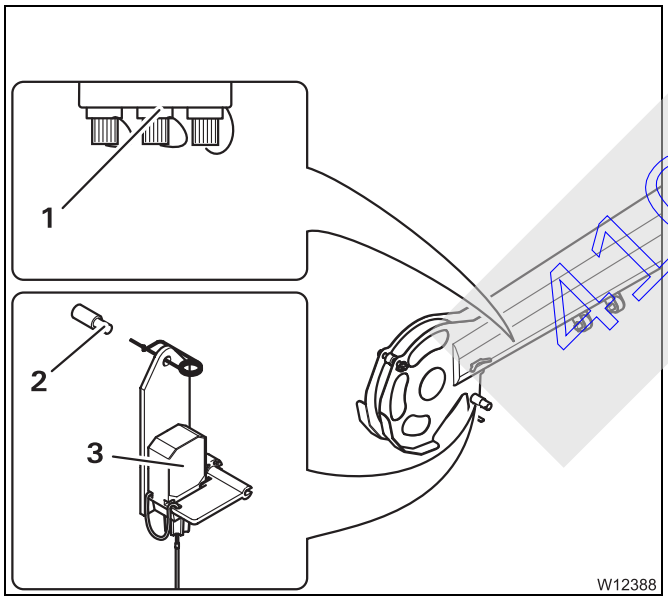
## At the 17 m (56 ft) swing-away lattice




### Connecting the lifting limit switch

- Fit the lifting limit switch (**3**) onto the clamp (**2**) and secure it with a retaining pin.
- Lay the connecting cable (**4**) in such a way that it will not be damaged during crane operation, and insert the lifting limit switch into the socket (**1**).

For operation with the 17 m (56 ft) swing-away lattice, the connection for the lifting limit switch at the 10 m (33 ft) swing-away lattice must be overridden with the short-circuit plug.




### Removing the lifting limit switch

- Pull the plug from the socket (**1**).
- Remove the lifting limit switch (**3**) from the clamp (**2**).
- Attach the retaining pin to the lifting limit switch.



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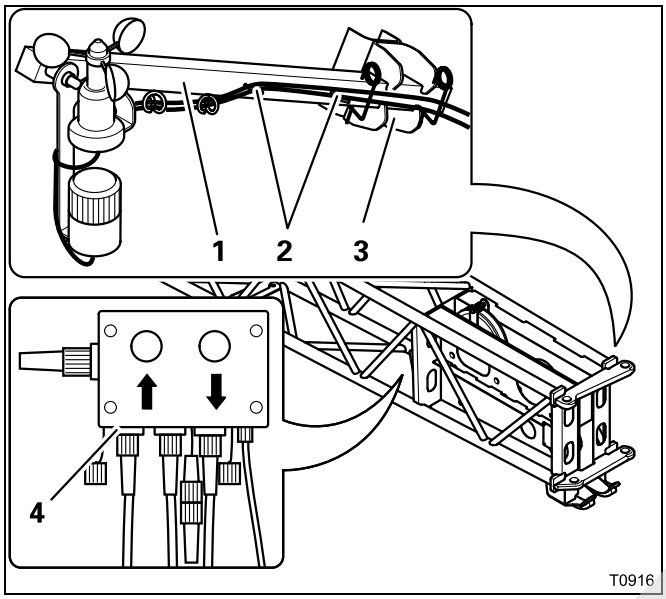
## 3.4.16 Installing / removing the anemometer

**At the 10 m (33 ft) swing-away lattice**

The anemometer of the main boom is used on the lattice extension.

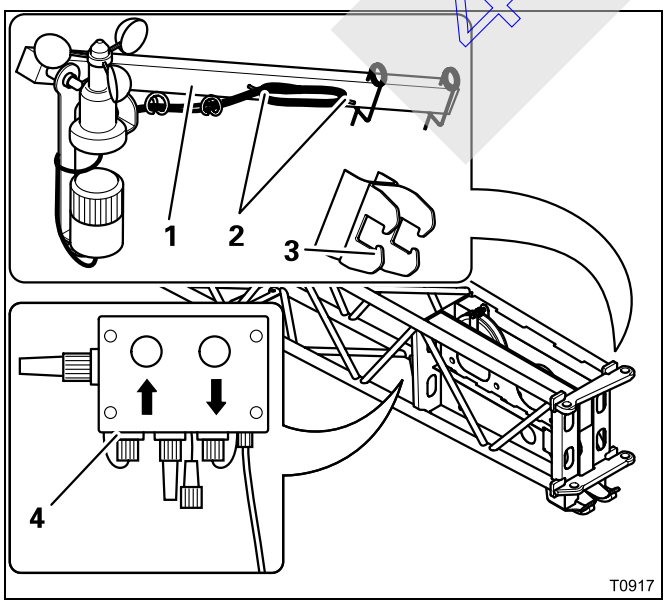



**Installing the anemometer**

- Put the rod (**1**) in the holder (**3**) and secure it with the retaining pins.
- Remove the anemometer cable from the holders (**2**) and connect it to the socket (**4**).
- Lay the cable in such a way that it will not be damaged during crane operation.
- Check whether the anemometer is able to swing so that is hangs vertically even when the main boom is raised.

You must remove the anemometer before driving on the road.

**Risk of damage to the anemometer**
Remove the anemometer for on-road driving.
This will prevent the anemometer from being damaged by wind (e.g. by suction currents caused by oncoming traffic in tunnels).




**Removing the anemometer**

- Remove the plug from the socket (**4**) and close the socket with the protective cap.
- Wind the cable onto the holders (**2**).
- Take the rod (**1**) out of the holder (**3**).
- Fasten the retaining pins to the rod (**1**) for transport.



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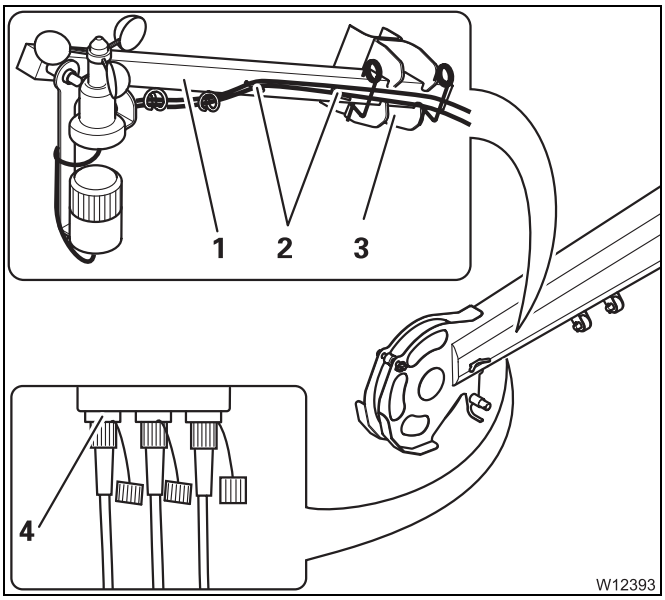
**On the 17 m (56 ft) swing-away lattice**

The anemometer of the main boom is used on the lattice extension.

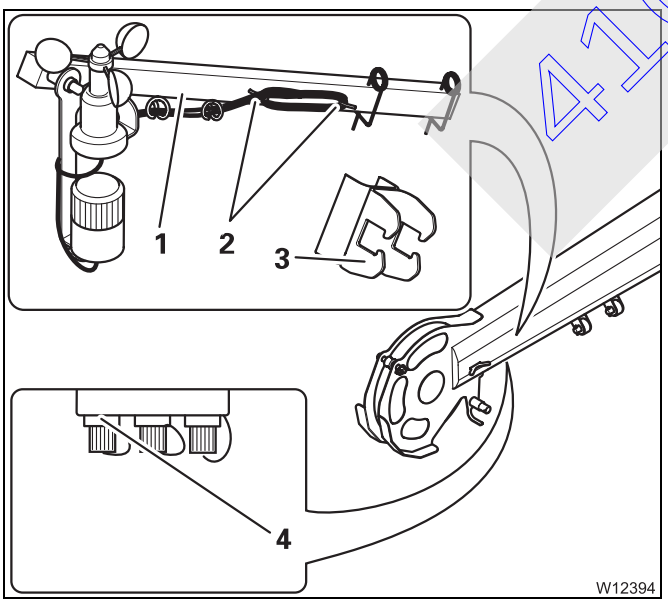



**Installing the anemometer**

- Put the rod (**1**) in the holder (**3**) and secure it with the retaining pins.
- Remove the anemometer cable from the holders (**2**) and connect it to the socket (**4**).
- Lay the cable in such a way that it will not be damaged during crane operation.
- Check whether the anemometer is able to swing so that is hangs vertically even when the main boom is raised.

You must remove the anemometer before driving on the road.

**Risk of damage to the anemometer**
Remove the anemometer for on-road driving.
This will prevent the anemometer from being damaged by wind (e.g. by suction currents caused by oncoming traffic in tunnels).




**Removing the anemometer**

- Remove the plug from the socket (**4**) and close the socket with the protective cap.
- Wind the cable onto the holders (**2**).
- Take the rod (**1**) out of the holder (**3**).
- Fasten the retaining pins to the rod (**1**) for transport.



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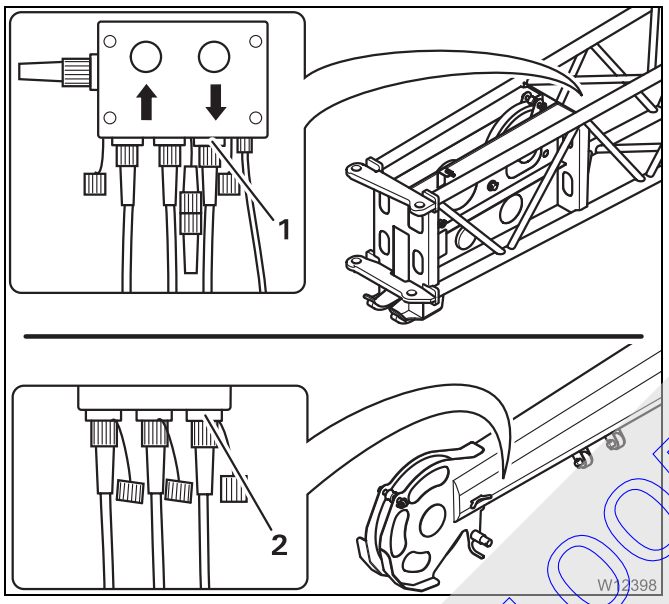
## 3.4.17 Air traffic control light – electrical connection

The air traffic control light (additional equipment) is installed on the anemometer holding rod.

### Establishing the electrical connection




**On the 10 m (33 ft) swing-away lattice:**

- Install the anemometer; ➠ p. 3 - 71.
- Undo the protective cap for the socket (**1**).
- Put the plug of the air traffic control light into the socket (**1**).

**On the 17 m (56 ft) swing-away lattice:**

- Install the anemometer; ➠ p. 3 - 71.
- Undo the protective cap for the socket (**2**).
- Put the plug of the air traffic control light into the socket (**2**).



- Switch on the air traffic control light, ➠ *Operating instructions GMK 4100/4100-L/5095.*

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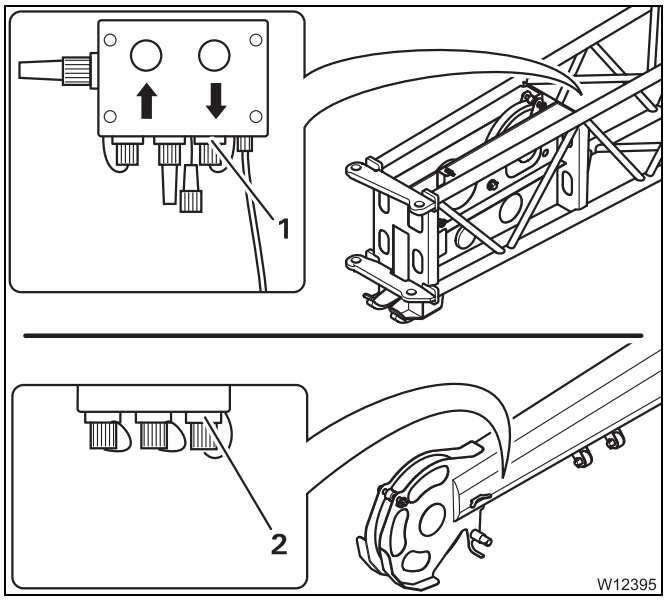
## Disconnecting the electrical connection

- Switch off the air traffic control light, ➠ *Operating instructions GMK 4100/4100-L/5095.*




**On the 10 m (33 ft) swing-away lattice:**

- Pull the plug of the air traffic control light out of the socket (**1**).
- Cover the socket (**1**) with the protective cap.
- Remove the anemometer; ➠ p. 3 - 71.

**On the 17 m (56 ft) swing-away lattice:**

- Pull the plug of the air traffic control light out of the socket (**2**).
- Cover the socket (**2**) with the protective cap.
- Remove the anemometer; ➠ p. 3 - 71.



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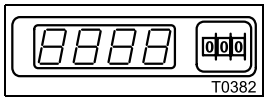
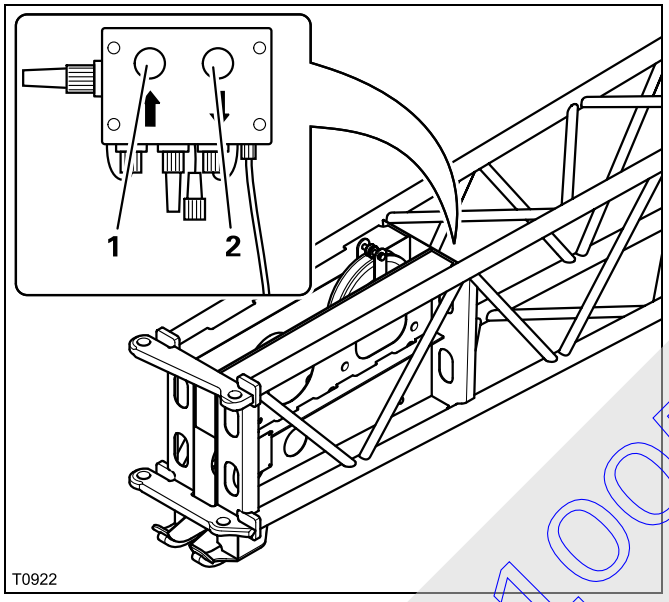
## 3.4.18 Derricking the swing-away lattice

This section only applies to the derricking swing-away lattice.




- In order to enable the derricking of the swing-away lattice, the SLI code must be set for the current rigging mode; ➠ *Setting the SLI*, p. 3 - 87.

### When rigging

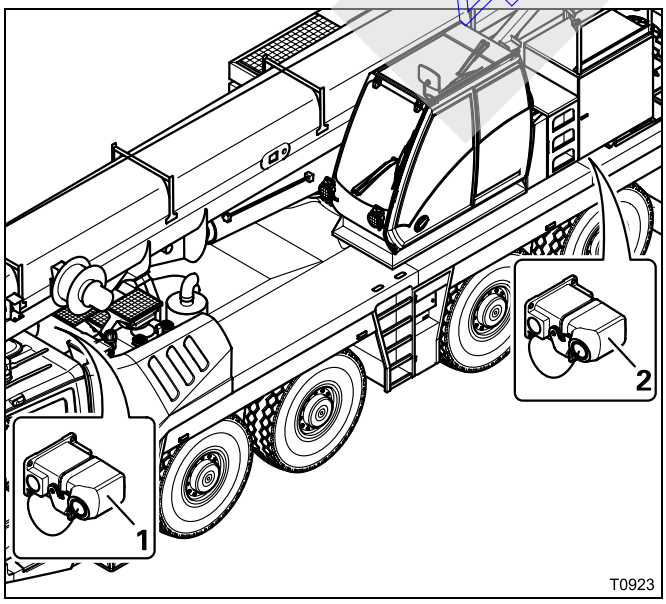



#### With the button unit

The swing-away lattice is derricked as long as the corresponding button is pressed or until the end position or a switch-off point is reached.

– To raise: press button (**1**)
– To lower: press button (**2**)






#### With the hand-held control

Derricking the swing-away lattice is enabled at the sockets (**1**) and (**2**).

It does not make sense to connect the hand-held control to the socket (**2**) for rigging since you cannot see the folded swing-away lattice from there.

This socket (**2**) is intended for emergency operation.

- Connect the hand-held control to the socket (**1**).

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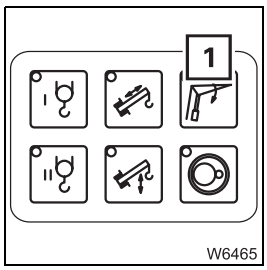
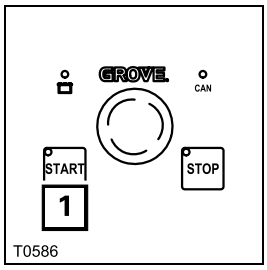
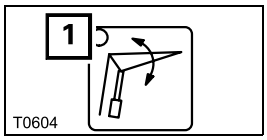



The button (**1**) is only active if the derricking swing-away lattice is connected to the electrical power supply.

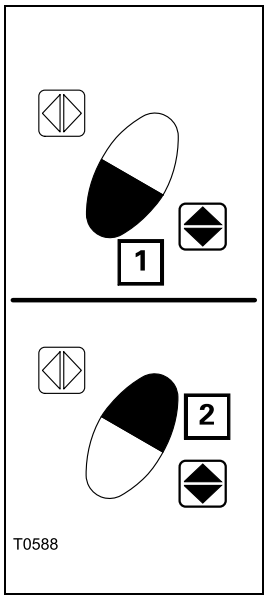



- Press the button (**1**) – the engine starts.




**Pre-selecting derricking the swing-away lattice**

- Press the button (**1**).
  - The lamp in the button goes on.




**Raising / lowering the swing-away lattice**

- Press the button combination for the desired movement:
  - **1** raises the swing-away lattice
  - **2** lowers the swing-away lattice

The further you press the button (**1**) or (**2**), the faster the movement is performed.

The pre-selected movement is executed until you let go of the respective button or until the respective end position has been reached.



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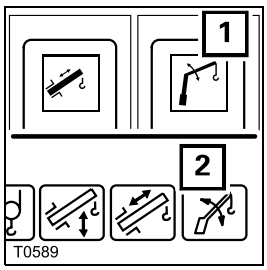
**During operation**

**Switching on the derricking gear**

All power units are switched off and the lamps in the corresponding buttons are only dim after turning on the ignition.



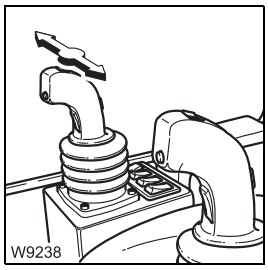

- Press the button (**1**) once.
  - The lamp in the button (**1**) shines brightly.
  - The symbol (**2**) is **green** if the derricking gear is switched on.

If the control lever is assigned more than one function, all other power units which are assigned the same control lever operation are switched off.

**Raising and lowering**

You can adjust the sensitivity of the control levers to the operating conditions; ➠ *Operating instructions GMK 4100/4100-L/5095*.

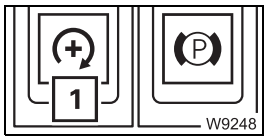
**Risk of accidents due to unexpected crane movements**
If the control lever is assigned more than one function, check whether the control lever function *Derricking* is switched on before you move the control lever for derricking.
In this way, you can avoid accidents due to unexpected crane movements.



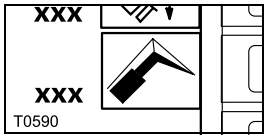

**To lower:** Push the control lever to the right – the swing-away lattice is lowered.

**To raise:** Push the control lever to the left – the swing-away lattice is raised.

The maximum derricking speed is automatically reduced as the system length is increased. If you now reduce the working radius (e.g. by retracting the telescoping), the derricking speed is automatically increased again.




You can set the desired engine speed (idling speed) with the button (**1**); ➠ *Operating instructions GMK 4100/4100-L/5095*.




You can limit the maximum derricking speed; ➠ *Operating instructions GMK 4100/4100-L/5095.*



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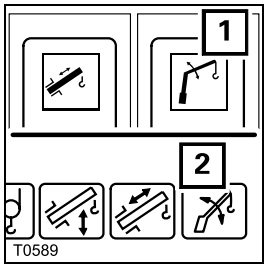
When derricking the swing-away lattice, the SLI automatically switches fixed angles (0° inclination) and intermediate angles (0 – 20° or 20 – 40° inclination) specified in the lifting capacity table if they are permitted for the load currently raised.

If the switchover is not permitted for the load currently raised, derricking is switched off and a corresponding error message is issued.

The swing-away lattice can be derricked under load. The derricking load is limited; ➠ *Lifting capacity table*. Lowering is switched off if the limit is exceeded.

**Switching off the derricking gear**




- Press the button (**1**) once.
  - The lamp in the button (**1**) shines dimly.
  - The symbol (**2**) is (**red**) if the derricking gear is switched off.

All power units are switched off and the lamps in the corresponding buttons shine only dimly after turning off the ignition.



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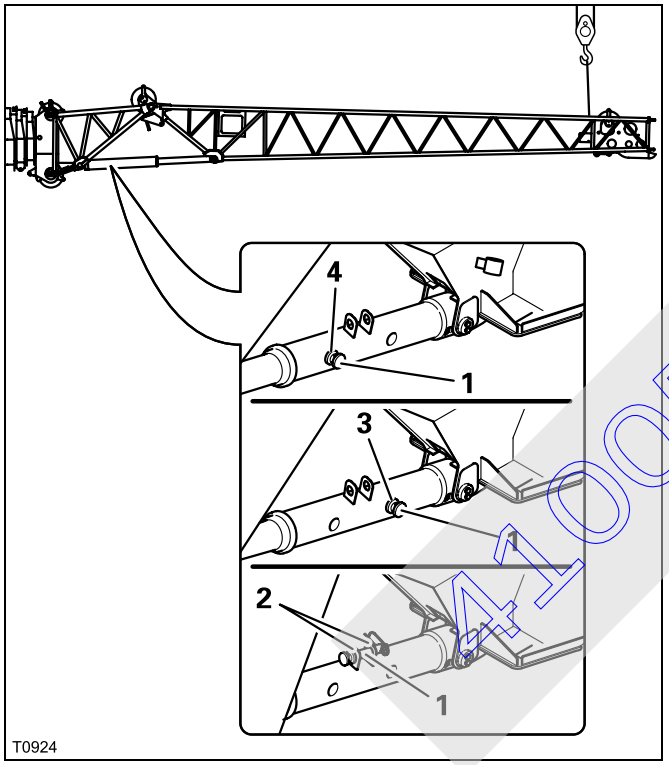
## 3.4.19 Setting the angle – with an auxiliary crane

This section only applies to the inclinable swing-away lattice.

**Risk of accidents due to the swing-away lattice folding down**
Always secure the swing-away lattice with an auxiliary crane or by setting it down on the ground before knocking out the pin for the inclination. This will prevent the swing-away lattice from suddenly folding down and injuring persons.




- Raise the swing-away lattice with an auxiliary crane.
- Pull the pin (**1**).
- Insert the pin (**1**) for:

| | |
|---|---|
| **0° angle** | in the **front** bore (**4**). |
| **20° angle** | in the **rear** bore (**3**). |
| **40° angle** | in the **holder** (**2**). |

- Secure the pin with a retaining pin.
- Lower or raise the swing-away lattice.
- Remove the sling gear.

If the swing-away lattice now touches the ground at the set angle, the angle will be set automatically when the main boom is raised.



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## 3.4.20 Setting the angle – without auxiliary crane

If an auxiliary crane is not available, the swing-away lattice must be set down before it is angled.

**Risk of damage to the hoist rope**
Unreeve the hook block and set down the hoist rope beside the swing-away lattice before you angle the swing-away lattice.
This will prevent the hoist rope from being damaged when the swing-away lattice is set down on the ground in order for it to be angled.

**Entering the SLI code**

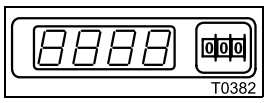
To set an angle without an auxiliary crane, you must enter an SLI rigging code. The SLI rigging code depends on:

- The rigged outrigger span
- The rigged counterweight
- The working position

**Risk of overturning in impermissible rigging mode**
Always enter the SLI rigging code for the current rigging mode of the truck crane, and only slew the superstructure into the working position permitted by the SLI rigging code set according to the *Lifting capacity table*.
This will prevent the truck crane from overturning when the main boom is extended.

**Risk of overturning with the hook block (hook tackle) raised**
The telescoping range enabled with the set rigging code is only permissible for telescoping without a load and hook block / hook tackle.
If the main boom is fully extended, load measurements are not possible and the SLI monitoring is based on the working radius.
For this reason, you must always unreeve the hook block. This will prevent the truck crane from overturning when the main boom is extended.






- Enter the SLI rigging code for the angle for the current rigging mode of the truck crane; ➠ *Lifting capacity tables* – Chapter *Rigging tables – Swing-away lattice extension*.
- Slew the superstructure into a working position permitted by the *Lifting capacity table* for the SLI rigging code set.

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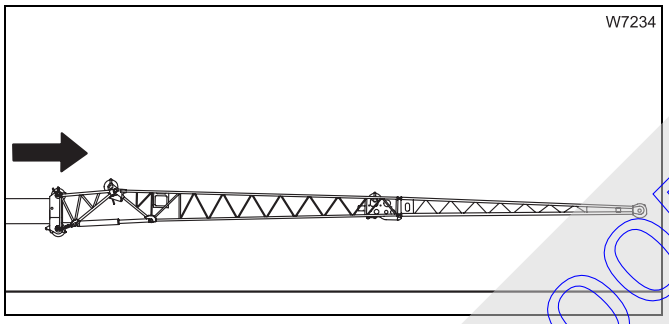
**Setting an angle of 20° or 40°**

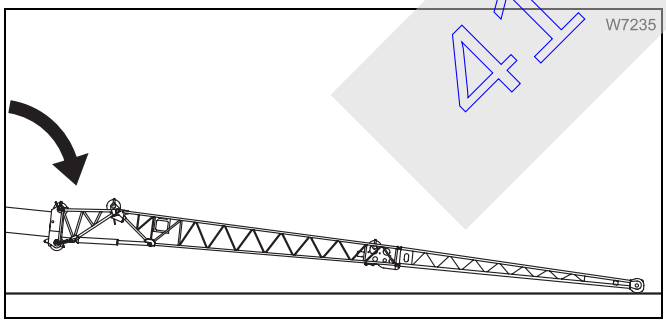
This section is based on the assumption that the swing-away lattice has been pinned in front of the main boom and the unreeved hoist rope has been set down beside the swing-away lattice.

**Risk of accidents in the event of other procedures**
For the procedure described here, the swing-away lattice is set down on the ground. If the swing-away lattice is to be set down on packing for inclination, please bear in mind that the swing-away lattice will slide towards the truck crane when raised, until the angle of inclination is reached.
The swing-away lattice could slip off inappropriate packing material, fold down and cause injuries.

**Risk of accidents when overriding the SLI**
Never override the SLI if the crane movements are switched off. This will prevent you from slewing beyond the permissible range and the truck crane overturning.




- Enter the SLI rigging code for the inclination; ➠ p. 3 - 80.
- Extend the main boom as far as permitted with the set SLI rigging code, or as far as possible given the space available.




- Lower the main boom until the swing-away lattice head touches the ground.
- You can incline the truck crane further if the ground is unable to be reached; ➠ p. 3 - 85.

During the following steps, the swing-away lattice head is pulled or pushed over the ground. Lay boards, for example, under the skids so that the head is not pushed into the ground or damaged.



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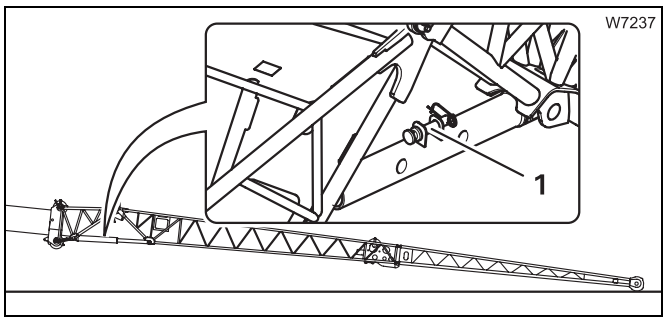
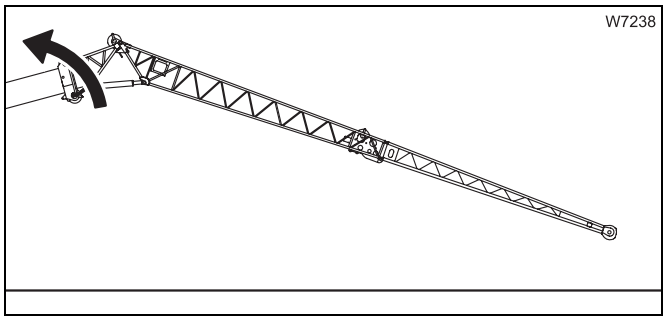
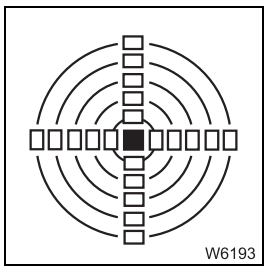



- If necessary, relieve the pin (**1**) by raising slightly.
- Move the pin (**1**) into the position for the required angle of inclination, e.g. 40°;
➠ *Setting the angle – with an auxiliary crane*, p. 3 - 79.



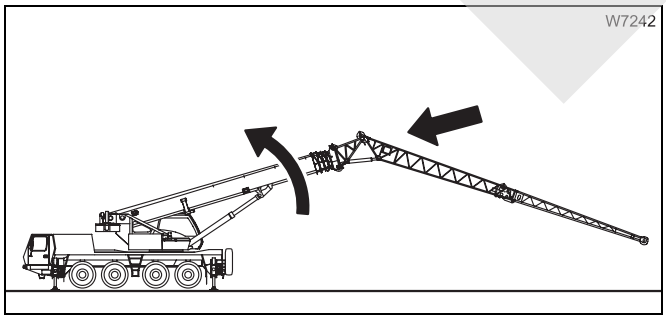

- Raise the main boom slowly.
In doing so, the head of the swing-away lattice is pulled across the ground.
- Lower the main boom until the swing-away lattice head no longer touches the ground.

The swing-away lattice is inclined to the set angle of inclination in the process, e.g. to 40°.

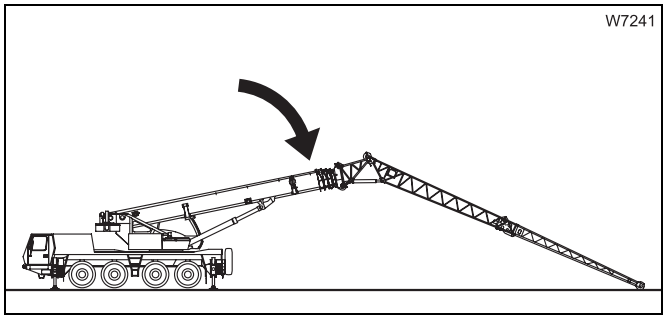



If you have inclined the truck crane with the outriggers in order to set the angle of inclination, then level the truck crane again now.

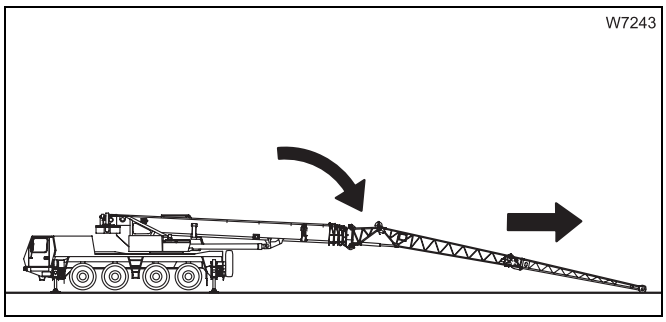
A crane example is illustrated in each of the following diagrams.




- Fully retract the main boom without touching the ground with the swing-away lattice (raise the boom now and again if necessary).




- Set the head of the swing-away lattice down onto the ground.



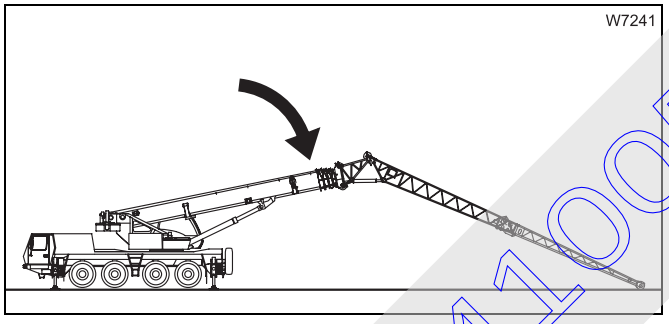

- Slowly lower the main boom into a horizontal position.
  In doing so, the head of the swing-away lattice is pushed along the ground.

The swing-away lattice is now in the correct position for the attachment of the hoist rope.

**Risk of overturning due to the truck crane standing at an angle**
After setting the angle of inclination, always check whether the truck crane is level.
This will prevent the actual working range from deviating from the permissible working range, and the truck crane overturning.

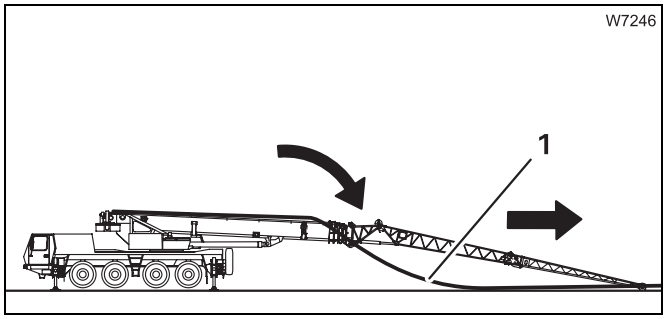
**Setting an angle of inclination of 0°**

The section is based on the assumption that no load is raised and the hook block is unreeved.




- Set the head of the swing-away lattice down onto the ground.

During the following steps, the swing-away lattice head is pulled or pushed over the ground. Lay boards, for example, under the skids so that the head is not pushed into the ground or damaged.




- Slowly lower the main boom into a horizontal position.
  In doing so, the head of the lattice extension is pushed across the ground.
- Remove the hoist rope (**1**) and set it down next to the swing-away lattice.



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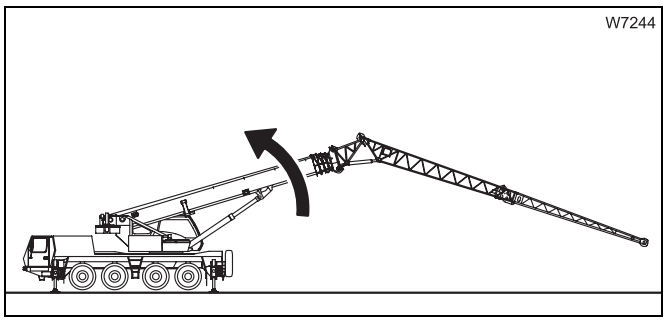
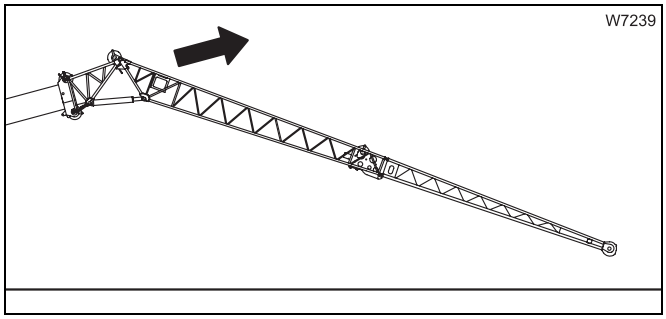
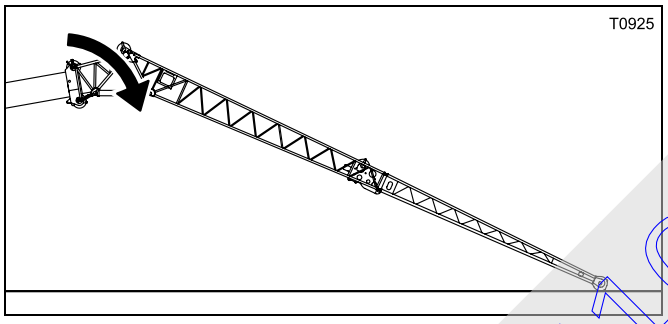


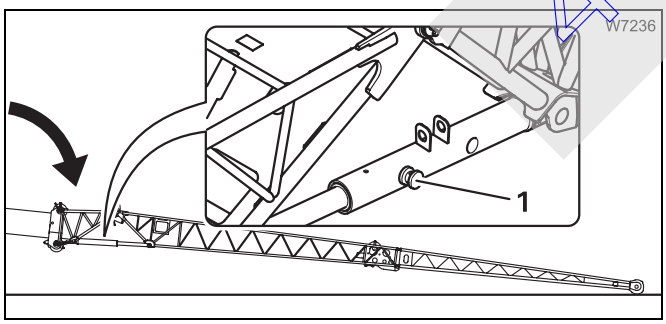

- Slowly lower the main boom until the swing-away lattice head no longer touches the ground.



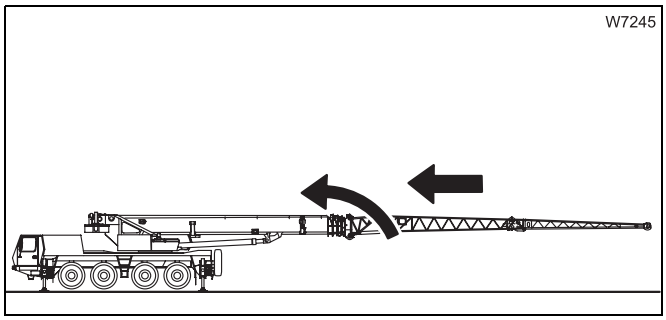

- Enter the SLI rigging code for the inclination; ➠ p. 3 - 83.
- Extend the main boom as far as permitted with the set SLI rigging code, or as far as possible given the space available.




- Lower the main boom until the swing-away lattice head touches the ground.
- You can incline the truck crane further if the ground is unable to be reached; ➠ p. 3 - 85.




- Slowly lower the main boom until the 0° angle is reached.
  In doing so, the head of the swing-away lattice is pushed along the ground.
- Move the pin (**1**) of the angle piece into the 0° angle position; ➠ *Setting the angle – with an auxiliary crane*, p. 3 - 79.




- Derrick the main boom into a horizontal position and fully retract it.

The swing-away lattice is now in the correct position to continue unrigging.



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If you have inclined the truck crane with the outriggers, level it now so that the swing-away lattice sections can be folded more easily.

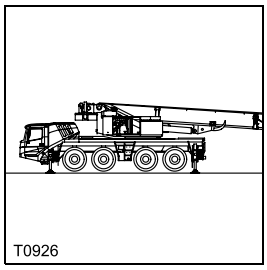
**Inclining the truck crane**

In order to set the angle of the swing-away lattice, you must set it down on the ground by extending and lowering the main boom.

Depending on the available space, the condition of the terrain or limitation of telescoping due to the current rigging mode, it may be the case that the swing-away lattice cannot be set down on the ground by telescoping and lowering the main boom.

In this case, you can additionally incline the truck crane with the outriggers.

**Risk of accidents if the wheels touch the ground**
Make sure the wheels do not touch the ground after inclining the truck crane. This will prevent a reduction in the stability of the truck crane and the truck crane from overturning when setting the angle.




- Extend the supporting cylinders on the counterweight side.
- Retract the supporting cylinders on the main boom side if necessary. Make sure the wheels do not touch the ground in the process.



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# 3.5 Operation with swing-away lattice

When operating the swing-away lattice, the maximum speed for the different power units is limited to 70%, ➠ *Operating instructions GMK 4100/4100-L/5095*.

**Risk of damage to the main boom**
During operation with the 10 m (33 ft) swing-away lattice at an angle of 0° in the steepest boom position, the head sheaves on the main boom can be damaged if a hook block is raised or lowered.
Reduce the hoist speed so that the hook block is raised slowly past the head sheaves.

The hoisting, lowering, slewing, derricking and telescoping operations are carried out in the same way as when operating with the main boom. This section only contains information that you need for a rigged or installed swing-away lattice.

## 3.5.1 Setting the SLI

If a hook block is reeved on the main boom during operation with the lattice extension, the loads specified in the *Lifting capacity tables* are reduced and the SLI switches off earlier accordingly.
The values which have to be deducted from the lifting capacities depend on the length of the lattice extension and the weight of the hook block. A table with the values can be found in the *Lifting capacity tables* in the section titled *Notes on working with the swing-away lattice extension*.



**When operating with the swing-away lattice**

Components which have to be entered additionally on the SLI:

**With derricking swing-away lattice:** the length

**With inclinable swing-away lattice:** the length and the angle

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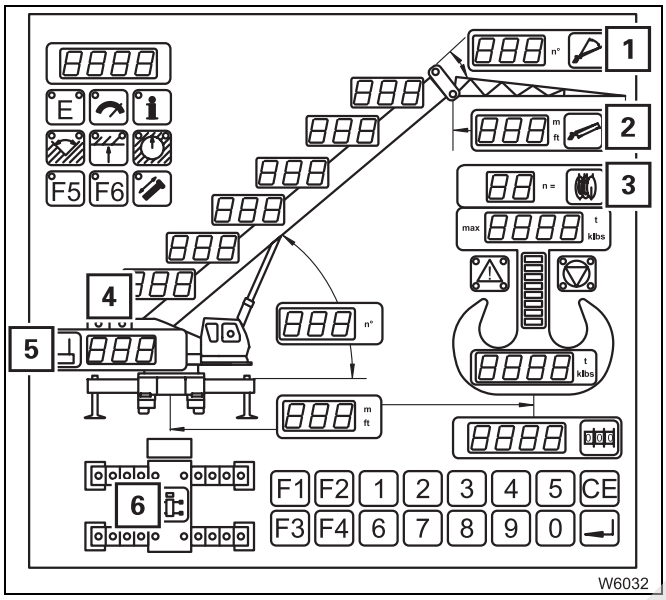
**Entering the SLI code**

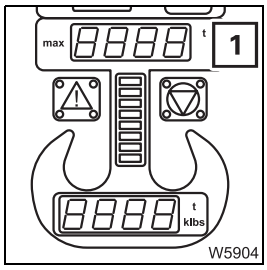
- Enter the current rigging mode on the SLI, either using the corresponding SLI code according to the *Lifting capacity table* or individual components.
- Enter the current reeving on the SLI.
- Check whether the current rigging mode of the truck crane corresponds to the displayed rigging mode.




- Check:
  - **5** The rigged counterweight
  - **2** The length of the rigged swing-away lattice
  - **1** With an inclinable swing-away lattice, the rigged angle
  - **6** The rigged outrigger span
  - **3** The number of reeved rope lines
  - **4** The hoist that is switched on



**Lifting capacities**




When the telescopic sections are telescoped to a fixed length with the GMK 4100/4100-L/5095, the SLI releases the lifting capacity now according to the *Lifting capacity table* and the corresponding value appears on the *Maximum load* display (**1**).

Depending on the current angle, the SLI automatically switches to the capacity diagrams for fixed angles (0° inclination) and intermediate angles (0 – 20° or 20 – 40° inclination) if this is permitted for the load currently raised.

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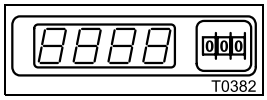
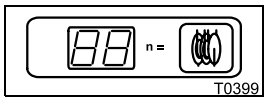
## 3.5.2 Derricking the main boom

**Risk of accidents with overridden SLI**
Do not override the SLI when lowering the boom into a horizontal position. If the SLI is overridden, the crane operation will not be monitored and the truck crane will overturn if you leave the permissible working range.

If the following prerequisites are met, lowering into the horizontal position with swing-away lattice and a slewing range of 360° is allowed and is monitored by the SLI.
To raise and set down the main boom with rigged swing-away lattice, the following prerequisites must be fulfilled:




– The current rigging mode with the rigged swing-away lattice is entered on the SLI, and the corresponding SLI code is displayed according to the *Lifting capacity table*.




– The current reeving type on the swing-away lattice is entered for the hoisting gear of which the hoist rope is reeved on the swing-away lattice.

– Apart from the hook block, no loads are attached to the swing-away lattice.

– The main boom is fully retracted.
The SLI only enables the raising and setting down of the main boom if the main boom is fully retracted.

Once all of the above prerequisites have been fulfilled, the SLI automatically switches to the rigging tables and derricking is then also enabled in the angle range below the working range of approximately 15°.

## 3.5.3 Telescoping with rigged swing-away lattice

**Risk of overloading the main boom**
When telescoping the main boom with the rigged swing-away lattice, you may not simultaneously slew the superstructure.
This prevents the main boom from being subjected to additional side forces and increased vibrations and becoming overloaded.

The telescoping of the main boom with a rigged swing-away lattice is monitored by the SLI. Telescoping is only enabled if the main boom is derricked to a certain angle and a maximum permissible load is not exceeded.

The required angle (between 70° and 78°) depends on the rigging mode of the truck crane.

The required main boom angle and the maximum permissible load (weight of the hook block) can be found in the *Lifting capacity tables*.

If the main boom angle is too small for telescoping with the rigged swing-away lattice, the SLI displays a corresponding error message.

The telescoping mechanism is operated in the same way as with the main boom; ➠ *Operating instructions GMK 4100/4100-L/5095*.



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## 3.5.4 Notes on the SLI shutdown

Operation with the swing-away lattice is monitored by the SLI.

When operating with the swing-away lattice, SLI shutdowns can occur for the same reasons as when operating with the main boom; ➠ *Operating instructions GMK 4100/4100-L/5095*.

**Additional reasons for a shutdown**

When operating with derricking swing-away lattice:

– Different lifting capacities are released for the angles of inclination of 0°, 0 – 20° and 20 – 40°. As a result, lowering the swing-away lattice can result in the SLI shutting down if the currently raised load in the recently set angle range is not permitted.

– With the above angles of inclination, the swing-away lattice can be derricked under load. If the current load is greater than that permitted for the angle range, the lowering of the swing-away lattice is switched off by the SLI.

– In the event of an SLI shutdown, the *Lower swing-away lattice* movement is disabled in addition to all other movements which increase the load moment.



## 3.5.5 Procedure if the permissible wind speed is exceeded

**Risk of accidents due to excessive wind speeds**
If the current wind speed is higher than the maximum permissible wind speed, stop operating the crane immediately and establish the corresponding rigging mode.
This will prevent the truck crane from overloading and overturning.

- Prior to and during crane operation, check whether the current wind speed is lower than the maximum permissible wind speed.
- Make sure you follow the instructions for checking the wind speed; ➠ *Lifting capacity table* and *Operating instructions GMK 4100/4100-L/5095.*

**If the maximum permissible wind speed is exceeded**

**No** automatic shutdown occurs if the maximum permissible wind speed is exceeded.

- Immediately stop operating the crane.
- Bring the truck crane into the rigging mode specified for the current wind speed in the *Lifting capacity table*.

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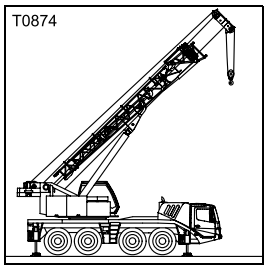
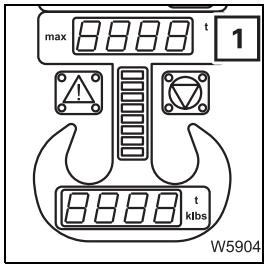
## 3.5.6 Notes on main boom operation with the folded / rigged swing-away lattice

**Folded**

This section applies to instances when the swing-away lattice is folded on the side.




If an swing-away lattice is folded on the side when operating with the main boom, the loads specified in the *Lifting capacity tables* are reduced.
The relevant formulas and examples used to calculate these values during operations planning can be found in the *Lifting capacity table*.

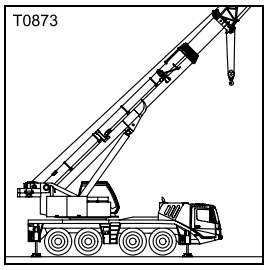



The reduced values are displayed directly on the *SLI* insert on the *Maximum load* display (**1**).

**Rigged**

This section applies when the swing-away lattice is rigged and pinned to the main boom head.

**Risk of overturning in impermissible rigging mode**
Main boom operation with a rigged swing-away lattice is only permissible in rigging modes that are also permissible for the rigged swing-away lattice (outrigger span, counterweight, slewing range).
If you establish rigging modes that only apply to main boom operation without a rigged swing-away lattice (e.g. *Free on wheels* working position), the truck crane could overturn during operation.




For main boom operation with a rigged swing-away lattice, you must enter the current rigging mode for the main boom without a swing-away lattice on the SLI.

The values specified in the corresponding *Lifting capacity table* for the lifting capacities and for the permissible wind speeds are reduced in this case.



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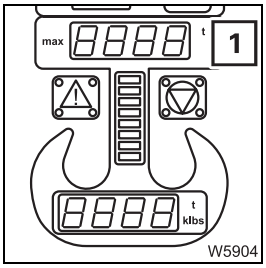
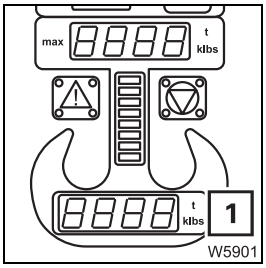
**Reduction of the lifting capacities**




The *Maximum load* display (**1**) does **not** show the reduced values.

The SLI also takes into account the load moment effected by the currently rigged swing-away lattice and switches off earlier accordingly.

Tables with values for reducing the lifting capacities can be found in the *Lifting capacity table*. The specified values for reduction are only maximum values for certain rigging modes (angle and length of main boom and lattice extension).




However, the SLI takes into account the value for the currently rigged swing-away lattice, adds the weight of the raised load and displays the sum on the *Current load* display (**1**).

As a result, the displayed value may deviate from the value that was previously calculated during operations planning.

In this case, the SLI is not defective. Do not override the SLI, even if the displayed value is higher than the calculated value.

**Risk of accidents with overridden SLI**
Do not under any circumstances override the SLI.
If the SLI is overridden, the crane operation will not be monitored and the truck crane will overturn if you leave the permissible working range.



## 3.5.7 Notes on two-hook operation

Notes on two-hook operation; ➠ *Turning loads*, p. 7 - 1.

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# 3.6 Finding and eliminating malfunctions

| Malfunction | Cause | Remedy |
|---|---|---|
| **Lifting limit switch switches off** (lamp ▽ is on) | Lifting limit switch not connected | Connect the lifting limit switch; ➠ p. 3 - 68. |
| | The connection for the lifting limit switch on the main boom head is not overridden.<br>A second lifting limit switch is connected to the main boom and is not disabled. | Override the lifting limit switch on the main boom head; ➠ p. 3 - 68. |
| | For 10 m (33 ft): Electrical connection between main boom head and section 1 is not established.<br>The bridging plug is not inserted in the socket to the front of section 1. | Establish the electrical connection; ➠ p. 3 - 61.<br>Insert the bridging plug; ➠ p. 3 - 62. |
| | For 17 m (56 ft): Electrical connection between main boom head and section 1 is not established.<br>Electrical connection between section 1 and section 2 is not established. | Establish the electrical connection; ➠ p. 3 - 63.<br>Establish the electrical connection; ➠ p. 3 - 63. |
| **The main boom cannot be telescoped with the rigged lattice extension** | The main boom is at an impermissible angle. | Derrick the main boom to the required angle; ➠ p. 3 - 90. |
| **The lattice extension cannot be derricked** | Derricking gear of the lattice extension is switched off | Switch on the derricking gear of the lattice extension; ➠ p. 3 - 3. |
| | The electrical connection has been undone. | Establish the electrical connection; ➠ p. 3 - 61. |
| | The hydraulic connection has been disconnected. | Establish the hydraulic connection; ➠ p. 3 - 35. |
| | The specified SLI code does not apply to operation with the lattice extension. | Enter the SLI code for operation with the lattice extension; ➠ p. 3 - 87. |
| | Current load greater than derricking load – *Lower lattice extension* movement disabled. SLI error code **5 02 6** is displayed. | 1. Raise the lattice extension.<br>2. Press the CE button once.<br>3. If necessary, increase the working radius with the *Lower main boom* movement. |



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# 4 Boom extension





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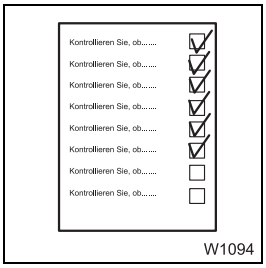
# 4 Boom extension

## 4.1 Rigging work checklists

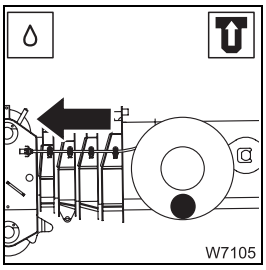
For GMK 4100-L and GMK 5095, only the 22 m (72 ft) boom extension is delivered.

### 4.1.1 CHECKLIST: Rigging the 22 / 27 m (72 / 89 ft) boom extension

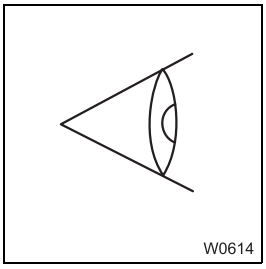
This checklist is no complete set of operating instructions. There are accompanying operating instructions which are referred to by cross-references. **Observe the warnings and safety instructions specified there.**




1. Rig the truck crane:
   - Rig the truck crane according to the *CHECKLIST: Rigging;* ➠ *Operating instructions* of the truck crane.
   - Before operating the crane, check according to the *CHECKLIST: Checks before crane operation;* ➠ *Operating instructions* of the truck crane.
   - Fully retract the main boom and lower it into a horizontal position.
   - Roll up the unused hoist rope onto the drum.
2. If the swing-away lattice is folded up on the side of the main boom, remove the swing-away lattice; ➠ p. 3 - 10.




3. With derricking swing-away lattice:
   - Check whether the locking device on the hose drum is undone; ➠ p. 3 - 33.
   - Bring the hydraulic hoses into the position for operating with the lattice extension; ➠ p. 3 - 34.




4. Check whether the transport condition of the swing-away lattice has been established; ➠ *Transport condition with removed swing-away lattice*, p. 3 - 29.



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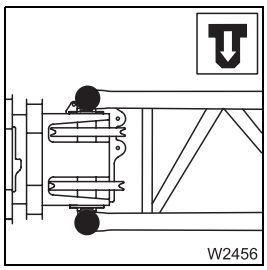
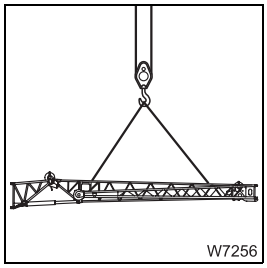
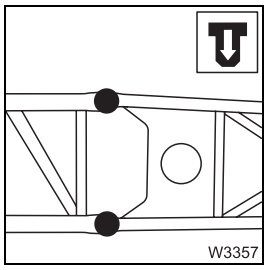



5. Sling the necessary sections onto the auxiliary crane one after the other and install them in front of the main boom:
   - For 22 m (72 ft) boom extension, section 3
   - For 27 m (89 ft) boom extension, first section 3 and then section 4;

   ➠ *Slinging points*, p. 2 - 5.
   ➠ *Installing / removing section 3 and section 4*, p. 4 - 9.

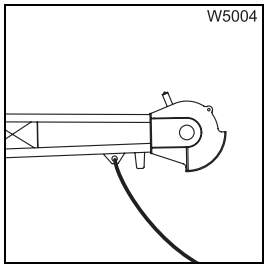



6. Sling the folded swing-away lattice on the auxiliary crane and fasten the guide rope; ➠ *Slinging points*, p. 2 - 5.

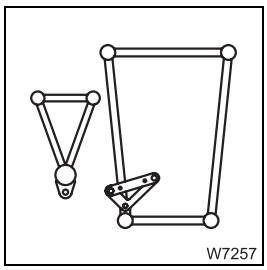



7. Folded swing-away lattice:
   - For 22 m (72 ft) boom extension, install in front of section 3.
   - For 27 m (89 ft) boom extension, install in front of section 4;

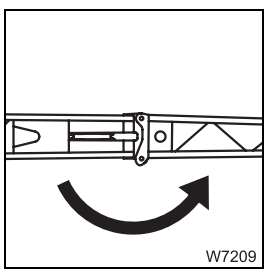
   ➠ *Installing / removing the swing-away lattice for the boom extension*, p. 4 - 11.




8. Fasten the guide rope to the head of section 2 of the swing-away lattice.




9. Move the connection in the *Middle* area into the *On section 1* position; ➠ p. 3 - 43.




10. Swing section 2 in front of section 1; ➠ *When rigging – section 2*, p. 3 - 57.



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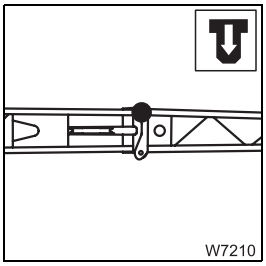
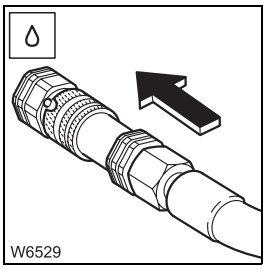
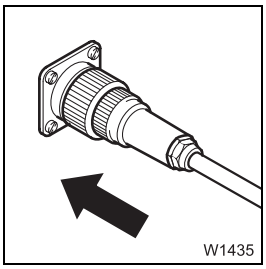



**11.** Establish the connection on the left between section 2 and section 1;
➠ *Establishing / undoing connections at the swing-away lattice*, p. 3 - 59.

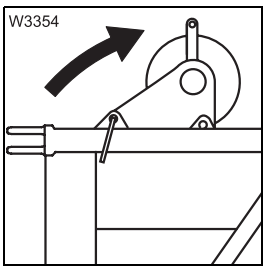



**12.** Only applies to the derricking swing-away lattice.

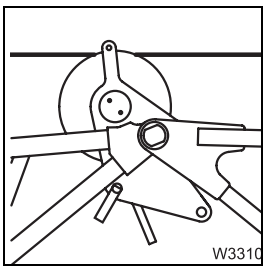
Establish the hydraulic connection;
➠ *Main boom connection – section 3*, p. 4 - 13,
➠ *Connection to the swing-away lattice*, p. 4 - 14.



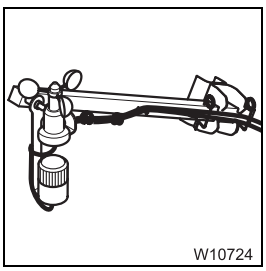

**13.** Establish the electrical connections;
➠ *Main boom connection – section 3*, p. 4 - 16,
➠ *Connection to the swing-away lattice*, p. 4 - 17.




**14.** Fold out the deflection sheaves on all sections;
➠ *Folding out deflection sheaves*, p. 3 - 64.
➠ *Fold in / out the deflection sheave on section 3*, p. 4 - 18.




**15.** Place the hoist rope on the boom extension; ➠ *Applying / removing the hoist rope*, p. 4 - 19.




**16.** Install the anemometer and establish an electrical connection for the air traffic control light if necessary;
➠ *Installing / removing the anemometer*, p. 3 - 71,
➠ *Air traffic control light – electrical connection*, p. 3 - 73.



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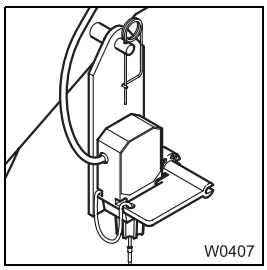
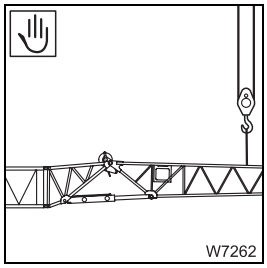
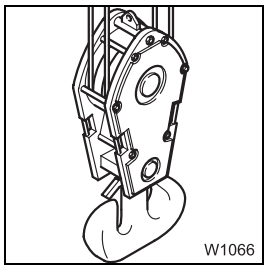



**17.** Install the lifting limit switch; ➠ *Installing / removing the lifting limit switch*, p. 3 - 68.

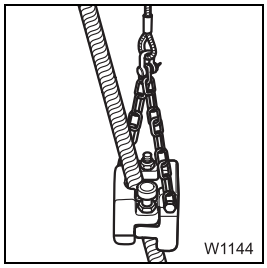



**18.** Only applies to the inclinable swing-away lattice.

Set an angle of 20° or 40°;
➠ *Setting the angle – with an auxiliary crane*, p. 3 - 79.
➠ *Setting the angle – without auxiliary crane*, p. 3 - 80.

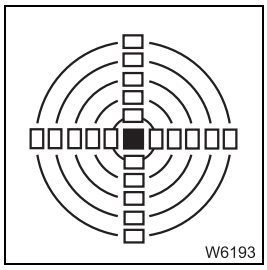



**19.** Reeve the hoist rope; ➠ *Possible reeving methods*, p. 4 - 20.

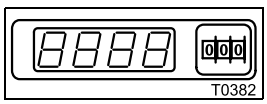



**20.** Attach the lifting limit switch weight and lay it around the hoist rope;
➠ *Operating instructions* of the truck crane.






**21.** Check the horizontal alignment of the truck crane and correct it if necessary.




**22.** Enter the current rigging mode on the SLI; ➠ *Setting the SLI*, p. 3 - 87.

Operation with the boom extension is carried out in the same way as with the swing-away lattice.
➠ *Derricking the main boom*, p. 3 - 89,
➠ *Telescoping with rigged swing-away lattice*, p. 3 - 90,
➠ *Notes on the SLI shutdown*, p. 3 - 91.

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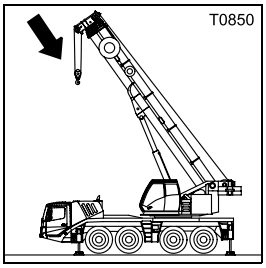
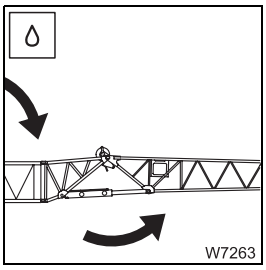
## 4.1.2 CHECKLIST: Unrigging the 22 / 27 m (72 / 89 ft) boom extension

This checklist is no complete set of operating instructions. There are accompanying operating instructions which are referred to by cross-references. **Observe the warnings and safety instructions specified there.**

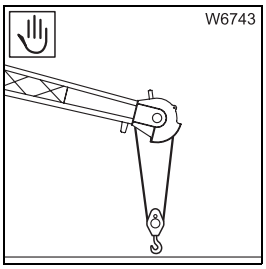
**Prerequisites:**
– An auxiliary crane is available.



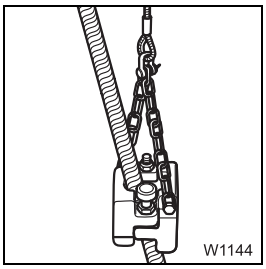

1. Fully retract the main boom; ➠ *Telescoping with rigged swing-away lattice*, p. 3 - 90.



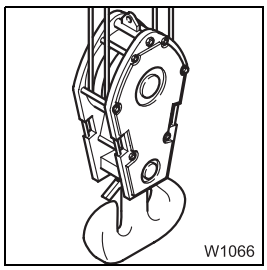

2. Only applies to the derricking swing-away lattice.
   – Raise the swing-away lattice completely; ➠ *Derricking the swing-away lattice*, p. 3 - 75.
   – Lower the main boom into a horizontal position; ➠ p. 3 - 89.



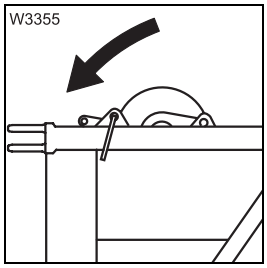

3. Only applies to the inclinable swing-away lattice.
   Lower the main boom until the lattice extension is at the correct height to unreeve the hook block.



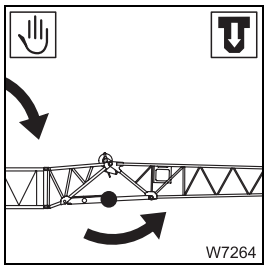

4. Take off the lifting limit switch weight and remove the lifting limit switch; ➠ *Installing / removing the lifting limit switch*, p. 3 - 68.




5. Unreeve the hoist rope from the hook block and remove it from the lattice extension; ➠ *Applying / removing the hoist rope*, p. 4 - 19.

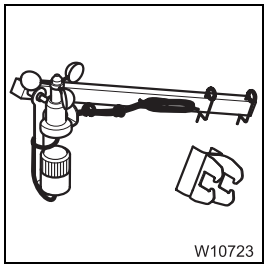



6. Remove the hoist rope and fold in the deflection sheaves on all sections of the boom extension; ➠ *Applying / removing the hoist rope*, p. 4 - 19,
➠ *Folding in deflection sheaves*, p. 3 - 65,
➠ *Folding in the deflection sheave*, p. 4 - 18.

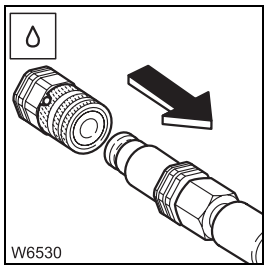



7. Only applies to the inclinable swing-away lattice.

   At angles of 20° or 40°, set the angle to 0°;
   ➠ *Setting the angle – with an auxiliary crane*, p. 3 - 79,
   ➠ *Setting the angle – without auxiliary crane*, p. 3 - 80.

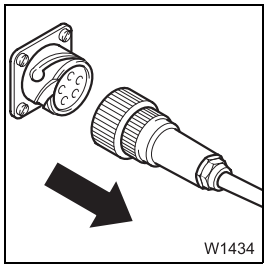



8. Remove the anemometer; ➠ *Installing / removing the anemometer*, p. 3 - 71.




9. Only applies to the inclinable swing-away lattice.

   Disconnect the hydraulic connection;
   ➠ *Main boom connection – section 3*, p. 4 - 13,
   ➠ *Connection to the swing-away lattice*, p. 4 - 14.




10. Disconnect the electrical connections;
    ➠ *Main boom connection – section 3*, p. 4 - 16,
    ➠ *Connection to the swing-away lattice*, p. 4 - 17.



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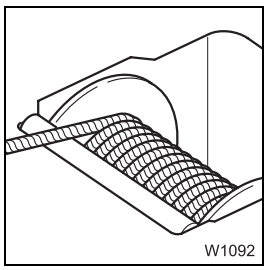
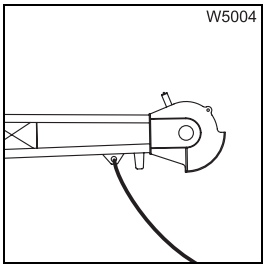
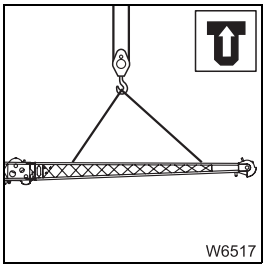



**11.** Reel the hoist rope up to the main boom head.



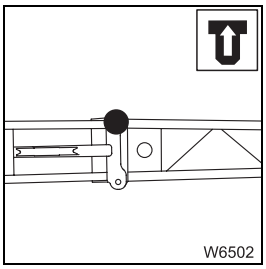

**12.** Fasten the guide rope to the front of section 2.



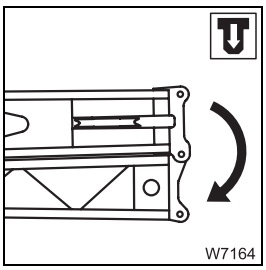

**13. If section 2 is to be removed:**

– Sling section 2 onto the auxiliary crane; ➠ *Slinging points*, p. 2 - 5.
– Remove the locking pins between section 2 and section 1; ➠ p. 3 - 59.
– Set down section 2 on the separate vehicle.

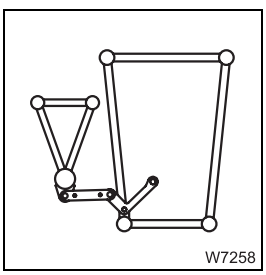
After removing section 2, continue with **point 17.**



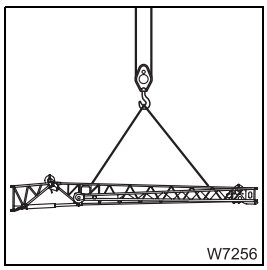

**14.** Undo the connection on the left between section 2 and section 1; ➠ *Section 1 and section 2 installed*, p. 3 - 59.



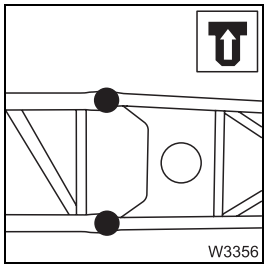

**15.** Swing section 2 to the side of section 1; ➠ *When unrigging – section 2*, p. 3 - 58.



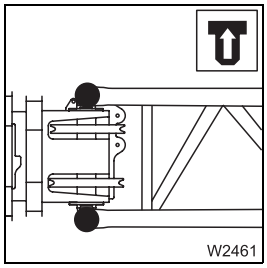

**16.** Move the connection in the *Middle* area into the *Section 1 / section 2* position; ➠ p. 3 - 42.




**17.** Sling the swing-away lattice on the auxiliary crane and fasten the guide rope; ➠ *Slinging points*, p. 2 - 5.




**18.** Remove the folded swing-away lattice; ➠ *Installing / removing the swing-away lattice for the boom extension*, p. 4 - 11.

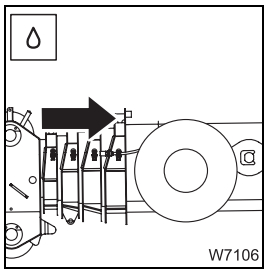



**19.** Sling the rigged sections on the auxiliary crane one after the other and remove them from the main boom:

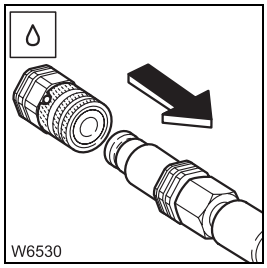
– With the 22 m (72 ft) boom extension, section 3
– With the 27 m (89 ft) boom extension, section 4 and section 3;

➠ *Slinging points*, p. 2 - 5.

➠ *Installing / removing section 3 and section 4*, p. 4 - 9




**20.** Only applies to the derricking swing-away lattice:
– Move the hydraulic hoses into the main boom operation position;
➠ p. 3 - 34.




**21.** Only applies to the derricking swing-away lattice.

Undo the hydraulic connection; ➠ p. 3 - 35.



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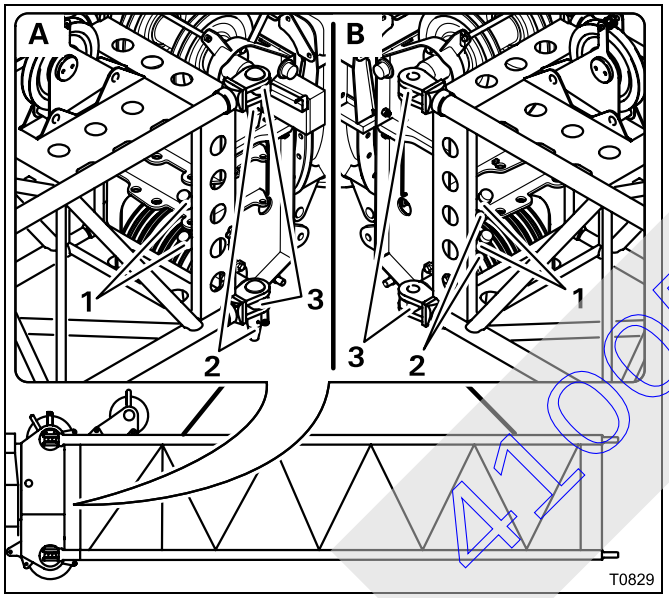
# 4.2 Description of the rigging work

## 4.2.1 Installing / removing section 3 and section 4

**Risk of damage to connection cables and hydraulic hoses**
Before the removal, check whether the electrical and hydraulic connections have been disconnected.
This will prevent damage to the connection cables and hydraulic hoses during the removal.

**Section 3**



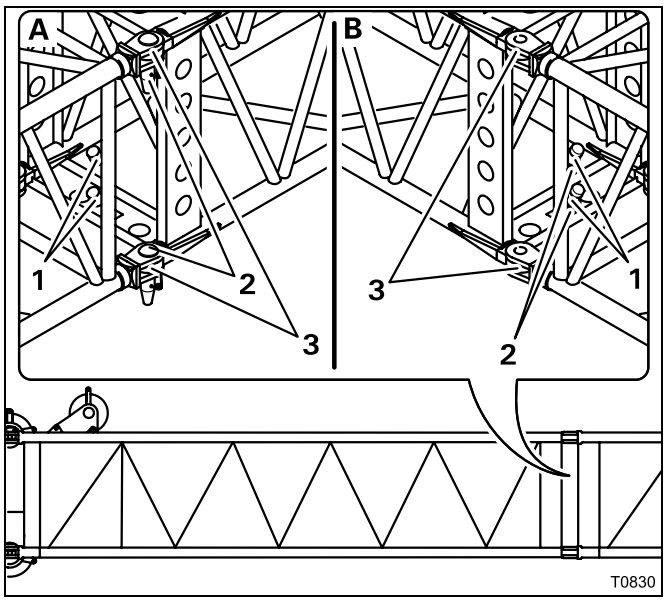

**Installing**

- (**A**) – Sling section 3; ➠ p. 2 - 9.
- Raise section 3 in front of the main boom head so that the connecting points (**3**) are in line on both sides.
- Take the pins out of the holders (**1**).
- Insert the pins (**2**) in the connecting points (**3**).
- Secure the pins with the retaining pins.
- Carry out the procedure on the other side.

**Removing**

- (**B**) – Sling section 3; ➠ p. 2 - 9.
- Check whether the electrical and hydraulic connections have been disconnected;
  ➠ *Hydraulic connection at the boom extension*, p. 4 - 12,
  ➠ *Electrical connection on the boom extension*, p. 4 - 15.
- Take the pins (**2**) out of the connecting points (**3**).
- Insert the pins in the holders (**1**).
- Secure the pins with retaining pins.
- Carry out the procedure on the other side.
- Set down section 3.

## Section 4




### Installing

- (**A**) – Sling section 4; ➠ p. 2 - 9.
- Raise section 4 in front of the main boom head so that the connecting points (**3**) are in line on both sides.
- Take the pins out of the holders (**1**).
- Insert the pins (**2**) in the connecting points (**3**).
- Secure the pins with the retaining pins.
- Carry out the procedure on the other side.

### Removing

- (**B**) – Sling section 4; ➠ p. 2 - 9.
- Check whether the electrical and hydraulic connections have been disconnected;
  ➠ *Hydraulic connection at the boom extension*, p. 4 - 12,
  ➠ *Electrical connection on the boom extension*, p. 4 - 15.
- Take the pins (**2**) out of the connecting points (**3**).
- Insert the pins in the holders (**1**).
- Secure the pins with retaining pins.
- Carry out the procedure on the other side.
- Set down section 4.



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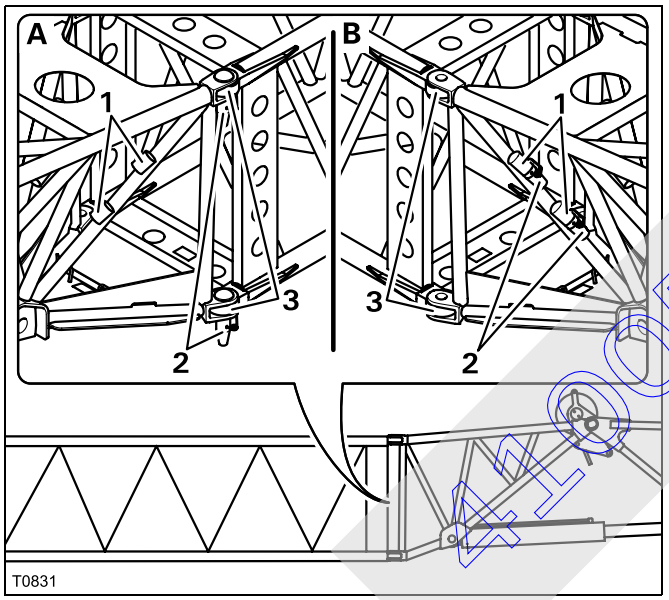
## 4.2.2 Installing / removing the swing-away lattice for the boom extension

You can install the swing-away lattice folded in front of each other or together in front of section 3 or section 4.

**Risk of damage to connection cables and hydraulic hoses**
Before the removal, check whether the electrical and hydraulic connections have been disconnected.
This will prevent damage to the connection cables and hydraulic hoses during the removal.



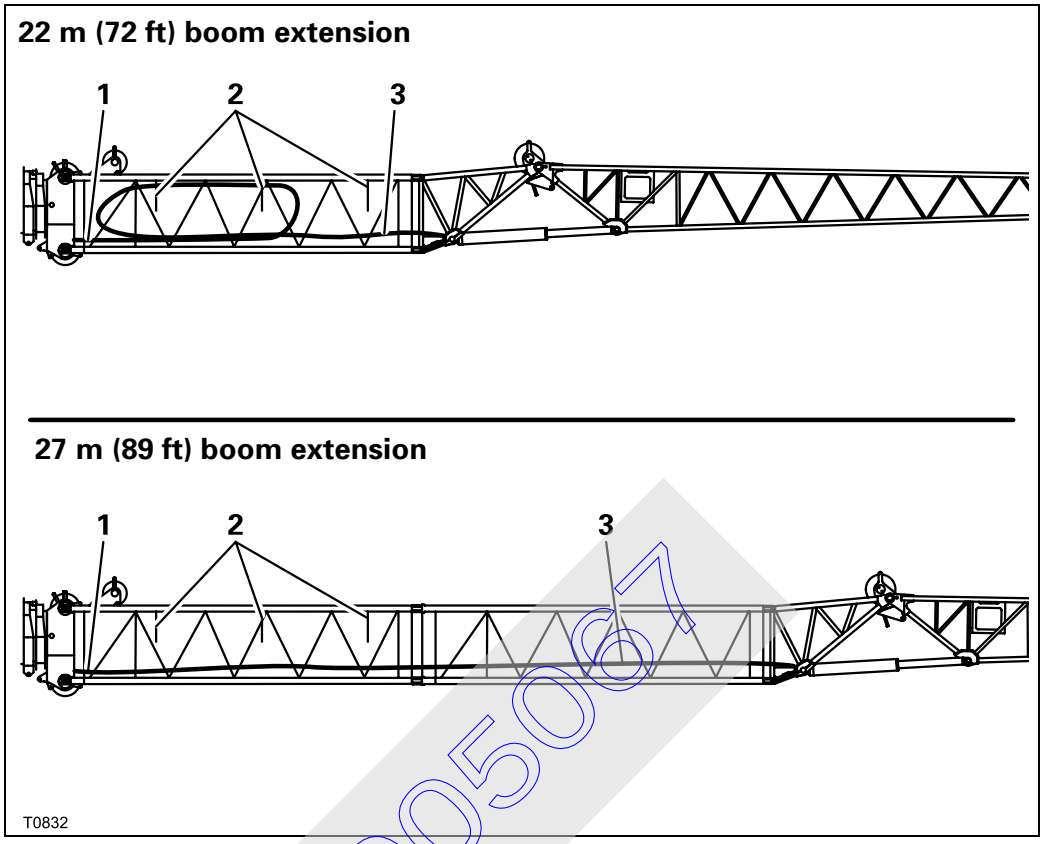

**Installing**

- (**A**) – Sling the swing-away lattice; ➠ p. 2 - 5.
- Lift the lattice extension in front of the main boom head so that the connecting points (**3**) are in line on both sides.
- Take the pins out of the holders (**1**).
- Insert the pins (**2**) in the connecting points (**3**).
- Secure the pins with the retaining pins.
- Carry out the procedure on the other side.

**Removing**

- (**B**) – Sling the swing-away lattice; ➠ p. 2 - 5.
- Check whether the electrical and hydraulic connections have been disconnected;
  ➠ *Hydraulic connection at the boom extension*, p. 4 - 12,
  ➠ *Electrical connection on the boom extension*, p. 4 - 15.
- Take the pins (**2**) out of the connecting points (**3**).
- Insert the pins in the holders (**1**).
- Secure the pins with the retaining pins.
- Carry out the procedure on the other side.
- Set down the lattice extension and check the transport condition;
  ➠ *Transport condition with removed swing-away lattice*, p. 3 - 29.

## 4.2.3 Hydraulic connection at the boom extension






This section only applies to the hydraulically derricking lattice extension.

The hoses are attached in section 3 in such a way that short ends (**1**) protrude out of section 3 at the rear and long ends (**3**) at the front.

With the 22 m (72 ft) boom extension, the long ends (**3**) are attached to the holders (**2**).

If the 27 m (89 ft) boom extension is rigged, the long ends (**3**) are laid through section 4. The holders (**2**) are not used.

The short ends (**1**) of the hoses are at the rear on the lower cross-strut.

The allocation of the quick release couplings is determined by the shapes and sizes.

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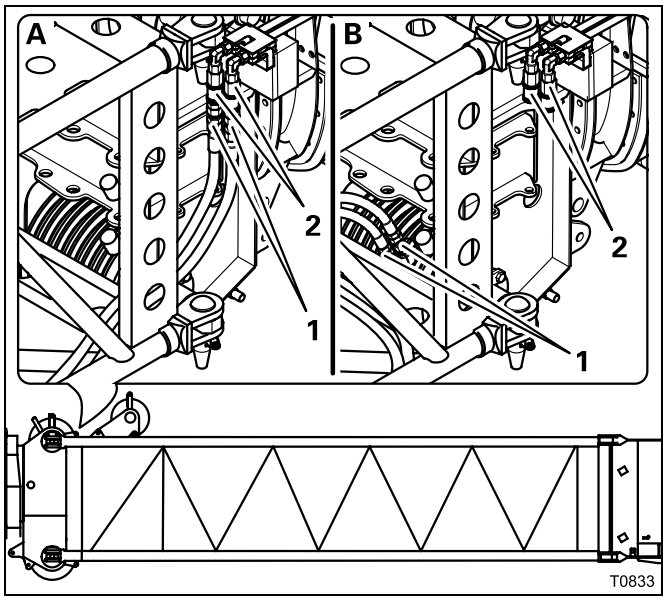
## Main boom connection – section 3



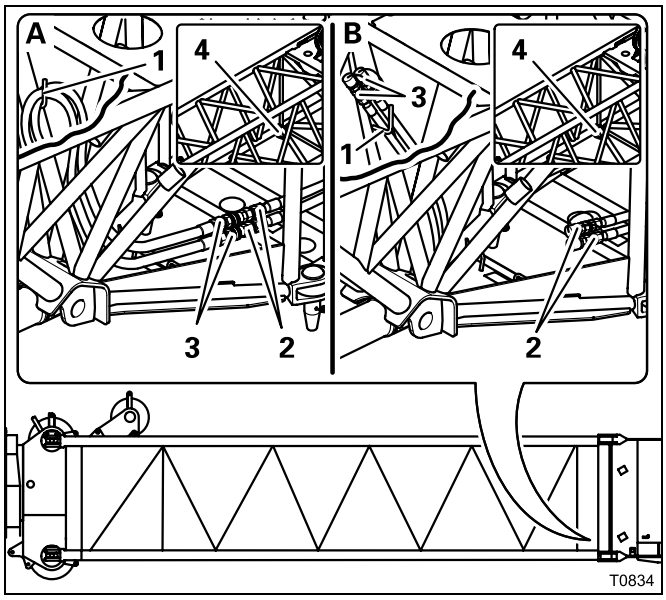

### (A) – Establishing the connection

- If necessary, bring the connections (**2**) on the left side of the main boom head into the position for operating with the lattice extension; ➠ p. 3 - 34.
- Lay the short ends (**1**) on the left-hand side out of section 3 and up to the main boom head.
- Remove the protective caps and connect the short ends (**1**) to the connections (**2**).

### (B) – Disconnecting the connection

- Disconnect the short ends (**1**) from the connections (**2**).
- Close the short ends and the connections with the protective caps.
- Guide the short ends (**1**) on the left in section 3 and lay them in front of the lower cross-strut so that they hang out of section 3 when raising.

## Connection to the swing-away lattice




### (A) – Establishing the connection

- Remove the long ends (**2**) from the holders (**4**) in section 3.
- Lay the long ends (**2**) through section 3 as far forward as possible to section 1.
- Remove the hoses (**3**) from the holder (**1**) in section 1.
- Remove the protective caps and connect the hoses (**3**) with the long ends (**2**).
- Secure the hose lines at the holder (**4**) in section 3 to ensure they do not hang out during operation.

### (B) – Disconnecting the connection

- Disconnect the hoses (**3**) from the long ends (**2**).
- Close the short ends and the hoses with the protective caps.
- Secure the hoses (**3**) at the holder (**1**) in section 1.
- Lay the long ends (**2**) to the rear through section 3.
- Secure the long ends (**2**) to the holders (**4**) in section 3 to prevent them from hanging out during transport.



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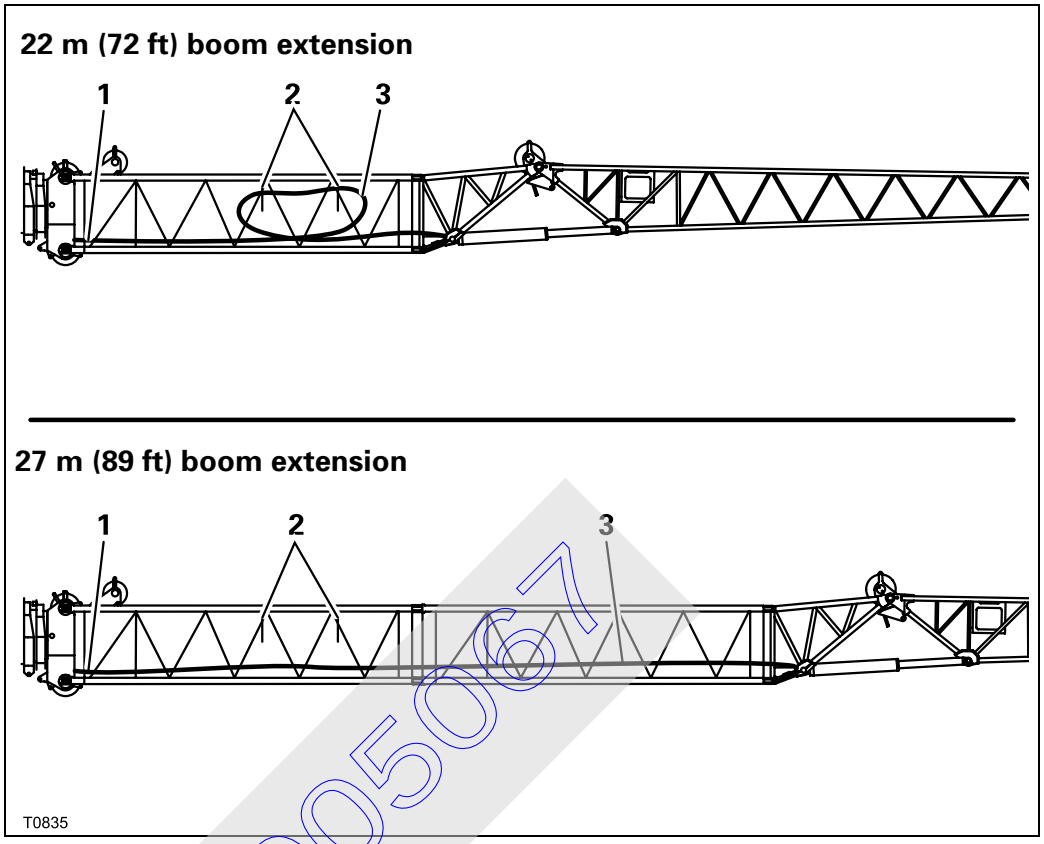
## 4.2.4 Electrical connection on the boom extension



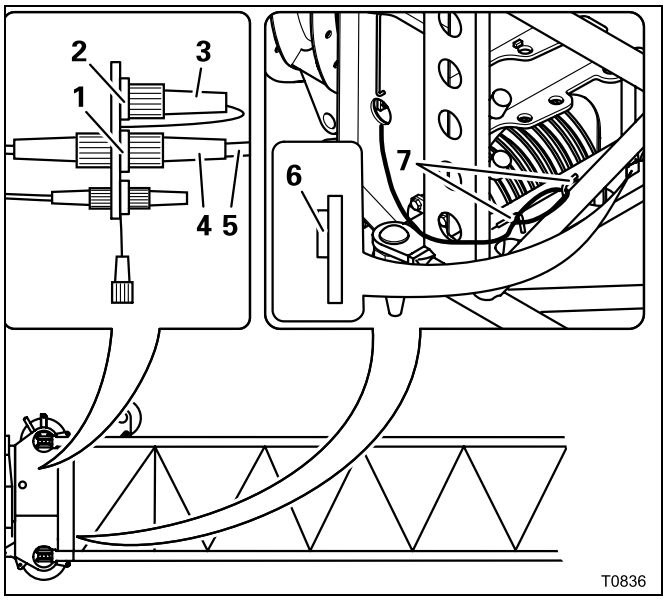



The cable is attached in section 3. The short end (**1**) is at the rear and the long end (3) at the front.

If the 22 m (72 ft) boom extension is rigged, the long end (**3**) of the cable is wound at on holders (**2**).

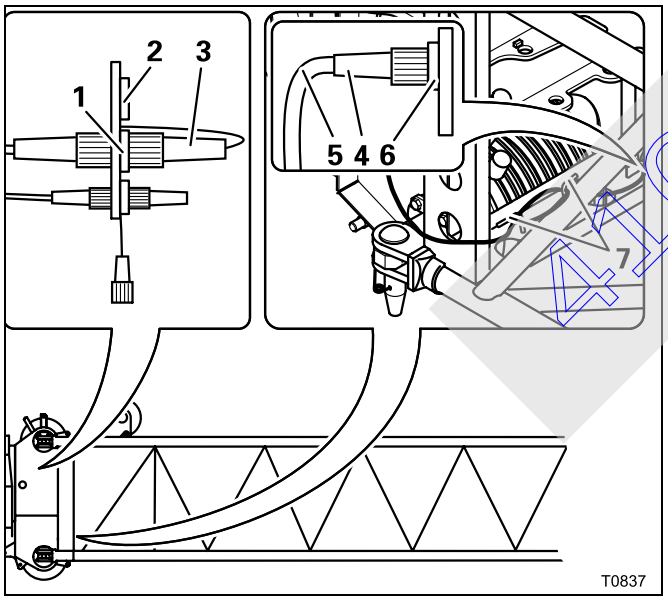
With rigged 27 m (89 ft) boom extension, the long end (**3**) of the cable is pulled through section 4 to the front. The holders (**2**) are not used.

## Main boom connection – section 3




### Establishing the connection

- Remove the bridging plug (**3**) from the socket (**1**) and plug it into the dummy socket (**2**).
- Unwind the cable (**5**) from the holder (**7**).
- Remove the plug (**4**) from the dummy socket (**6**) and plug it into the socket (**1**).
- Wind up the cable (**5**) on the holder (**7**) until it does not sag.




### Undoing the connection

- Remove the plug (**4**) from the socket (**1**) and plug it into the dummy socket (**6**).
- Wind the cable (**5**) onto the holder (**7**).
- Remove the bridging plug (**3**) from the dummy socket (**2**) and plug it into the socket (**1**).



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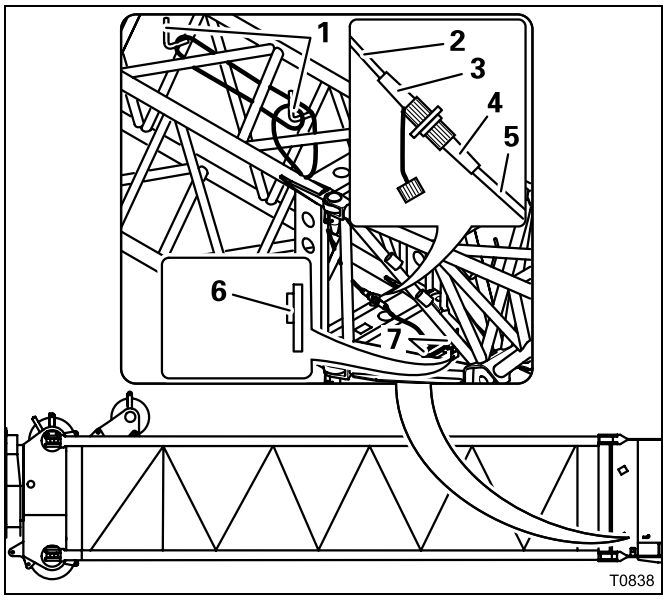
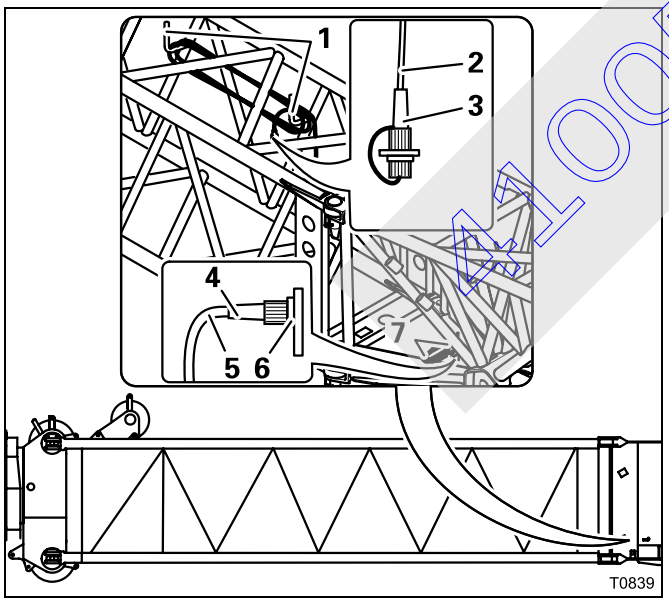
## Connection to the swing-away lattice




### Establishing the connection

- Unwind the cable (**2**) from the holder (**1**) in section 3.
- Lay the cable (**2**) as far forward as possible to section 1.
- Pull the protective cap off the socket (**3**).
- Unwind the cable (**5**) from the holder (**7**).
- Remove the plug (**4**) from the dummy socket (**6**) and plug it into the socket (**3**).
- Wind up the cable (**5**) on the holder (**7**) until it does not sag.
- Wind up the cable (**2**) on the holder (**1**) until it does not sag.




### Undoing the connection

- Remove the plug (**4**) from the socket (**3**) and plug it into the dummy socket (**6**).
- Wind the cable (**5**) onto the holder (**7**).
- Cover the socket (**3**) with the protective cap.
- Lay the cable (**2**) to the rear through section 4 and section 3.
- Wind up the cable (**2**) on the holder (**1**) in section 3.



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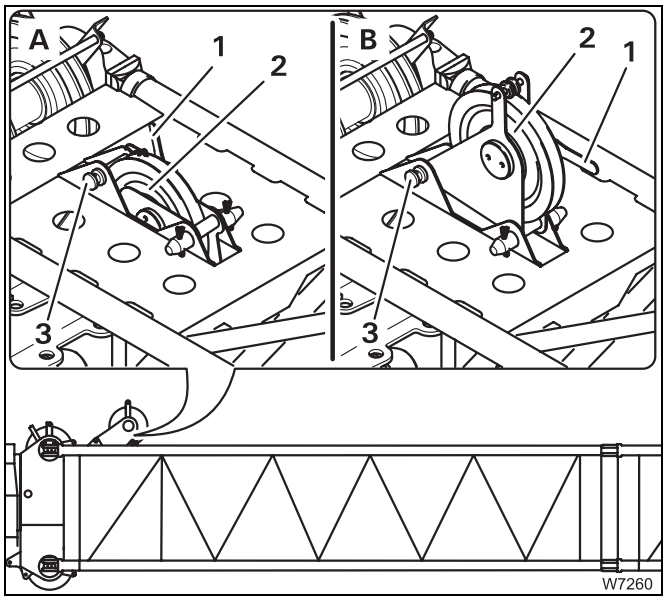
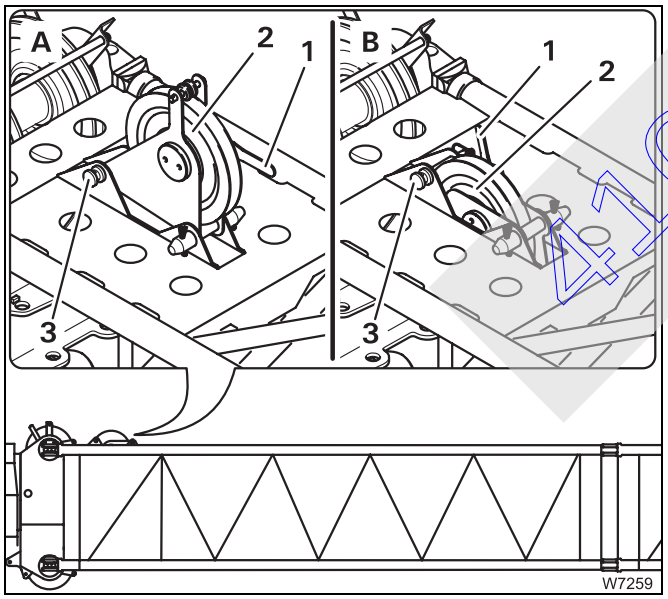
## 4.2.5 Fold in / out the deflection sheave on section 3

To fold the deflection sheaves on section 1 in and out; ➠ p. 3 - 64.




**Folding out the deflection sheave**

- (**A**) – Undo the retaining pin for the pin (**3**).
- Hold the deflection sheave tight by the handle (**1**) and pull out the pin (**3**).
- (**B**) – Fold the deflection sheave (**2**) upwards and fasten it in this position with the pin (**3**).
- Secure the pin (**3**) with the retaining pin.




**Folding in the deflection sheave**

- (**A**) – Undo the retaining pin for the pin (**3**).
- Hold the deflection sheave tight by the handle (**1**) and pull out the pin (**3**).
- (**B**) – Fold the deflection sheave (**2**) downwards and fasten it in this position with the pin (**3**).
- Secure the pin (**3**) with the retaining pin.



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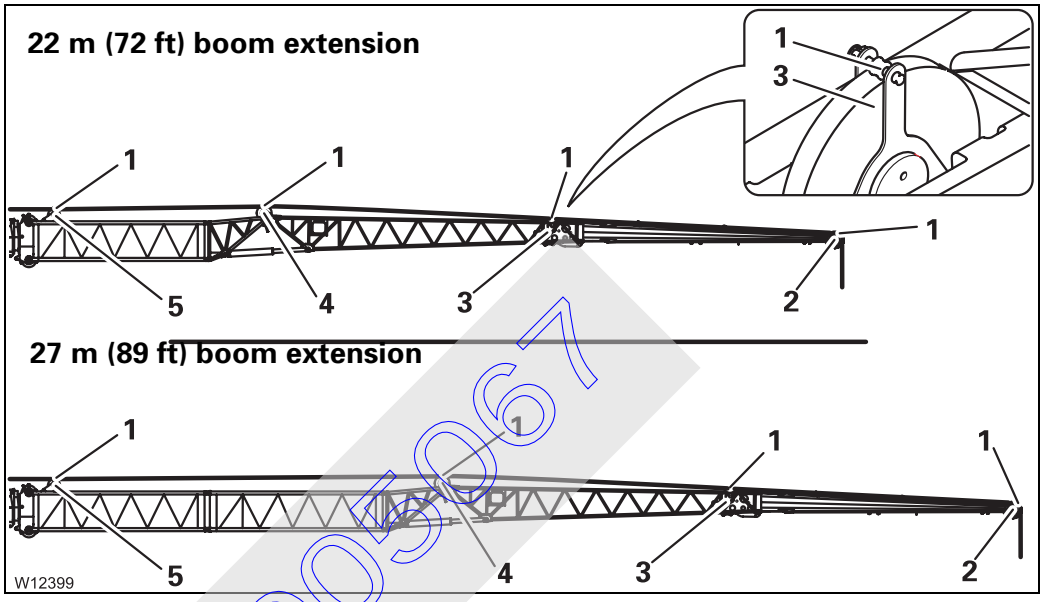
## 4.2.6 Applying / removing the hoist rope

**Risk of accidents due to falling parts**
Secure the rope protection rollers and rods always with retaining pins. This will prevent elements from becoming loose, falling down and injuring persons.






**Applying the hoist rope**

- Remove the sheaves (**1**).
- Lay the hoist rope over the deflection sheaves (**5**), (**4**), (**3**) and over the head sheave (**2**) to section 1.
- Put all sheaves (**1**) back in place and secure them with retaining pins.
- Attach the hook tackle or the hook block. The hoist rope can only be reeved once on the boom extension; ➠ p. 4 - 20.

**Removing the hoist rope**

- Unreeve the hook block.
- Remove the sheaves (**1**).
- Take the hoist rope off the head sheave (**2**) and the deflection sheaves (**5**), (**4**), (**3**) and lay it on the left side on the ground.
- Put all sheaves (**1**) back in place and secure them with retaining pins.

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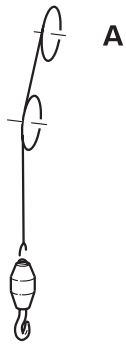
## Possible reeving methods

**Single-sheave** hook block
Max. lifting capacity of the hook block 20 t (44 000 lbs)
**Max. lifting capacity with the GMK 4100/4100-L/5095:**

**A** with single reeving 5.7 t (12 500 lbs)


**Hook tackle**
Max. lifting capacity of the hook tackle 8 t (17 600 lbs)
**Max. lifting capacity with the GMK 4100/4100-L/5095:**

**A** with single reeving 5.7 t (12 500 lbs)

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# 4.3 Operation with boom extension

When operating with the boom extension, the maximum speed for the different power units is limited to 70%, ➠ *Operating instructions* of the truck crane.

**Risk of overturning when operating with the boom extension**
No hook block may be reeved on the main boom when operating with the boom extension.
It is not permitted to operate with the main boom with the boom extension rigged.

**Risk of accidents due to overloading**
Lifting a load with two hooks with the boom extension rigged is not permitted.

The hoisting, lowering, slewing, derricking and telescoping operations are carried out in the same way as when operating with the main boom. This section only contains information additionally required with a rigged boom extension.



## 4.3.1 Setting the SLI

**When operating with the boom extension**

Components which have to be entered additionally on the SLI:

**With derricking boom extension:** the length

**With inclinable boom extension:** the length and the angle

Set the SLI ➠ *Entering the SLI code*, p. 3 - 88.

No hook block may be reeved on the main boom when operating with the boom extension.

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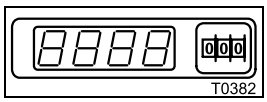
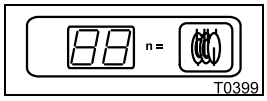
## 4.3.2 Derricking the main boom

**Risk of accidents with overridden SLI**
Do not override the SLI when lowering the boom into a horizontal position. If the SLI is overridden, the crane operation will not be monitored and the truck crane will overturn if you leave the permissible working range.

If the following prerequisites are met, erecting and setting down the main boom with rigged boom extension and a slewing range of 360° is permitted and is monitored by the SLI:




– The current rigging mode with the rigged boom extension is entered on the SLI, and the corresponding SLI code is displayed according to the *Lifting capacity table*.




– The current reeving type on the boom extension is entered for the hoisting gear of which the hoist rope is reeved on the boom extension.

– Apart from the hook block, no load is attached to the boom extension.

– The main boom is fully retracted.

Once all of the above prerequisites have been fulfilled, the SLI automatically switches to the rigging tables and derricking is then also enabled in the angle range below the working range of approximately 15°.



## 4.3.3 Telescoping with rigged boom extension

**Risk of overloading the main boom**
When telescoping the main boom with the rigged boom extension, you may not simultaneously slew the superstructure.
This prevents the main boom from being subjected to additional side forces and increased vibrations and becoming overloaded.

Telescoping is only enabled by the SLI if the main boom is derricked to a certain angle and a maximum permissible load is not exceeded.

The required angle (between 70° and 80°) depends on the rigging mode of the truck crane.

You can find the required main boom angle and the maximum permissible load (weight of the hook block) in the *Lifting capacity tables* in the chapter titled *Boom extension rigging tables*.

If the main boom angle is too small for telescoping with the boom extension, the SLI displays a corresponding error message.

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## 4.3.4 Notes on the SLI shutdown

Operation with the boom extension is monitored by the SLI.

When operating with the boom extension, SLI shutdowns may occur for the same reasons as when operating with the main boom; ➠ *Operating instructions* of the truck crane.

If the derricking swing-away lattice is rigged when operating with the boom extension, there are other reasons which may result in an SLI shutdown; ➠ p. 3 - 91.

## 4.3.5 Procedure if permissible wind speed is exceeded

**Risk of accidents due to excessive wind speeds**
If the current wind speed is higher than the maximum permissible wind speed, stop operating the crane immediately and establish the corresponding rigging mode.
This will prevent the truck crane from overloading and overturning.

- Prior to and during crane operation, check whether the current wind speed is lower than the maximum permissible wind speed.
- Make sure you follow the instructions for checking the wind speed; ➠ *Lifting capacity table*; ➠ *Operating instructions* of the truck crane.

**If the maximum permissible wind speed is exceeded**

**No** automatic shutdown occurs if the maximum permissible wind speed is exceeded.

- Immediately stop operating the crane.
- Bring the truck crane into the rigging mode specified for the current wind speed in the *Lifting capacity table*.



## 4.3.6 Notes on two-hook operation

Notes on two-hook operation; ➠ *Turning loads*, p. 7 - 1.

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# 5 Auxiliary single-sheave boom top

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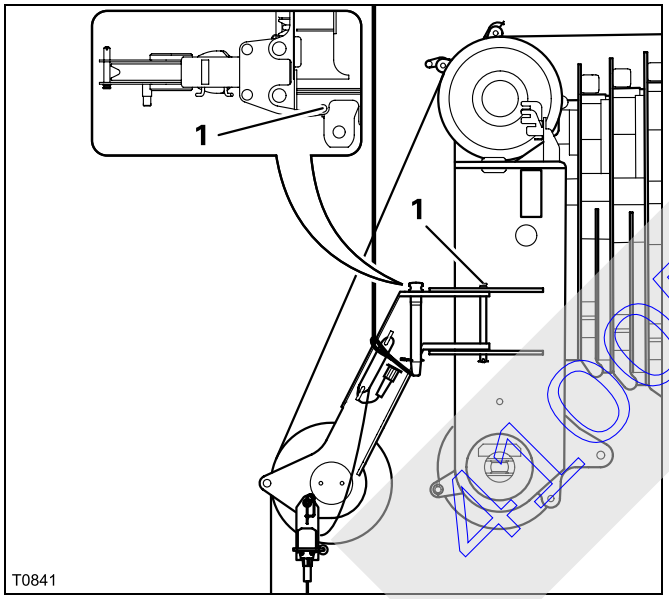
# 5 Auxiliary single-sheave boom top

## 5.1 Installation / removal

### 5.1.1 Installing / removing the auxiliary single-sheave boom top

**Installing**




- Sling the auxiliary single-sheave boom top; ➠ p. 2 - 10.
- Pull out the pin (**1**).
- Raise the auxiliary single-sheave boom top onto the holder.
- Align the auxiliary single-sheave boom top so that the bearing points are in line with the front bores in the holder.
- Insert the pin (**1**) and secure it with a linch-pin.
- Bring the auxiliary single-sheave boom top into transport position or working position; ➠ *Rigging the auxiliary single-sheave boom top*, p. 5 - 3.



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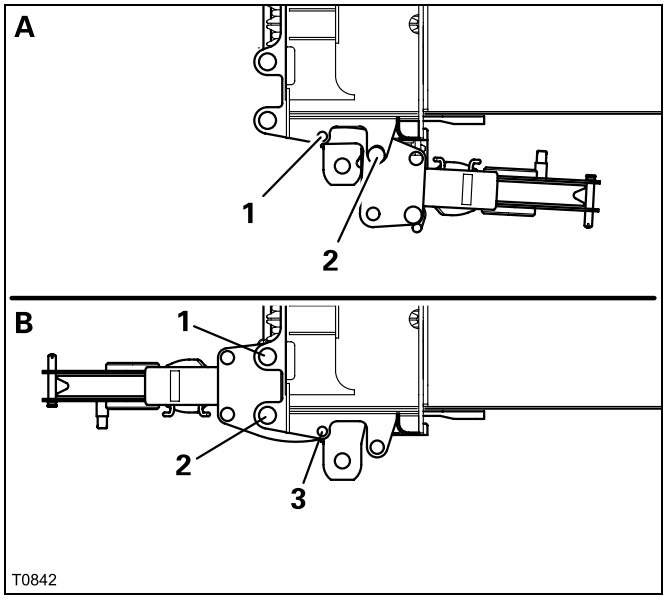
## Removing



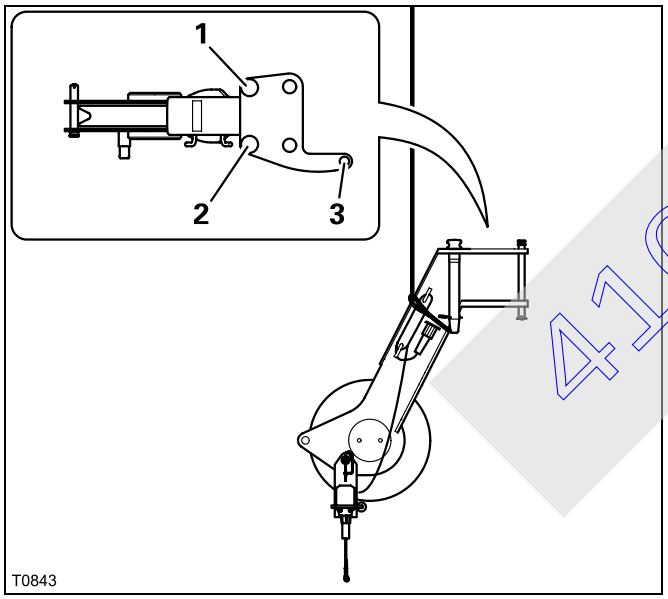

- Sling the auxiliary single-sheave boom top; ➠ p. 2 - 10.

**(A) – In transport position**

- Pull out the pins (**1**) and (**2**).

**(B) – In working position**

- Pull out the pins (**1**), (**2**) and (**3**).




- Raise the auxiliary single-sheave boom top from the main boom head.
- Insert the pins (**1**) and (**2**) in the bearing points.
- Insert the thin pin (**3**) in the bearing point.
- Secure all pins with linchpins.



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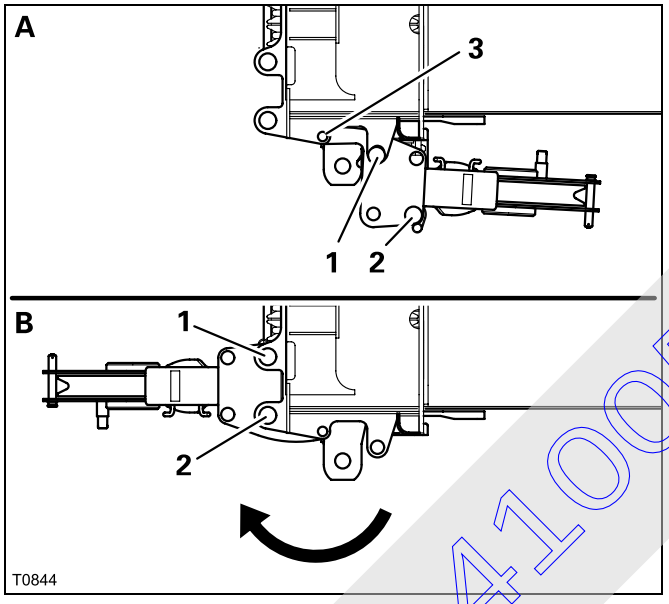
# 5.2 Rigging the auxiliary single-sheave boom top

## 5.2.1 Rigging in working position / transport position

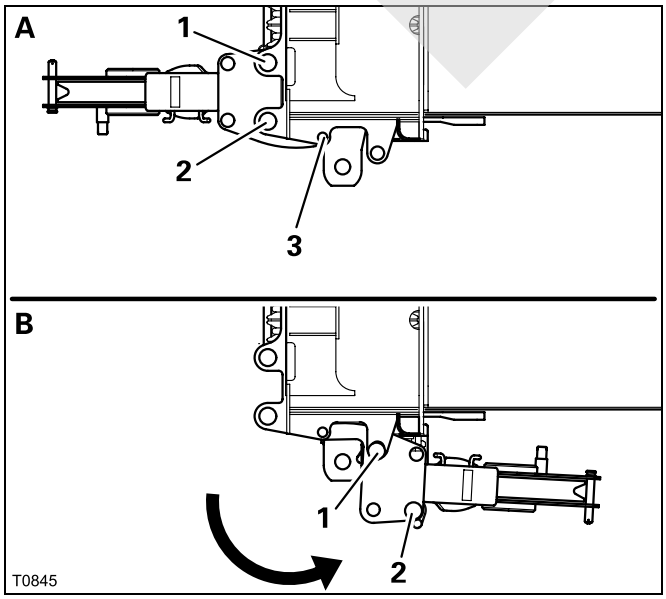
**Risk of accidents due to falling parts**
To swing into working position or transport position, the swivel pin must be inserted. This prevents the auxiliary single-sheave boom top from falling down and injuring people.




**Working position**

- (**A**) – Check whether the swivel pin (**3**) is inserted.
- Pull out the pins (**1**) and (**2**).
- (**B**) – Swing the auxiliary single-sheave boom top in front of the main boom.
- Insert the pins (**1**) and (**2**) and secure them with linchpins.






**Transport position**

- (**A**) – Check whether the swivel pin (**3**) is inserted.
- Pull out the pins (**1**) and (**2**).
- (**B**) – Swing the auxiliary single-sheave boom top from the side towards the main boom.
- Insert the pins (**1**) and (**2**) and secure them with linchpins.

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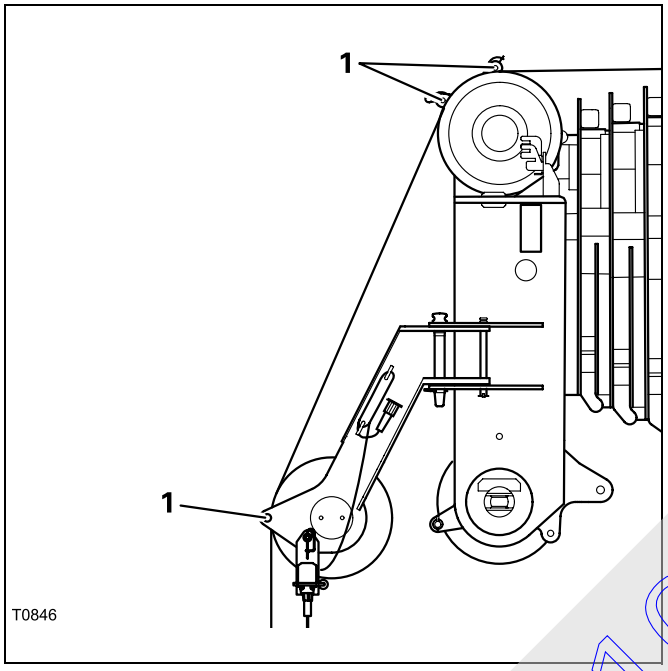
## 5.2.2 Applying and removing the hoist rope

**Risk of accidents due to falling parts**
Secure the sheaves and rods always with retaining pins when securing the hoist rope.
This will prevent elements from becoming loose, falling down and injuring persons.




### Applying the hoist rope

- Remove the sheaves (**1**).
- Lay the hoist rope over the left head sheave of the main boom.
- Put all sheaves (**1**) back in place and secure them with retaining pins.
- Attach the hook tackle or the hook block.

### Removing the hoist rope

- Unreeve the hook block.
- Remove the sheaves (**1**).
- Take the hoist rope off the left head sheave of the main boom.
- Put all sheaves (**1**) back in place and secure them with retaining pins.



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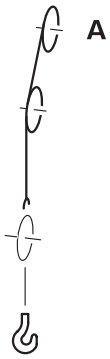
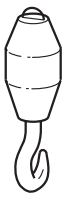
## Possible reeving methods

**Single-sheave** hook block
Max. lifting capacity of the hook block 20 t (44 000 lbs)
**Max. lifting capacity with the GMK 4100/4100-L/5095:**

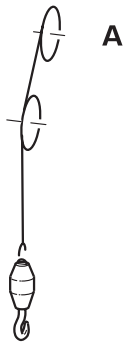
**A** with single reeving 5.7 t (12 500 lbs)



**Hook tackle**
Max. lifting capacity of the hook tackle 8 t (17 600 lbs)
**Max. lifting capacity with the GMK 4100/4100-L/5095:**

**A** with single reeving 5.7 t (12 500 lbs)

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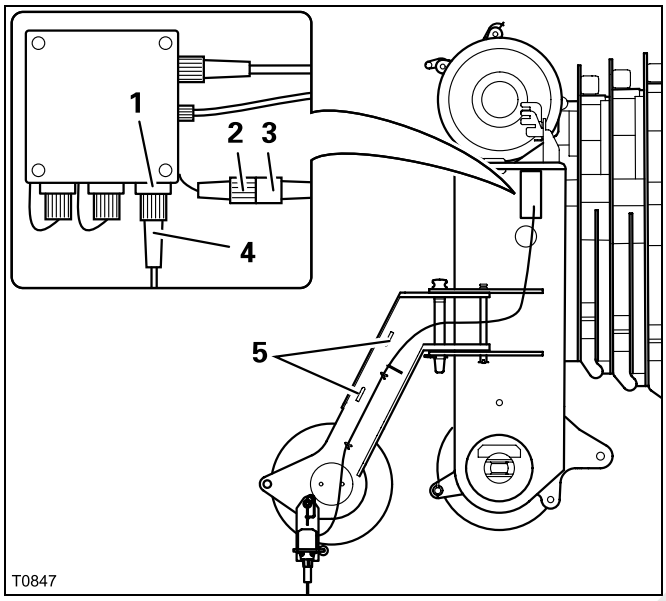
## 5.2.3 Lifting limit switch and anemometer

### Lifting limit switch

#### For operation

A lifting limit switch must be installed for each reeved hoist rope; ➠ *Operating instructions* of the truck crane.




**On the left side**

- Remove the bridging plug (**3**) from the socket (**1**) and plug it into the dummy socket (**2**).
- Unwind the cable from the clamp (**5**).
- Insert the plug (**4**) into the socket (**1**).
- Wind the connecting cable of the plug (**4**) onto the holder (**5**).
- Install the lifting limit switch weight and lay it around the hoist rope; ➠ *Operating instructions* of the truck crane.

**On the right-hand side**

If a hook block is additionally reeved on the main boom, connect the second lifting limit switch to the socket on the right-hand side of the main boom head; ➠ *Operating instructions* of the truck crane.

If no hook block is reeved on the main boom, the bridging plug must be plugged into the socket that is not used; ➠ *Operating instructions* of the truck crane.



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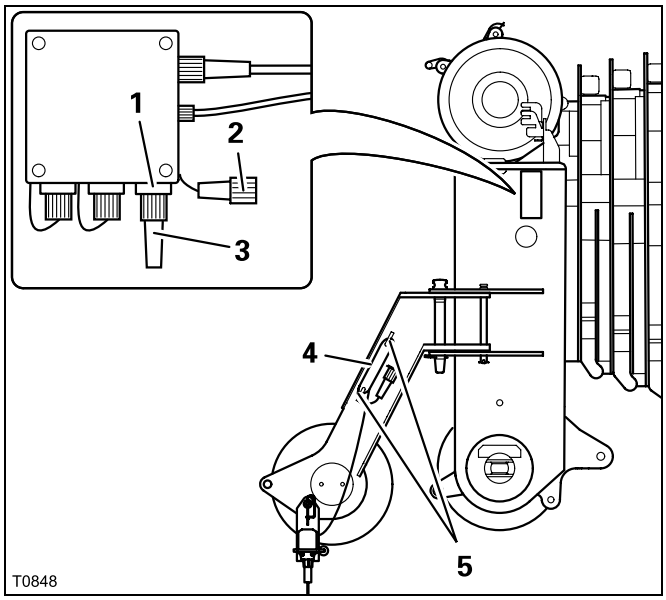
**For removal**




**On the left side**

- Remove the plug (**4**) from the socket (**1**).
- Wind the connecting cable of the plug (**4**) onto the holder (**5**).
- Remove the bridging plug (**3**) from the dummy socket (**2**) and plug it into the socket (**1**).

**On the right-hand side**

If no hook block is reeved on the main boom, the bridging plug must be plugged into the socket that is not used; ➠ *Operating instructions* of the truck crane.

## Anemometer

**Installation and removal**

You must install the anemometer for operation with the auxiliary single-sheave boom top.

You must remove the anemometer for on-road driving.

It is installed and removed in the same way as for operation with the main boom; ➠ *Operating instructions* of the truck crane.

**Risk of damage to the anemometer**
Remove the anemometer for on-road driving.
This will prevent the anemometer from being damaged by wind (e.g. by suction currents caused by oncoming traffic in tunnels).

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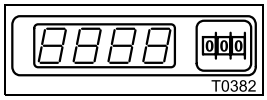
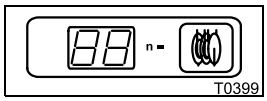
# 5.3 Operation with the auxiliary single-sheave boom top

When operating with the auxiliary single-sheave boom top, the maximum speed for the power units is not limited; ➠ *Operating instructions* of the truck crane.

The hoisting, lowering, slewing, derricking and telescoping operations are carried out in the same way as when operating with the main boom. This section only contains information additionally required with a rigged or folded auxiliary single-sheave boom top.

## 5.3.1 Setting the SLI




- Enter additionally on the SLI:
  - The current rigging mode for operation with the **main boom**
  - The current reeving on the auxiliary single-sheave boom top for the hoist of which the hoist rope is reeved on the auxiliary single-sheave boom top.

The loads specified in the lifting capacity tables are reduced when operating with a auxiliary single-sheave boom top if:

- A hook block is reeved on the main boom or
- The swing-away lattice or heavy load lattice extension is folded on the side of the main boom.

The values which have to be deducted from the lifting capacities depend on the length of the swing-away lattice and the weight of the hook block.
A table with the values can be found in the *Lifting capacity tables* in the section titled *Notes on working with the swing-away lattice extension*. The SLI is switched off earlier accordingly.



## 5.3.2 Derricking and telescoping the main boom

**Risk of accidents with overridden SLI**
Do not override the SLI when lowering the boom into a horizontal position. If the SLI is overridden, the crane operation will not be monitored and the truck crane will overturn if you leave the permissible working range.

The conditions for raising, setting down and telescoping the main boom with rigged auxiliary single-sheeve boom top at a slewing range of 360° are monitored by the SLI; ➠ *Operating instructions* of the truck crane – *Crane operation*.

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## 5.3.3 Notes on the SLI shutdown

Operation with the auxiliary single-sheave boom top is monitored by the SLI.

When operating with the lattice extension, SLI shutdowns can occur for the same reasons as when operating with the main boom; ➠ *Operating instructions* of the truck crane.

## 5.3.4 Procedure if permissible wind speeds are exceeded

**Risk of accidents due to excessive wind speeds**
If the current wind speed is higher that the maximum permissible wind speed, stop operating the crane immediately and establish the corresponding rigging mode.
This will prevent the truck crane from overloading and overturning.

- Prior to and during crane operation, check whether the current wind speed is lower than the maximum permissible wind speed.
- Make sure you follow the instructions for checking the wind speed; ➠ *Lifting capacity table*; ➠ *Operating instructions* of the truck crane.

**If the maximum permissible wind speed is exceeded**

**No** automatic shutdown occurs if the maximum permissible wind speed is exceeded.

- Immediately stop operating the crane.
- Bring the truck crane into the rigging mode specified for the current wind speed in the *Lifting capacity table*.



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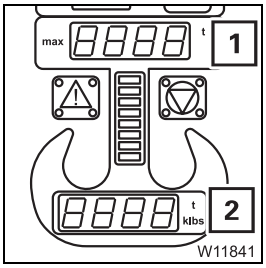
## 5.3.5 LMB display with folded / rigged auxiliary single-sheave boom top

If the auxiliary single-sheave boom top is installed on the main boom in working position or transport position, the lifting capacities specified in the *Lifting capacity tables* are reduced.




The *Maximum load* display (**1**) does **not** show the reduced values.

The SLI takes into account the value for the installed auxiliary single-sheave boom top, adds the weight of the raised load and displays the sum on the *Current load* display (**2**). The SLI is switched off earlier accordingly.

## 5.3.6 Notes on two-hook operation

Notes on two-hook operation; ➠ *Turning loads*, p. 7 - 1.

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# 6 Heavy load lattice extension





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# 6 Heavy load lattice extension

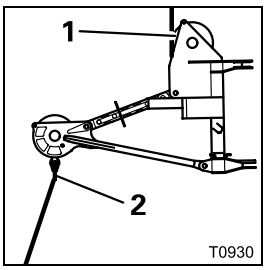
## 6.1 Installing / removing

### 6.1.1 Installing the heavy load lattice extension

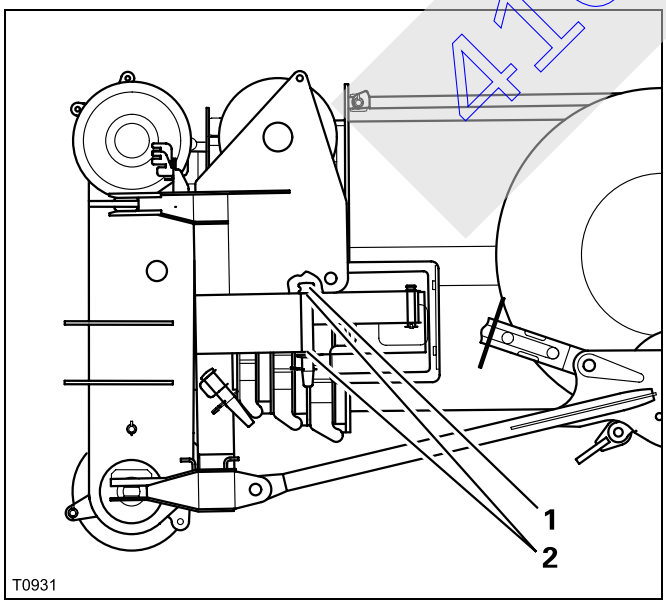
**Prerequisites:**

– An auxiliary crane is available.

– The heavy load lattice extension is rigged at a 0° angle; ➠ p. 6 - 8.




- Attach the heavy load lattice extension using an auxiliary crane in front of the top sheave (**1**); ➠ p. 2 - 11.
- Attach the guide rope to the rope attachment point (**2**); ➠ p. 6 - 16.




- Pull the pin (**1**) out of the bearing point (**2**).
- Lift the heavy load lattice extension to the left on the main boom.
- Align the heavy load lattice extension so that the bearing point (**2**) lines up to the front boreholes in the holding device.
- Insert the pin (**1**) through the boreholes and the bearing point (**2**).
- Secure the pin (**1**) with a retaining pin.
- Move the heavy load lattice extension into transport position or working position; ➠ *Rigging the heavy load lattice extension*, p. 6 - 3.



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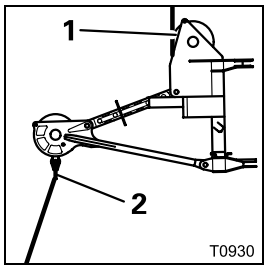
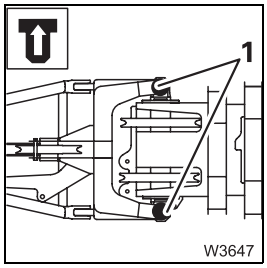
## 6.1.2 Removing the heavy load lattice extension

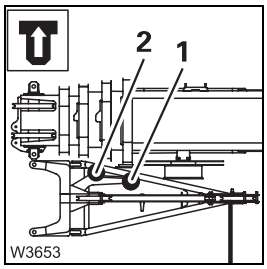



- Attach the heavy load lattice extension using an auxiliary crane in front of the top sheave (**1**); ➠ p. 2 - 11.
- Attach the guide rope to the rope attachment point (**2**); ➠ p. 6 - 16.



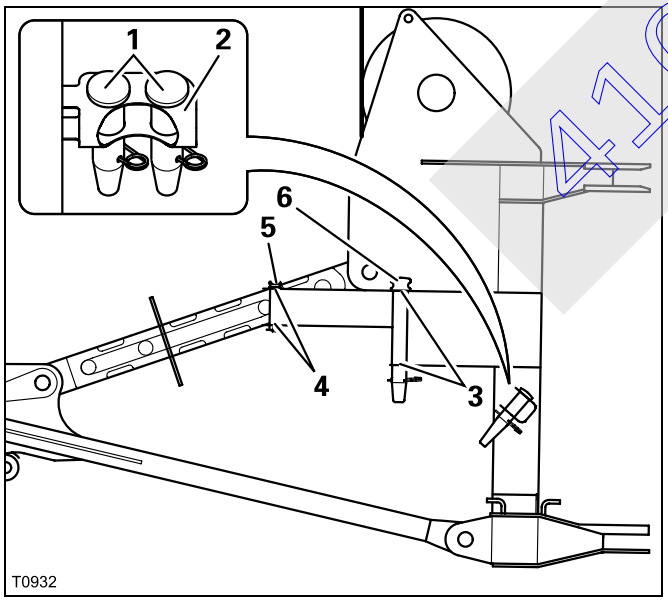

**From working position:**

- Pull all pins (**1**) above and below out of the bearing points.




**From transport position:**

- Pull the pins (**1**) and (**2**) out of the bearing points.




- Lift the heavy load lattice extension from the main boom head.

**From transport position**

- Insert the pin (**5**) into the bearing point (**4**).
- Insert the pin (**6**) into the bearing point (**3**).
- Secure all pins with retaining pins.

**From working position**

- Insert the four pins (**1**) into the right and left holders (**2**) on the heavy load lattice extension.
- Secure all pins with retaining pins.

- Detach the guide rope from the rope attachment point.
- Fold in the rope attachment point; ➠ p. 6 - 15.



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# 6.2 Rigging the heavy load lattice extension

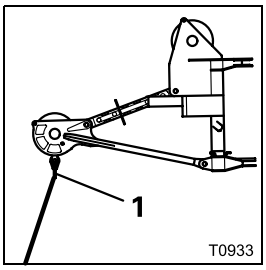
## 6.2.1 Rigging in transport position

**Prerequisites:**

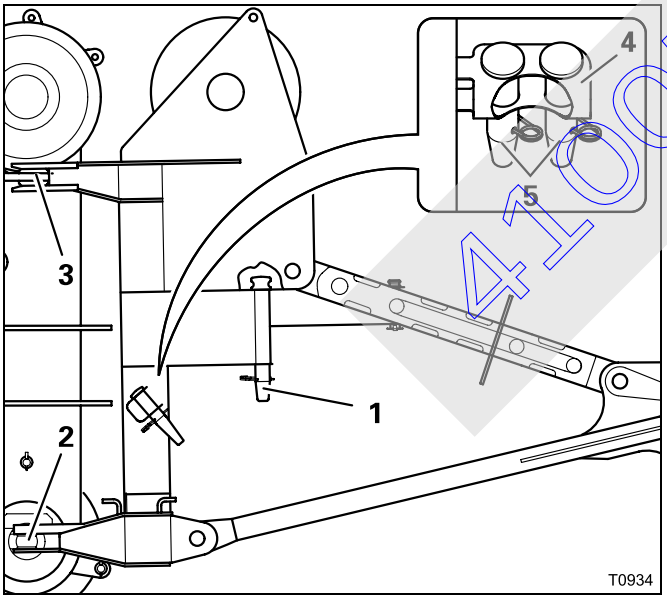
– The heavy load lattice extension is in working position.

– The heavy load lattice extension is rigged at a 0° angle; ➠ p. 6 - 8.

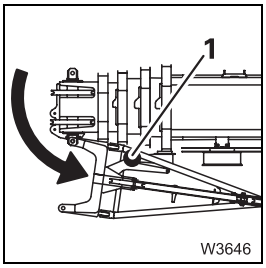
– The hoist rope is unreeved.




- Attach the guide rope to the rope attachment point (**1**); ➠ p. 6 - 16.




- Pull the pin (**1**) out of the bearing point.
- Pull the pins (**5**) out of the bearing points (**2**) and (**3**) on the main boom head on the right.
- Insert both pins into the holder (**4**) and secure them with retaining pins.




- Swivel the heavy load lattice extension onto the main boom until the bearing point (**1**) and the boreholes align.



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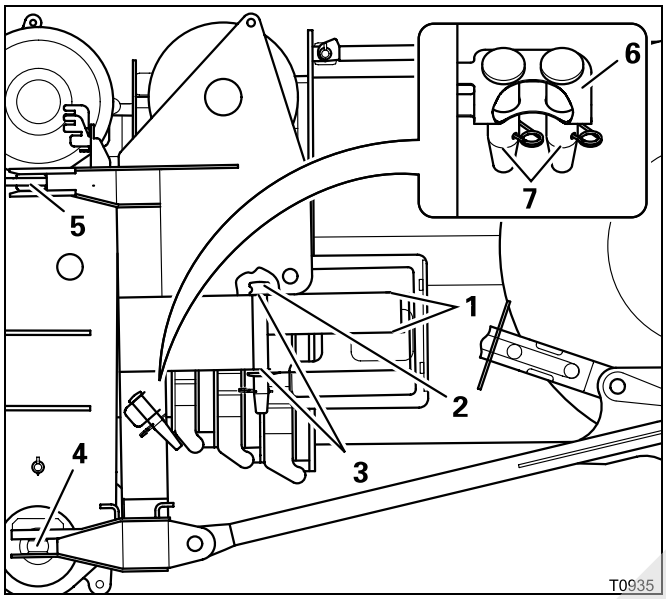
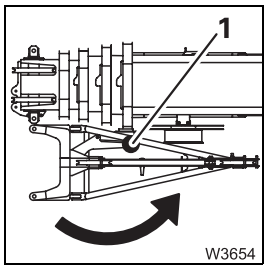
**Risk of accidents due to the heavy load lattice extension falling down**
Always insert the pin onto the lateral holding device first before removing the pins on the main boom head. This way, you can avoid the heavy load lattice extension having no connection with the main boom and falling down.

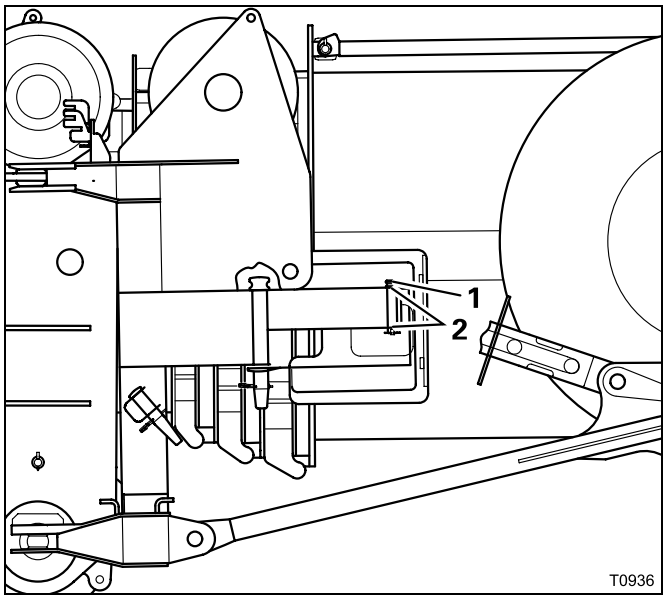



- Using the pin (**2**), fasten the heavy load lattice extension to the bore hole (**3**).
- Secure the pin (**2**) with a retaining pin.
- Pull the pin out of the bearing point (**1**).
- Remove both pins (**7**) from bearing points (**4**) and (**5**).
- Insert both pins (**7**) into the holder (**6**) and secure them with retaining pins.




- Swivel the heavy load lattice extension until the bearing point (**1**) and the boreholes align.






- Using the locking pins (**1**), fasten the heavy load lattice extension to the bearing point (**2**).
- Secure the pin with a retaining pin.

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- Detach the guide rope from the rope attachment point.
- Fold in the rope attachment point; ➠ p. 6 - 15.

The heavy load lattice extension is now in transport position.



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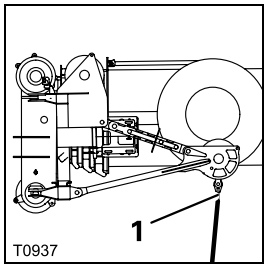
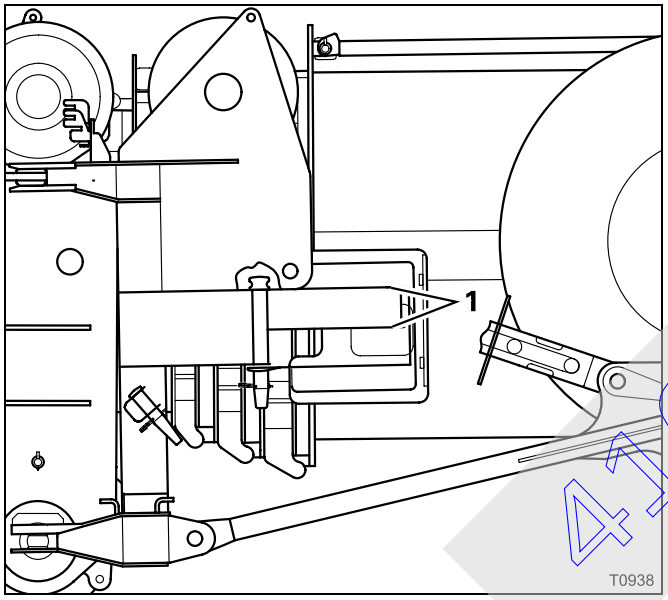
## 6.2.2 Rigging in working position

**Prerequisites:**

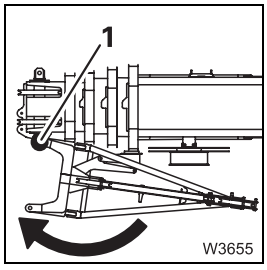
– The heavy load lattice extension is in transport position.




- Attach the guide rope to the rope attachment point (**1**); ➠ p. 6 - 16.




- Pull the pin out of the bearing point (**1**).




- Swivel the heavy load lattice extension onto the main boom until the bearing points (**1**) and the boreholes align.

**Risk of accidents due to the heavy load lattice extension falling down**
Always insert the pin onto the lateral holding device first before removing the pins on the main boom head. This way, you can avoid the heavy load lattice extension having no connection with the main boom and falling down.



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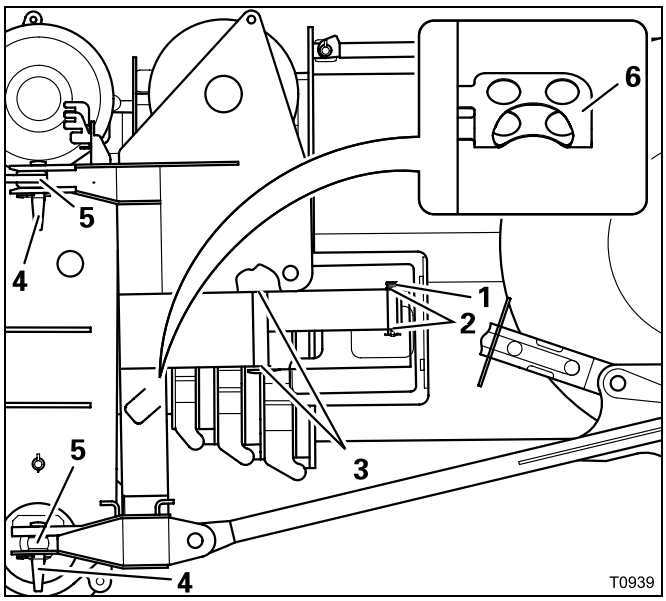
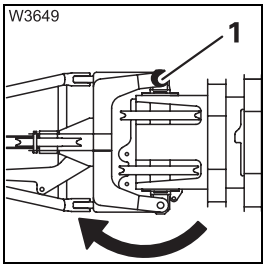
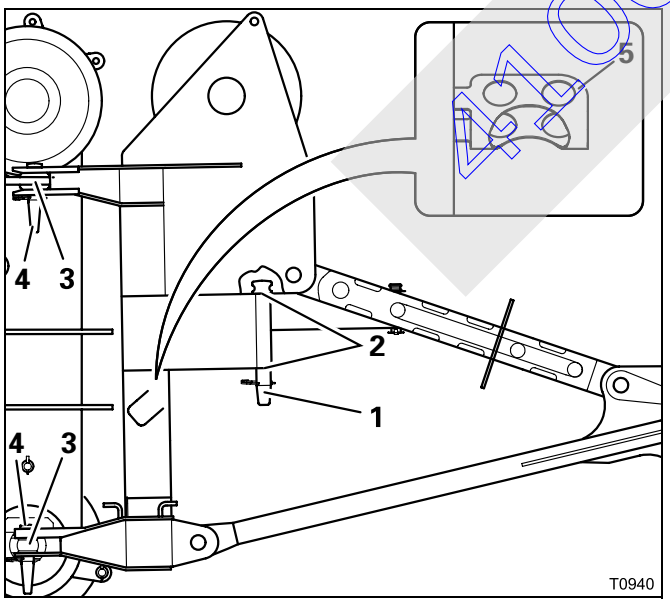



- Pull the pins (**4**) out of the holder (**6**).
- Attach the heavy load lattice extension with the pins (**4**) to the left side of the main boom head and secure them with retaining pins.
- Insert the pin (**1**) into the bearing point (**2**) and secure it with a retaining pin.
- Pull the pin out of the bearing point (**3**).




- Swivel the heavy load lattice extension onto the main boom until the bearing points (**1**) and the boreholes align.



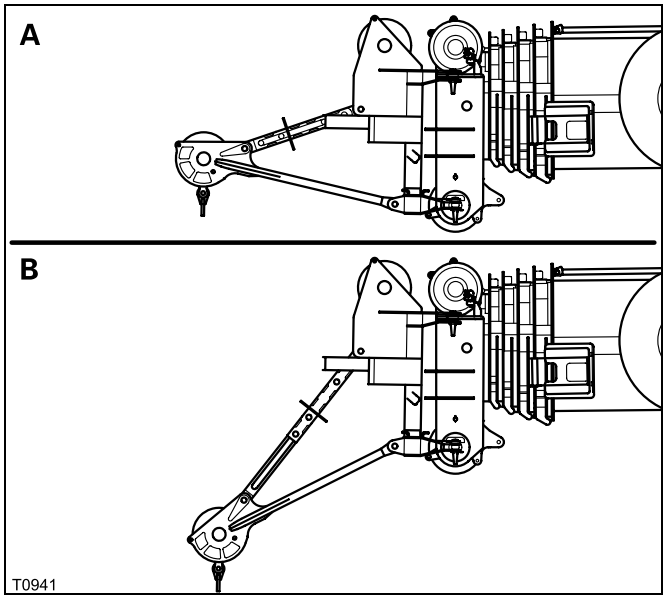

- Pull both pins (**4**) out of the holder (**5**).
- Insert both pins (**4**) in the bearing points (**3**) on the right side of the main boom head and secure them with retaining pins.
- Insert the pin (**1**) into the bearing point (**2**) and secure it with a retaining pin.

The heavy load lattice extension is now in working position.

- Reeve the hook block; ➠ *Attaching and removing the hoist rope*, p. 6 - 10.
- For single reeving:
  - Fold the rope attachment point (**6**) in; ➠ p. 6 - 15.

## 6.2.3 Setting the angle position of the heavy load lattice extension

The heavy load lattice extension can be used at two angles. The chain hoist supplied with the truck crane is used for these settings.

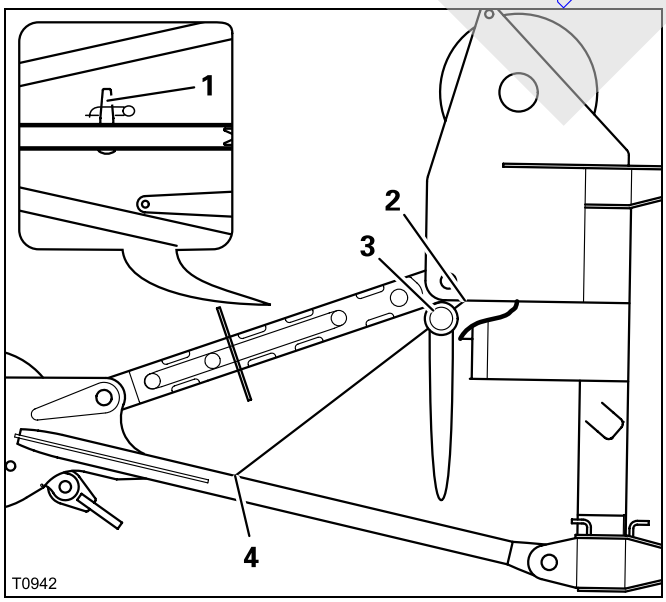



**(A)** 0° angle (also as transport position)

**(B)** 40° angle

### Installing / removing the chain hoist

**Risk of uncontrolled movements**
When removing the chain hoist, the pin must be always inserted in the tie member and secured with a retaining pin. This way, you can prevent the heavy load lattice extension from folding down in an uncontrolled manner.




**Installation**

- Attach the chain hoist (**3**) at the slinging points (**2**) and (**4**).

**Removal**

The pin (**1**) is inserted and secured with a retaining pin.

- Unload the chain hoist (**3**).
- Remove the chain hoist at the slinging points (**2**) and (**4**).



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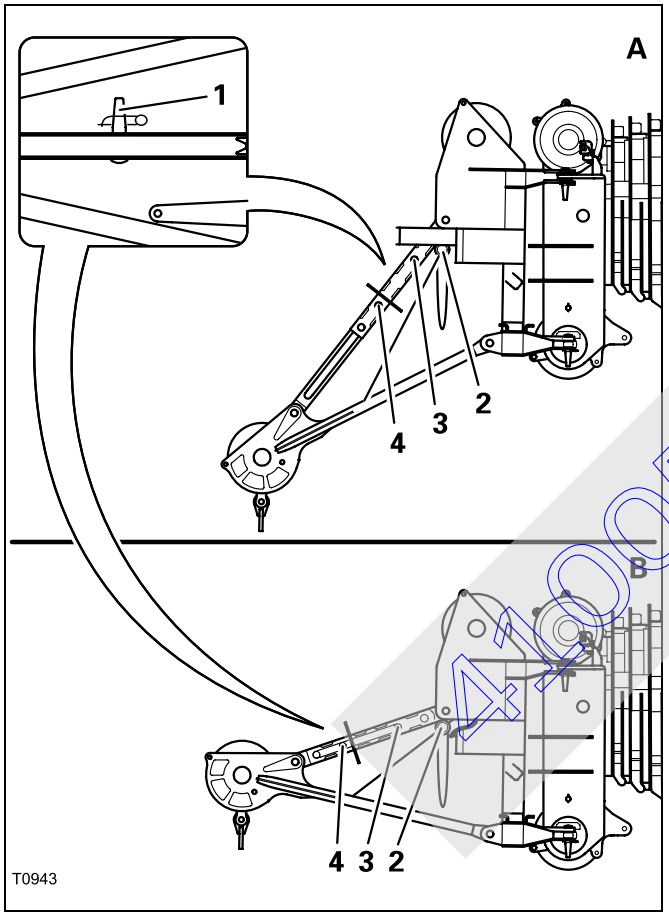
## Setting angle

**Risk of uncontrolled movements**
When setting the angle, always raise or lower the heavy load lattice extension as far as possible and then insert the pin. This way, you can prevent the heavy load lattice extension from being in a non-permissible position without a fall-back guard.




- Hook in the chain hoist; ➠ p. 6 - 8.
- Lift the heavy load lattice extension with the chain hoist until the pin (**1**) is relieved.
- Pull the pin (**1**) out of the bearing point.

**(A) – 40° angle**

- Lower the heavy load lattice extension as far as possible using the chain hoist.
- Insert the pin (**1**) into the bearing point (**4**).
- Secure the pin (**1**) with a retaining pin.

**(B) – 0° angle**

- Lift the heavy load lattice extension as far as it will go using the chain hoist (**2**).
- Insert the pin (**1**) into the bearing point (**3**).
- Secure the pin (**1**) with a retaining pin.

- Detach the chain hoist; ➠ p. 6 - 8.



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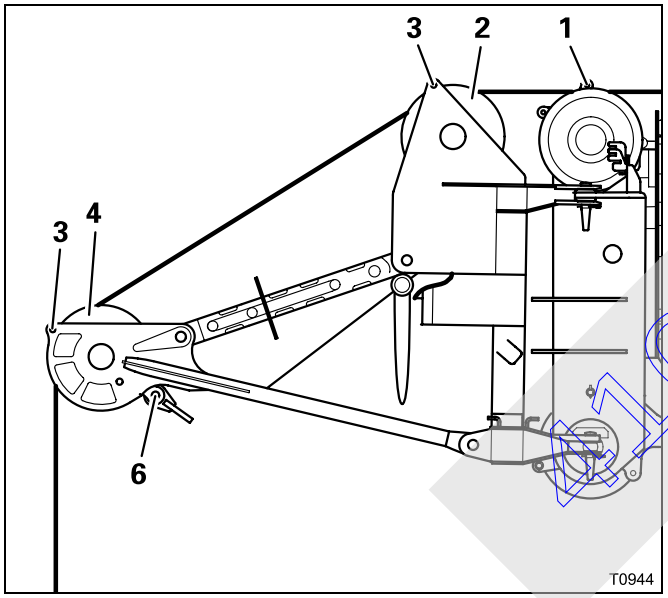
## 6.2.4 Attaching and removing the hoist rope

**Risk of accidents due to falling parts**
Always secure the sheaves and rods for securing the hoist rope with retaining pins.
This prevents elements from coming loose, falling down and injuring people.

**Risk of damage when rope attachment point is folded out**
Always make sure to fold in the rope attachment point for operation with a single-reeved hoist rope.
This prevents the rope attachment point from being damaged during operation.




**Positioning the hoist rope**

- Remove the sheaves (**1**) and (**3**).
- Lead the hoist rope over the deflection sheave (**2**) and the head sheave (**4**).
- Put all sheaves (**1**) and (**3**) back in place and secure them with retaining pins.
- Reeve in the hook tackle or the hook block.
- For double reeving:
  - Fold the rope attachment point (**6**) out; ➠ p. 6 - 15.
  - Secure the cable end clamp from the rope attachment point (**6**).
- For single reeving:
  - Fold the rope attachment point (**6**) in; ➠ p. 6 - 15.

**Removing the hoist rope**

- Unreeve the hook block.
- Remove the sheaves (**1**) and (**3**).
- Take the hoist rope from the deflection sheave (**2**) and the head sheave (**4**).
- Put all sheaves (**1**) and (**3**) back in place and secure them with retaining pins.
- Fold the rope attachment point (**6**) in; ➠ p. 6 - 15.



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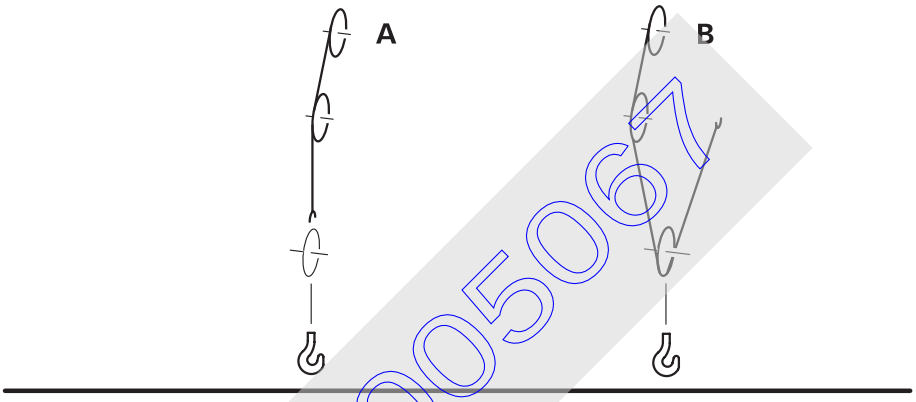
**Possible reeving methods on the heavy load lattice extension**

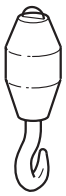
The hoist rope can be reeved once or twice.

**1 sheave** hook block
Max. lifting capacity of the hook block 20 t (44,000 lbs)
**Max. lifting capacity with the GMK 4100/4100-L/5095:**

**A** for single reeving 5.7 t (12,500 lbs)

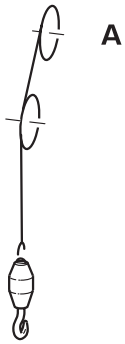
**B** for double reeving 11.4 t (25,000 lbs)



**Hook tackle**
Max. lifting capacity of the hook tackle 8 t (17,600 lbs)
**Max. lifting capacity with the GMK 4100/4100-L/5095:**

**A** for single reeving 5.7 t (12,500 lbs)

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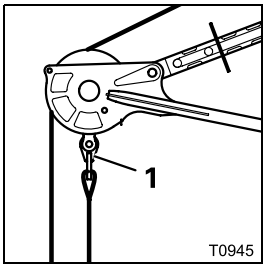


With a double reeving, fasten the rope end clamp to the rope attachment point (**1**).

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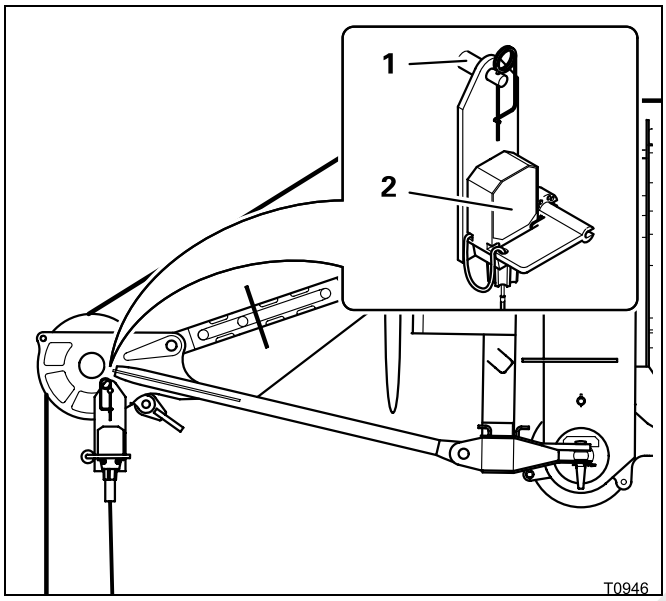
## 6.2.5 Lifting limit switch and anemometer

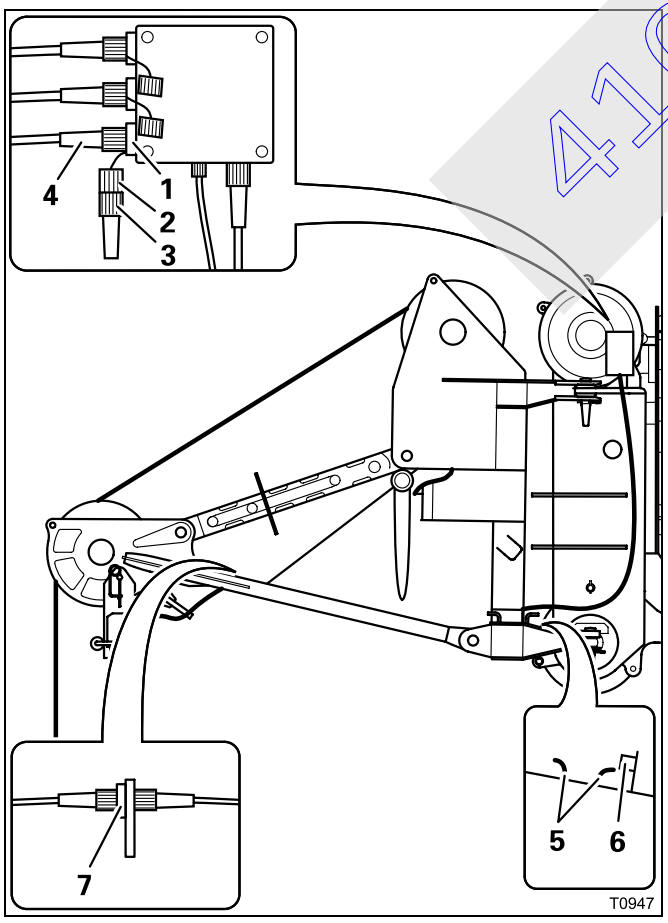
### Lifting limit switch — Establishing the electrical connection

For each reeved hoist rope, a lifting limit switch must be installed;
➠ *Operating instructions* of the truck crane.




**On the left side**

- Fit the lifting limit switch (**2**) onto the holder (**1**) and secure it with the retaining pin.
- Install the lifting limit switch weight and lay it around the hoist rope; ➠ *Operating instructions* of the truck crane.




- Remove the bridging plug (**3**) from the socket (**1**) and plug it into the dummy socket (**2**).
- Unwind the cable from the clamp (**5**).
- Remove the plug (**4**) from the dummy socket (**6**) and plug it into the socket (**1**).
- Wind the connecting cable of the plug (**4**) onto the holder (**5**).
- Insert the plug of the lifting limit switch into the socket (**7**).
- Position the connecting cable so that it will not be damaged during crane operation.



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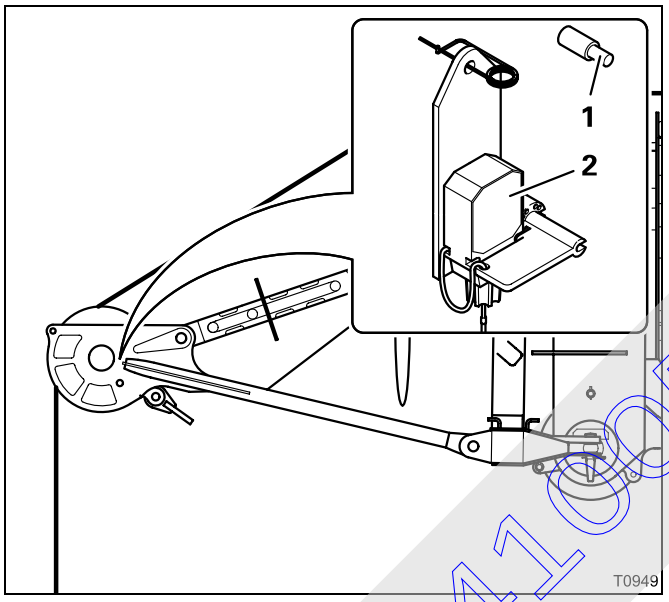
**On the right side**

If, additionally, a hook block is reeved on the main boom, connect the second lifting limit switch to the socket on the right side of the main boom head; ➠ *Operating instructions* of the truck crane.

If no hook block is reeved on the main boom, the bridging plug must be plugged into the socket that is not used; ➠ *Operating instructions* of the truck crane.

**Disconnecting the electrical connection**




- Remove the lifting limit switch (**2**) from the clamp (**1**).
- Attach the retaining pin to the lifting limit switch.



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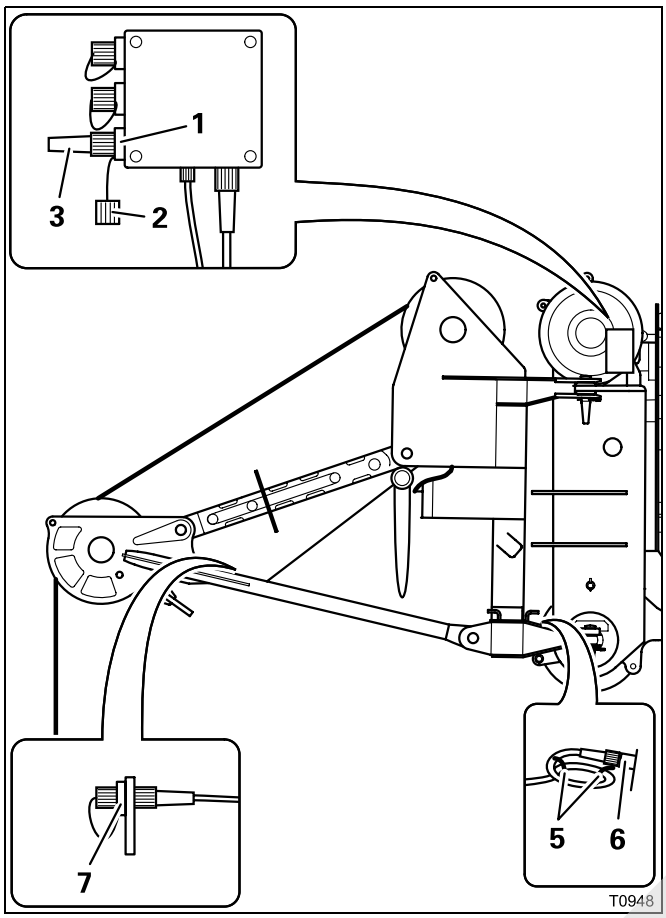


**On the left side**

- Remove the plug (**6**) from the socket (**1**).
- Wind the connecting cable of the plug (**6**) onto the holder (**5**).
- Remove the plug (**3**) from the dummy socket (**2**) and plug it into the socket (**1**).
- Pull the plug of the lifting limit switch from the socket (**7**).
- Cover the socket (**7**) with the protective cap.

**On the right side**

If no hook block is reeved on the main boom, the bridging plug must be plugged into the socket that is not used; ➠ *Operating instructions* of the truck crane.



## Anemometer

### Installation and removal

You must install the anemometer on the main boom for operation with the heavy load lattice extension. You must remove the anemometer for driving on-road.
It is installed and removed in the same way as for operation with the main boom; ➠ *Operating instructions* of the truck crane.

**Risk of damage to the anemometer**
Remove the anemometer for on-road driving.
This prevents the anemometer from being damaged by wind (e.g. by suction currents caused by oncoming traffic in tunnels).

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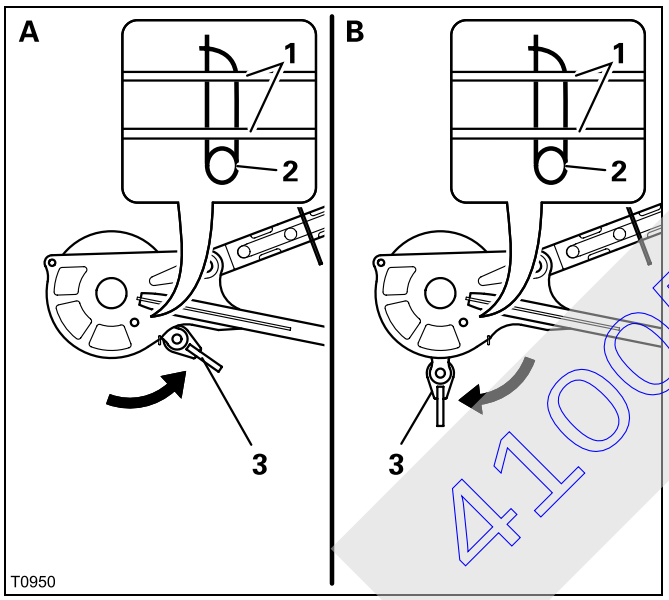
## 6.2.6 Folding in / out rope attachment point

**Folding out:** – for operation with a double-reeved hoist rope.

**Folding in:** – for operation with a double-reeved hoist rope and for transport.

**Risk of damage when rope attachment point is folded out**
Always make sure to fold in the rope attachment point after completing operation with a double-reeved hoist rope. This prevents the rope attachment point from being damaged during operation with a single-reeved hoist rope or during transport.




**(A) – Folding in rope attachment point**

- Remove the retaining pin (**2**) from the holder (**1**).
- Fold the rope attachment point (**3**) upwards.
- Secure the rope attachment point in place (**3**) by inserting the retaining pin into the holder (**1**).

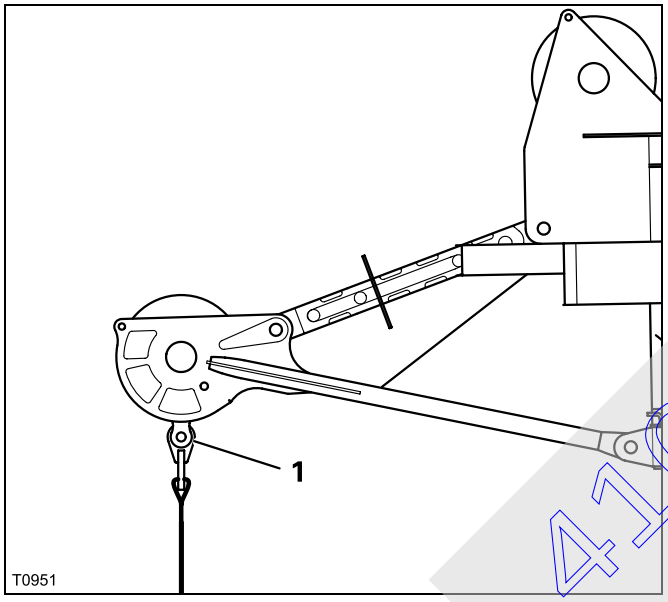
**(B) – Folding out rope attachment point**

- Hold on to the rope attachment point (**3**) and remove the retaining pin (**2**).
- Fold the rope attachment point (**3**) downwards.
- Insert the retaining pin into the holder (**1**).

## 6.2.7 Securing the heavy load lattice extension with guide rope

**Risk of accidents due to the heavy load lattice extension swinging of its own accord**
Always secure the heavy load lattice extension with a guide rope on the main boom before removing any connections.
This prevents the heavy load lattice extension from swinging around of its own accord and causing injury to you or other persons.

If you happen to be alone, secure the other end of the guide rope on the crane (e.g. on the front towing coupling).




- Fold out the rope attachment point; p. 6 - 15.
- Attach a guide rope to the extended rope attachment point (**1**).
- Have a person hold the guide rope taut while you establish or loosen pin connections on the heavy load lattice extension.



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# 6.3 Operation with the heavy load lattice extension

When operating the lattice extension, the maximum speed for the different power units is limited to 70%, ➠ *Operating instructions* of the truck crane.

The hoisting, lowering, slewing, derricking and telescoping movements are carried out in the same way as when operating with the main boom. This section only contains information that you will need for a rigged or folded heavy load lattice extension.

## 6.3.1 Setting the SLI

Components that must be additionally entered on the SLI are the length and the angle of the heavy load lattice extension.

Setting the SLI ➠ *Entering the SLI code*, p. 3 - 88.

The loads specified in the lifting capacity tables are reduced during operation with the heavy load lattice extension if:

– a hook block is reeved in on the main boom, or
– the swing-away lattice is folded to the side on the main boom.

The values which must be deducted from the load capacities depend on the length of the swing-away lattice and the weight of the hook block. You will find a table with the values in the *lifting capacity tables* in the section *Information on working with the swing-away lattice extension*. The SLI switches off correspondingly earlier.



## 6.3.2 Derricking the main boom

**Risk of accidents if the SLI is overridden**
Do not override the SLI when lowering the boom into a horizontal position. If the SLI is overridden, the crane operations will not be monitored and the truck crane will overturn if you leave the permissible working range.

If the following prerequisites are met, raising and setting down the main boom with a rigged heavy load lattice extension at a slewing range of 360° is permitted and is monitored by the SLI.

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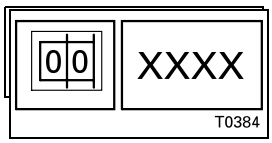
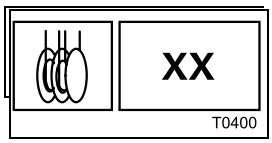



– The current rigging mode with the rigged heavy load lattice extension is entered on the SLI, and the corresponding SLI code is displayed as per the *Lifting capacity table*.




– The current reeving type on the heavy load lattice extension is entered for the hoisting gear whose hoist rope is reeved on the heavy load lattice extension.

– Apart from the hook block, there is no load on the lattice extension.

– The main boom is fully retracted.

When all of the above prerequisites have been fulfilled, the SLI will automatically switch to the rigging tables and derricking can then be done in the angle range underneath the working range of approx. 15°.

## 6.3.3 Telescoping with rigged heavy load lattice extension

**Risk of overloading the main boom**
If you are telescoping the main boom with the rigged heavy load lattice extension, you may not simultaneously slew the superstructure.
This prevents the main boom being subjected to additional side forces and increased vibration and becoming overloaded.

Telescoping will only be enabled by the SLI if the main boom is derricked to a certain angle and a maximum permissible load is not exceeded.

The required angle (between 70° and 80°) depends on the rigging mode of the truck crane.

You will find the required main boom angle and maximum permissible load (weight of the hook block) in the *Lifting capacity tables*, in the Chapter *Rigging tables – Heavy load lattice extension*.

If the main boom angle is too small for telescoping with the heavy load lattice extension, the SLI displays a appropriate error message.



## 6.3.4 information about the SLI shutdown

The operation with the heavy load lattice extension is monitored by the SLI.

When operating with the lattice extension, SLI shutdowns may occur for the same reasons as when operating with the main boom; ➠ *Operating instructions* of the truck crane.

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## 6.3.5 Procedure if permissible wind speed is exceeded

**Risk of accidents due to excessively high wind speeds**
If the current wind speed is higher that the maximum permissible wind speed, stop crane operation immediately and establish the corresponding rigging mode.
This prevents the truck crane from overturning due to overloading.

- Prior to and during crane operation, check whether the actual wind speed is lower than the maximum permissible wind speed.
- Make sure that you follow the instructions for checking the wind speed; ➠ *Lifting capacity table*; ➠ *Operating instructions* of the truck crane.

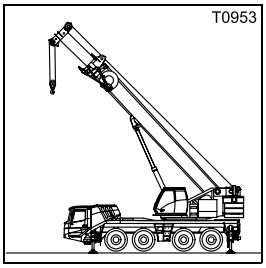
**If the maximum permitted wind speed is exceeded**

**No** automatic shutdown occurs if the maximum permissible wind speed is exceeded.

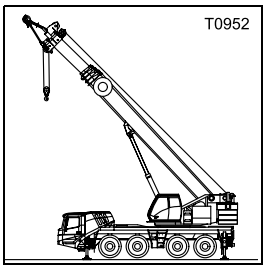
- Immediately stop crane operation.
- Bring the truck crane into the rigging mode specified for the current wind speed given by the *Lifting capacity table*.



## 6.3.6 Information about the main boom operation when the heavy load lattice extension is folded / rigged




If the heavy load lattice extension is folded at the side during operation with the main boom, the loads given in the *Lifting capacity tables* decrease.




For operation with the main boom with a rigged heavy load lattice extension, you must enter the current rigging mode for the main boom without a heavy load lattice extension on the SLI.

In this case, the values given in the corresponding *Lifting capacity tables* for the lifting capacities decrease.

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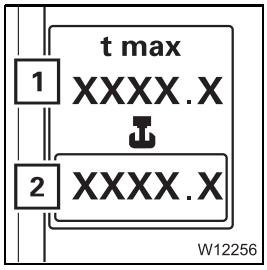
**Risk of overturning with impermissible rigging mode**
Main boom operation with a rigged heavy load lattice extension is only permissible in rigging modes that are also permissible for the rigged heavy load lattice extension (outrigger span, counterweight, slewing range).
If you set up rigging modes that are only valid for main boom operation without a rigged heavy load lattice extension (e.g. *Free on wheels* working position), there is the danger of the truck crane overturning during operation.

**Reduction of the lifting capacity**




The *Maximum load* display (**1**) does **not** show the reduced values.

The SLI, however, takes into account the value for the currently rigged heavy load lattice extension, adds the weight of the raised load and displays the sum on the *Current load* display (**2**). The SLI switches off correspondingly earlier.

The displayed value could deviate from the value that was previously calculated during the operations planning.

If this is the case, the SLI is not defective. Do not override the SLI. Even if the displayed value is higher than the calculated value.

**Risk of accidents if the SLI is overridden**
Do not under any circumstances override the SLI.
If the SLI is overridden, the crane operations will not be monitored and the truck crane will overturn if you leave the permissible working range.



## 6.3.7 Notes on two-hook operation

Notes on two-hook operation; ➠ *Turning loads*, p. 7 - 1.

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# 7 Turning loads





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# 7 Turning loads

Two-hook operation is required to turn loads.

Two-hook operation is **only** permitted with:

- Swing-away lattice or
- Auxiliary single-sheave boom top or
- Heavy load lattice extension

**Risk of accidents due to overloading**
Lifting a load with two hooks is permitted only according to the following instructions and illustrations.
If these instructions are disregarded, there will be a risk of accidents due to individual parts of the truck crane being overloaded. In this case the SLI no longer provides protection.

For the location and function of the required operating elements;
➠ *Operating instructions* of the truck crane.

In two-hook operation, the loads given in the *lifting capacity table* are reduced by the weight of both reeved hook blocks.



## 7.1 Prerequisites

The following description requires that:

- The main hoist rope is reeved on the main boom
- The auxiliary hoist rope is reeved on the lattice extension
- The lifting limit switches for both hoists are connected
- The reeving on the main boom is equal to or greater than the reeving on the lattice extension and
- The SLI code has been set according to the *Lifting capacity table* for the actual rigging status of the truck crane with the rigged lattice extension

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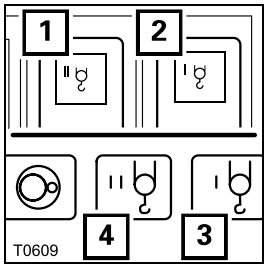
# 7.2 Setting the SLI

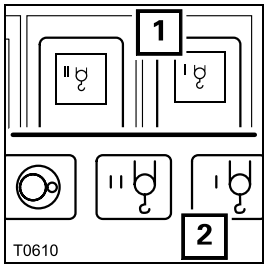
Both hoists must be switched on for the SLI for two-hook operation.

Enter the reeving for both hoists at the beginning. The values are stored and called up directly when switching hoists. As a result, it is not necessary to make an entry later on during operation.



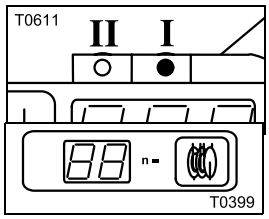

**Switching off both hoists**

- Press the buttons (**1**) and (**2**) one after the other.
  - The lights in the buttons (**1**) and (**2**) shine weakly.
  - The symbol (**3**) is **red** if the main hoist is switched off.
  - The symbol (**4**) is **red** if the auxiliary hoist is switched off.



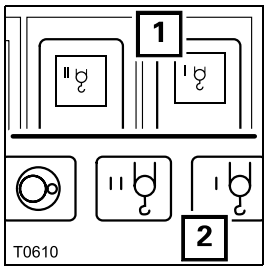

**Switching on the main hoist**

- Press the button (**1**) once.
  - The lamp in the button (**1**) shines brightly.
  - The symbol (**2**) is **green** if the main hoist is switched on.




Of the *Hoists* indicator lamps, lamp **I** for the main hoist goes on.

- Enter the number of reeved ropes of the main hoist rope on the main boom on the *Reeving* display.




**Switching off the main hoist**

- Press the button (**1**) once.
  - The lamp in the button (**1**) shines dimly.
  - The symbol (**2**) is **red** if the main hoist is switched off.

Now the reeving for the main hoist has been stored and you can switch to the auxiliary hoist.



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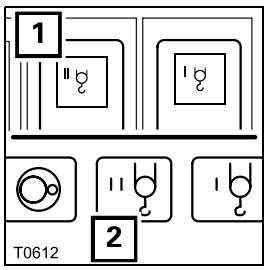
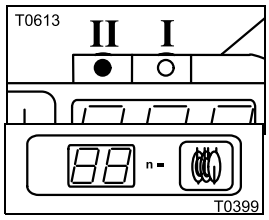



**Switching on the auxiliary hoist**

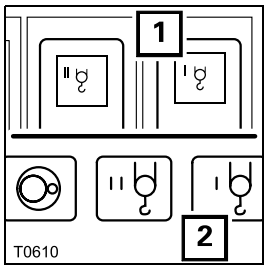
- Press the button (**1**) once.
  - The lamp in the button (**1**) shines brightly.
  - The symbol **2** is **green** if the auxiliary hoist is switched on.




Of the *Hoists* indicator lamps, lamp **II** for the auxiliary hoist now goes on.

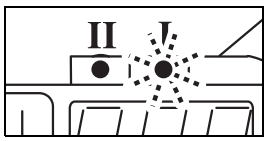
- Enter the number of reeved rope lines of the auxiliary hoist rope on the lattice extension on the *Reeving* display.

Now the reeving for the auxiliary hoist is also stored and you can switch on the main hoist.

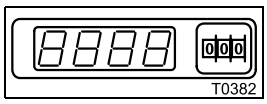



**Switching on the main hoist**

- Press the button (**1**) once.
  - The lamp in the button (**1**) shines brightly.
  - The symbol **2** is **green** if the main hoist is switched on.




Of the *Hoists* indicator lamps, lamp **II** for the auxiliary hoist goes on and lamp **I** for the main hoist flashes.




- Enter the SLI code according to the *Lifting capacity table* for the actual rigging mode of the truck crane with the rigged lattice extension.

The SLI is now set for two-hook operation. It now takes into account:

- The reeving for the auxiliary hoist
- The *Lifting capacity tables* for the lattice extension

# 7.3 Turning a load

When turning the load, proceed as is described in this section.

**Risk of accidents due to overloading**
Keep the acceleration forces to a minimum during two-hook operation. For this reason, move the load at minimum speed.

As soon as the load is attached to two hooks, there will be slight deviations on the *Current load* display. However, these deviations are still on the safe side with regard to an SLI shutdown.

In principal, loads are turned with the auxiliary single-sheave boom top or heavy load lattice extension in the same way as with the swing-away lattice as illustrated in the following.



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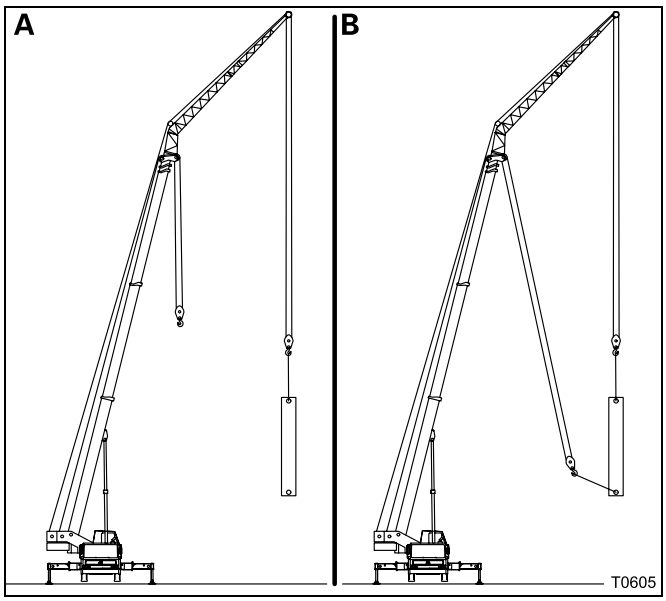
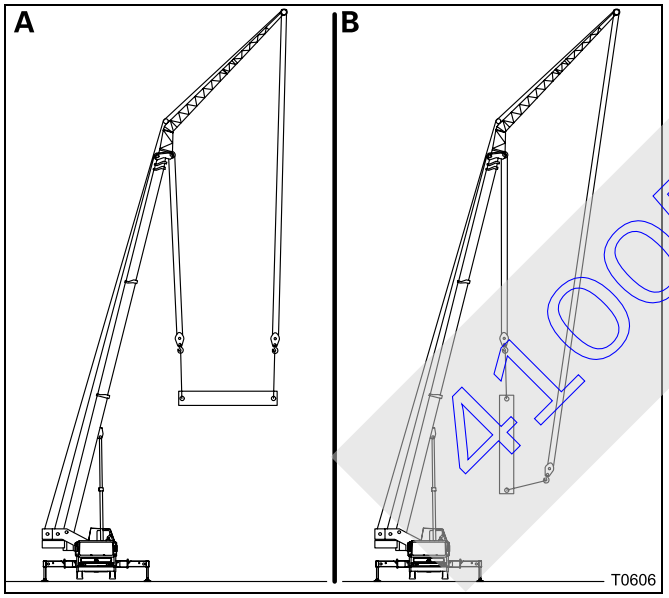



- (**A**) – First, sling the load only to the hook block of the lattice extension (rope of the auxiliary hoist).
- Raise the load completely with the lattice extension.
- (**B**) – Only now, attach the load to the hook block of the main boom as well (main hoist rope).




- (**A**) – Now lift the load with the hook block on the main boom until both slinging points are at the same height.
- (**B**) – Slacken the hoist rope on the lattice extension until the load is only hanging from the hook block on the main boom.

The load has now been completed turned.



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# 8 Driving with rigged crane





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# 8 Driving with rigged crane

## 8.1 Safety instructions

**Risk of accidents by not having a clear overview of the entire truck crane**
When driving the truck crane, stay in constant visual or radio contact with a banksman who can observe the sections you are unable to see, e.g. the raised boom in *0° to the rear* position.

**Risk of overturning due to slewing superstructure**
The slewing gear must be switched off when driving the rigged crane.

**Risk of accidents when driving with a raised load**
The truck crane may only be driven with a raised load if it is in a permissible *Free on wheels* working position in accordance with the *Lifting capacity table*.
The truck crane may not be driven from the driver's cab with a raised load.

**Risk of accidents when driving on public streets**
Driving on public streets is only permitted if all points of the *CHECKLIST: Checks before on-road driving* are fulfilled; ➠ *Operating instructions* of the truck crane.
Driving from the crane cab as well as driving the rigged truck crane are not permitted on public streets.

**Danger of tipping when driving the rigged truck crane**
Driving with a rigged truck crane is an operating mode which must be carried out with the utmost care. For this reason, make sure that you observe the listed safety instructions in the relevant sections; ➠ *Operating instructions* of the truck crane.



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## 8.2 Route

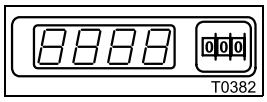
The route must be even. Uneven surfaces cannot be compensated with the level adjustment system.

The ground of the route must be stable enough to bear the axle loads.

If the surface pressure of the tyres exceeds the permissible load on the ground, the surface area of the tyres must be increased with packing of stable material (e.g. wooden planks).

## 8.3 Rigging modes and axle loads

**Driving without a load**




- Move the main boom and lattice extension into the prescribed position; ➠ *Tables with boom positions and axle loads*, p. 8 - 5.
- Enter the SLI code for the current working position in accordance with the *Lifting capacity table*.
- Tie down the hook block to prevent it from swinging.

**Risk of damage to the axle lines**
Always move the main boom and the lattice extension into the specified position before driving the rigged truck crane. Boom positions which deviate from the specified position can result in impermissible loads on the axle lines.

**Driving with a load**

It is not permitted to drive with a load on the attached lattice extension.

**Tables with axle loads**

The axle loads in the tables:

– Refer to a driving mode with the basic unit
– Apply both to the derricking swing-away lattice as well as to the inclinable swing-away lattice



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## 8.4 Before driving with the rigged crane

- Check the tyre pressure and the wind speed; ➠ *Operating instructions* of the truck crane.
- Switch off the slewing gear; ➠ *Operating instructions* of the truck crane.
- Put the truck crane on the wheels; ➠ *Operating instructions* of the truck crane. The suspension remains switched off.
- For reasons of safety, extend the outrigger beams as permitted by the available space. The outrigger pads may not touch the ground while driving the crane.

## 8.5 Driving the rigged truck crane

### Driving from the driver's cab

**Risk of accidents when driving the truck crane from the driver's cab with a raised load**
Drive the truck crane with a raised load only from the crane cab. You must be able to operate the crane at any time in the event of an emergency.

- Switch to the lowest starting gear; ➠ *Operating instructions* of the truck crane. In this way you can prevent the transmission from upshifting and keep the speed to a minimum.
- Switch on the separate steering; ➠ *Operating instructions* of the truck crane.

If necessary, you can

– Switch on the longitudinal differential locks

– Switch on the transverse differential locks

## Driving from the crane cab

**Risk of accidents when driving with a raised load**
The truck crane may only be driven with a raised load in the *Free on wheels* working position with the current rigging mode entered on the SLI.

- Check whether the idling speed is set to the default value. The rigged truck crane may only be driven at minimum speed.
- Switch to the lowest starting gear; ➠ *Operating instructions* of the truck crane. In this way you can prevent the transmission from upshifting and keep the speed to a minimum.
- Switch on the separate steering; ➠ *Operating instructions* of the truck crane.

If necessary, you can

– Switch on the longitudinal differential locks

– Switch on the transverse differential locks

## While driving

**Risk of accidents when driving with a raised load**
The maximum permissible speed when driving with a raised load is 1.5 km/h (1 mph).

- Only drive slowly, do not upshift.
- Driving around corners at a maximum turning radius.
- Steer the truck crane only when it is rolling and avoid sudden steering movements.

**Risk of damage to the steering linkage**
The steering linkage can become damaged if the steering is operated while the vehicle is stationary.

**Danger of overturning when switching on the suspension**
The suspension must be switched of (disabled) as long as the rigged truck crane is on wheels.
When switching on the suspension, the suspension cylinders would suddenly be pressed together and damaged, and the truck crane could overturn.

Never align the truck crane with the level adjustment system if the ground is uneven. In this case you must raise the truck crane with the supporting cylinders, level it and then lower it again.



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# 8.6 Tables with boom positions and axle loads

**Notes on the tables**

The axle loads specified in the following tables:

- Refer to a driving mode with the basic unit
- Apply both to the derricking swing-away lattice as well as to the inclinable swing-away lattice

The maximum axle load specified in the table is reached at a main boom angle of either 0° or 45°. When the maximum axle load is reached e.g. at the front, the axle load at the rear is below the specified maximum axle load. At main boom angles between 0° and 45°, the axle loads are below the specified maximum axle loads.

The following applies to the foot notes in the tables:

| | | |
|---|---|---|
| 1) | Boom position at the rear: | 0° position, boom over rear edge of truck crane |
| | Boom position at the front: | 180° position, boom over driver's cab |
| 2) | Front axle load: | On both the first and second axle line |
| | Rear axle load: | On both the third and fourth axle line |



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## 8.6.1 Swing-away lattice GMK 4100

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

All of the axle loads in the following table apply with a **20 t hook block** (weight: 300 kg (660 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 6.3 (13 800) | Values not available yet | | | | | |
| 8.5 (18 700) | | | | | | |
| 10.7 (23 500) | | | | | | |
| 12.9 (28 400) | | | | | | |
| 15.1 (33 200) | | | | | | |
| 17.3 (38 100) | | | | | | |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 19.5 (42 900) | Values not available yet | | | | | |
| 21.7 (47 800) | | | | | | |
| 23.9 (52 600) | | | | | | |
| 26.1 (57 500) | | | | | | |

1) _ 3) *Notes on the tables*, p. 8 - 5



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

All of the axle loads in the following table apply with a **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle | Lattice extension inclination | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 6.3 (13 800) | Values not available yet | | | | | |
| 8.5 (18 700) | | | | | | |
| 10.7 (23 500) | | | | | | |
| 12.9 (28 400) | | | | | | |
| 15.1 (33 200) | | | | | | |
| 17.3 (38 100) | | | | | | |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 19.5 (42 900) | Values not available yet | | | | | |
| 21.7 (47 800) | | | | | | |
| 23.9 (52 600) | | | | | | |
| 26.1 (57 500) | | | | | | |

1) _ 3) ➠ *Notes on the tables*, p. 8 - 5



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## 8.6.2 Swing-away lattice GMK 4100-L

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

All of the axle loads in the following table apply with a **20 t hook block** (weight: 300 kg (660 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 6.3 (13 800) | Values not available yet | | | | | |
| 8.5 (18 700) | | | | | | |
| 10.7 (23 500) | | | | | | |
| 12.9 (28 400) | | | | | | |
| 15.1 (33 200) | | | | | | |
| 17.3 (38 100) | | | | | | |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 19.5 (42 900) | Values not available yet | | | | | |
| 21.7 (47 800) | | | | | | |
| 23.9 (52 600) | | | | | | |
| 26.1 (57 500) | | | | | | |

1) _ 3) *Notes on the tables*, p. 8 - 5



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

All of the axle loads in the following table apply with a **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 6.3 (13 800) | Values not available yet | | | | | |
| 8.5 (18 700) | | | | | | |
| 10.7 (23 500) | | | | | | |
| 12.9 (28 400) | | | | | | |
| 15.1 (33 200) | | | | | | |
| 17.3 (38 100) | | | | | | |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 19.5 (42 900) | Values not available yet | | | | | |
| 21.7 (47 800) | | | | | | |
| 23.9 (52 600) | | | | | | |
| 26.1 (57 500) | | | | | | |



1) _ 3) *Notes on the tables*, p. 8 - 5

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## 8.6.3 Swing-away lattice GMK 5095

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

All the axle loads in the following table are valid for a **20 t hook block** (weight: 300 kg (660 lbs)) reeved on the lattice extension.

.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice extension inclination | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 9.5 (20 100) | Values not available yet | | | | | |
| 11.7 (25 800) | | | | | | |
| 13.9 (30 600) | | | | | | |
| 16.1 (36 500) | | | | | | |
| 18.3 (40 300) | | | | | | |
| 20.5 (45 200) | | | | | | |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 22.7 (50 000) | Values not available yet | | | | | |
| 24.9 (54 900) | | | | | | |
| 27.1 (59 700) | | | | | | |

1) _ 3) ➠ *Notes on the tables*, p. 8 - 5



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

All the axle loads in the following table are valid for an **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice extension inclination | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 9.5 (20 100) | Values not available yet | | | | | |
| 11.7 (25 800) | | | | | | |
| 13.9 (30 600) | | | | | | |
| 16.1 (36 500) | | | | | | |
| 18.3 (40 300) | | | | | | |
| 20.5 (45 200) | | | | | | |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 22.7 (50 000) | Values not available yet | | | | | |
| 24.9 (54 900) | | | | | | |
| 27.1 (59 700) | | | | | | |

1) _ 3) ➠ *Notes on the tables*, p. 8 - 5



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## 8.6.4 Boom extension GMK 4100

**22 m (72 ft) boom extension**

All of the axle loads in the following table apply with a **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle | Lattice extension inclination | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 12.9 (28 400) | Values not available yet | | | | | |
| 15.1 (33 200) | | | | | | |
| 17.3 (38 100) | | | | | | |
| 19.5 (42 900) | | | | | | |
| 21.7 (47 800) | | | | | | |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle | Lattice extension inclination | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 23.9 (52 600) | **Values not available yet** | | | | | |
| 26.1 (57 500) | | | | | | |

1) – 3) ➠ *Notes on the tables*, p. 8 - 5

**27 m (89 ft) boom extension**

All of the axle loads in the following table apply with a **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle | Lattice extension inclination | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 12.9 (28 400) | Values not available yet | | | | | |
| 15.1 (33 200) | | | | | | |
| 17.3 (38 100) | | | | | | |
| 19.5 (42 900) | | | | | | |
| 21.7 (47 800) | | | | | | |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 23.9 (52 600) | **Values not available yet** | | | | | |
| 26.1 (57 500) | | | | | | |

1) – 3) ➠ *Notes on the tables*, p. 8 - 5

## 8.6.5 Boom extension GMK 4100-L

**22 m (72 ft) boom extension**

All of the axle loads in the following table apply with a **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice extension inclination | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 12.9 (28 400) | Values not available yet | | | | | |
| 15.1 (33 200) | | | | | | |
| 17.3 (38 100) | | | | | | |
| 19.5 (42 900) | | | | | | |
| 21.7 (47 800) | | | | | | |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 23.9 (52 600) | **Values not available yet** | | | | | |
| 26.1 (57 500) | | | | | | |

1) – 3) ➠ *Notes on the tables*, p. 8 - 5

## 8.6.6 Boom extension GMK 5095

**22 m (72 ft)-boom extension**

All the axle loads in the following table are valid for an **8 t hook tackle** (weight: 200 kg (440 lbs)) reeved on the lattice extension.

| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice extension inclination | Main boom position[1] | Maximum axle load[2] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 11.7 (25 800) | Values not available yet | | | | | |
| 13.9 (30 600) | | | | | | |
| 16.1 (36 500) | | | | | | |
| 18.3 (40 300) | | | | | | |
| 20.5 (45 200) | | | | | | |
| 22.7 (50 000) | | | | | | |



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| Counter-weight in t (lbs) | Telescoping Telescopic section I-II-III-IV-V-VI | Main boom angle | Lattice exten-sion incli-nation | Main boom position[1)] | Maximum axle load[2)] in t (x 1000 lbs) | |
|---|---|---|---|---|---|---|
| | | | | | Front | Rear |
| 24.9 (54 900) | **Values not available yet** | | | | | |
| 27.1 (59 700) | | | | | | |

1) _ 3) ➠ *Notes on the tables*, p. 8 - 5

## 8.6.7 Auxiliary single-sheave boom top or heavy load lattice extension

The following section is valid for GMK 4100, GMK 4100-L and GMK 5095.

**Risk of accidents when driving from the crane cab**
Before driving the truck crane from the crane cab, note all instructions in the *Operating instructions* of the truck crane and set the rigging mode described there for working on free wheels; ➠ *Operating instructions* of the truck crane

**Auxiliary single-sheave boom top**

When the rigging mode for the working position *Free on wheels* has been established in accordance with the *Lifting capacity tables* and the main boom is within the permitted working area, the maximum axle load which will occur when driving the rigged truck crane with rigged auxiliary single-sheave boom top is 25 t (55,100 lbs) per axle.

**Heavy load lattice extension**

If a *Free on wheels* working position cannot be established:

- When driving with a rigged auxiliary single-sheave boom top or a rigged heavy load lattice extension, proceed in the same way as for driving with a rigged truck crane; ➠ *Operating instructions* of the truck crane.



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# 9 Maintenance





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# 9 Maintenance

Observe the general notes and the information on safety and environmental protection in the *Maintenance manual* of the truck crane delivered.

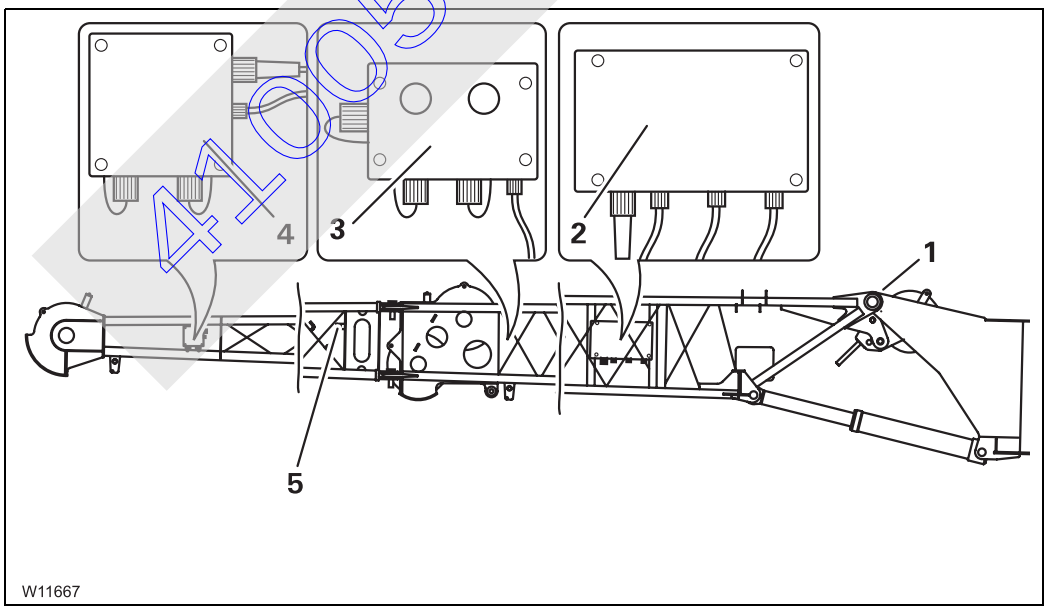
In this chapter you will find the information required for the maintenance of the lattice extensions.

– Maintenance intervals as in the *Maintenance manual* of the truck crane delivered; observe the factors that shorten the intervals;
– run-in regulations for the lattice extensions are not intended;
– periodic inspections are not intended.

## 9.1 Cleaning work

Observe the notes on cleaning with high-pressure cleaners in the *Maintenance manual* of the truck crane delivered.






- Provide protection for the following electrical parts during cleaning work:

**1** Potentiometer in the joint at section 1
**2** Control box at the rear at section 1
**3** Control box at the front at section 1
**4** Control box at the front at section 2

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# 9.2 Maintenance overview GMK 4100, GMK 4100-L

## 9.2.1 Maintenance plan M 1 — M 1

| Lattice extension maintenance work: monthly / after 100 operating hours | Lubricant 1) | Lubricant in litres (gal) |
|---|---|---|
| **Swing-away lattice** – Lubricate pins; ➠ p. 9 - 5. | **J** | |
| **Boom extension** – Lubricate pins; ➠ p. 9 - 5. | **J** | |
| **Auxiliary single-sheave boom top and heavy load lattice extension** – Lubricate pin; ➠ p. 9 - 6. | **J** | |

1) ➠ Lubrication chart in the *Maintenance manual* of the truck crane delivered



## 9.2.2 Maintenance plan M 12 — M 12

| Lattice extension maintenance work: every 12 months / after 1,000 operating hours | Lubricant 1) | Lubricant in litres (gal) |
|---|---|---|
| **Swing-away lattice** – Lubricate joints; ➠ p. 9 - 6. | **J** | **2** |

1) ➠ Lubrication chart in the *Maintenance manual* of the truck crane delivered

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# 9.3 Maintenance overview GMK 5095

## 9.3.1 Maintenance plan M 1 — M 1

| Maintenance work on the LATTICE EXTENSION: monthly / after 100 oper. hrs. | |
|---|---|
| **Swing-away lattice**<br>– Lubricate pin | ➠ p. 9 - 5 |
| **Boom extension**<br>– Lubricate pin | ➠ p. 9 - 5 |
| **Auxiliary single-sheave boom top and heavy load lattice extension**<br>– Lubricate pin | ➠ p. 9 - 6 |



## 9.3.2 Maintenance plan M 12 — M 12

| Maintenance work on the LATTICE EXTENSION: every 12 months / after 1000 oper. hrs | |
|---|---|
| **Swing-away lattice**<br>– Lubricate joints | ➠ p. 9 - 6 |

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# 9.4 Description of the maintenance work

## 9.4.1 Lubricate pin M 1

**Grease, spare parts and tools**

The following table holds only for GMK 5095:

| Grease [1] | Designation per DIN 51502 | Specification Classification | GROVE part no.[1] |
|---|---|---|---|
| Grease | KP - L2K | DIN 51825 | 00554201 |

[1] ➠ Lubricant list and lubricant use *Maintenance manual* GMK 5095

– Brush.

| Designation | Quantity | GROVE part no. |
|---|---|---|
| No spare parts | | |



Lubricate the pins additionally after every high-pressure cleaning in order to avoid corrosion.

**At the swing-away lattice**

**Prerequisites**

– The truck crane is secured against unauthorised use; ➠ *Maintenance manua* for the supplied truck crane.

or:

– The swing-away lattice has been removed; ➠ p. 3 - 10.

**Lubricating pins:**

Lubricate all pins:

– Pins for the connections with folded swing-away lattice; ➠ p. 3 - 37.
– Pins for the connections on the left and right-hand side of the main boom head; ➠ p. 3 - 49.
– Pins for the section 1 and section 2 connections; ➠ p. 3 - 59.
– Pins on the deflection sheave; ➠ p. 3 - 64.
– Spring latch on the hose drum; ➠ p. 3 - 33.

**On the boom extension**

Lubricate all pins of the boom extension:

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– Pins for the section 3 and section 4 connections; ➠ p. 4 - 9.
– Pins on the deflection sheave; ➠ p. 4 - 18.

**On auxiliary single-sheave boom top and heavy load lattice extension**

– Lubricate the pins for the connections on the left and right of the main boom head.

## 9.4.2 Lubricate joints — M 12

**Grease, spare parts and tools**

The following table holds only for GMK 5095:

| Grease [1] | Designation per DIN 51502 | Specification Classification | GROVE part no.[1] |
|---|---|---|---|
| Grease | KP - L2K | DIN 51825 | 00554201 |

[1] ➠ Lubricant list and lubricant use *Maintenance manual* GMK 5095

– Grease gun

| Designation | Quantity | GROVE part no. |
|---|---|---|
| No spare parts | | |



**Prerequisites**

– The truck crane must be secured to prevent unauthorised use; ➠ *Maintenance manual* of the truck crane delivered, or:
– swing-away lattice is removed; ➠ p. 3 - 10.

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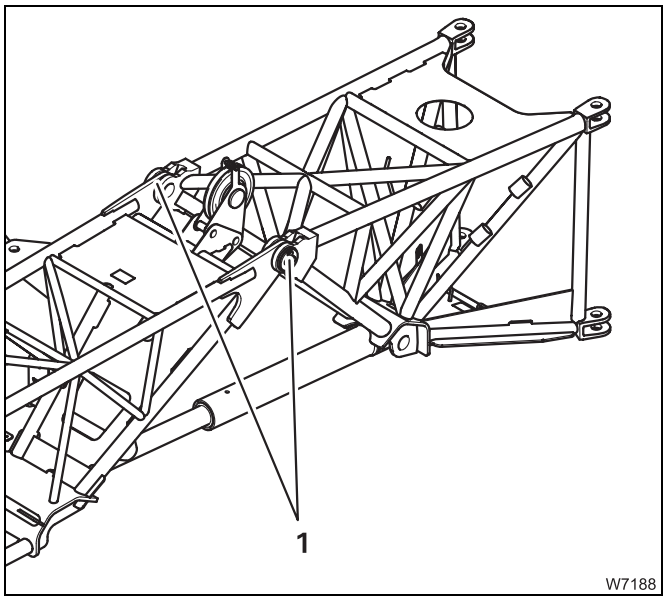
## Lubricating joints




There is one lubricating nipple (**1**) in the pivot point at section 1.

- Clean the grease nipples (**1**).
- Press grease into the lubrication nipple (**1**) until new grease comes out of the lubrication point.

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# 10 Index



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# 10 Index

The index has the following structure:

The names of the parts or components you are searching for are listed in alphabetical order on the far left at the beginning of the line. The following are indented under these terms:

- Operations (e.g. applying / removing the hoist rope) or
- Sub-terms (e.g. transport) or
- Sub-terms related to operations (e.g. swivelling the lattice extension)

The first search word is always a noun and is followed by an operation or a sub-term.



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**R** Rigging aid (additional equipment)



**S** Safety instructions

**T** Transport


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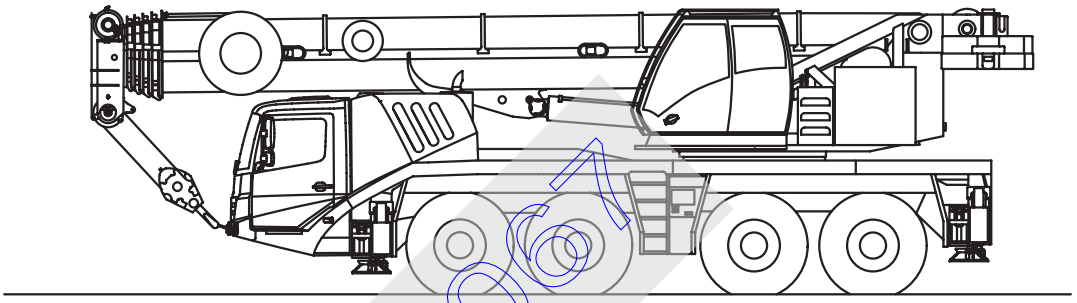
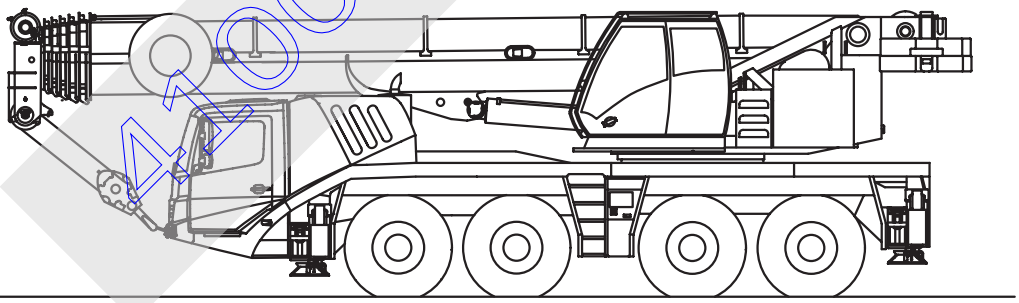
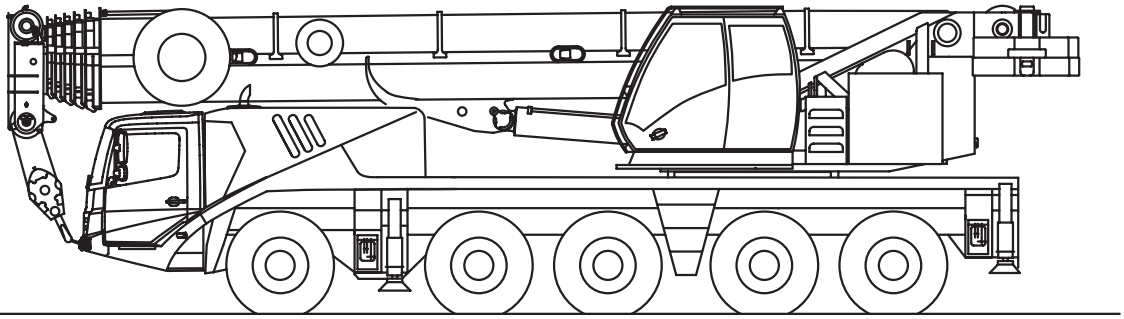
# GMK4100/4100-L/5095









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