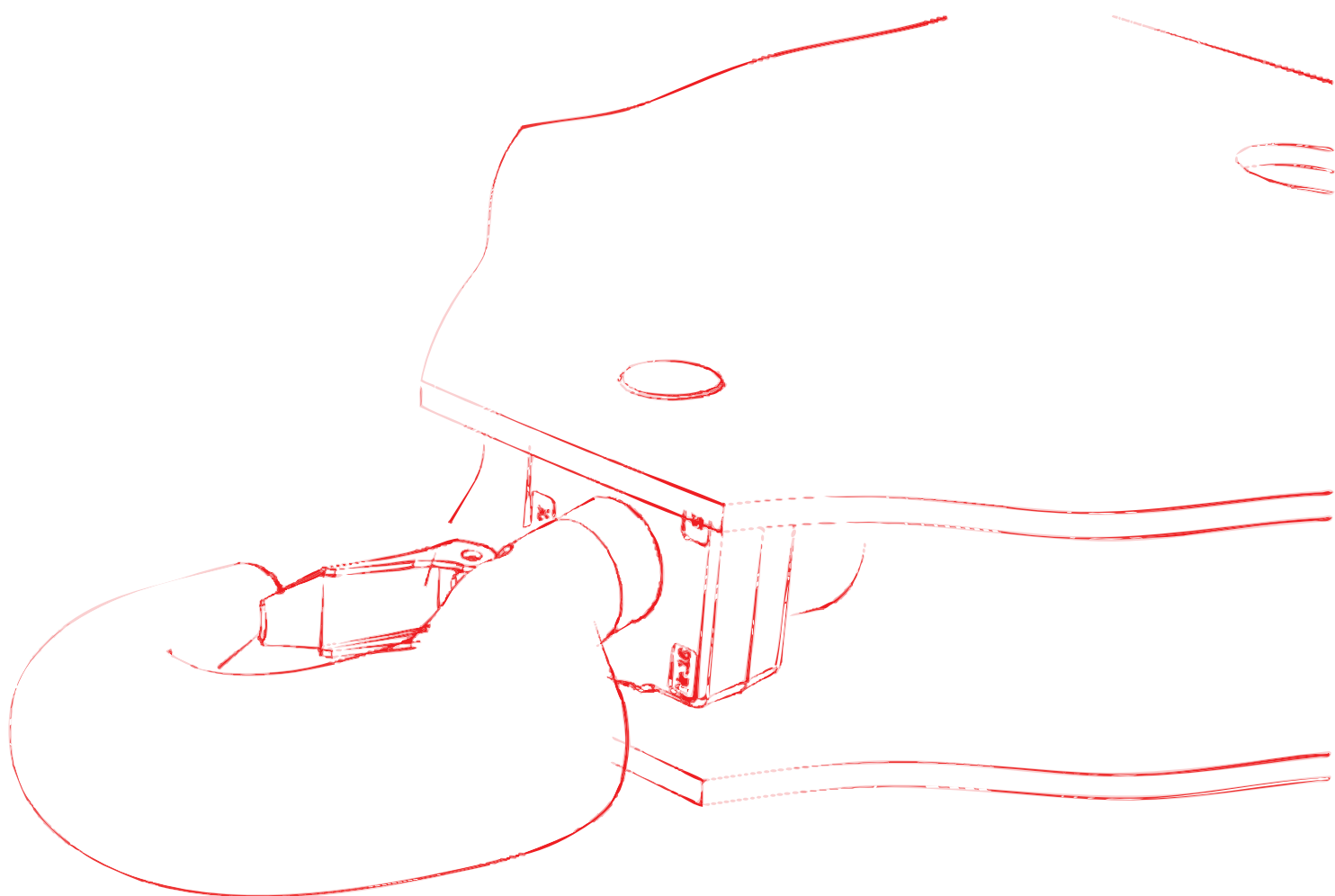


## **Technical Information**

### **System component**

### **WOLFF Outer Climbing Device**



**Original operating manual**

German  
English



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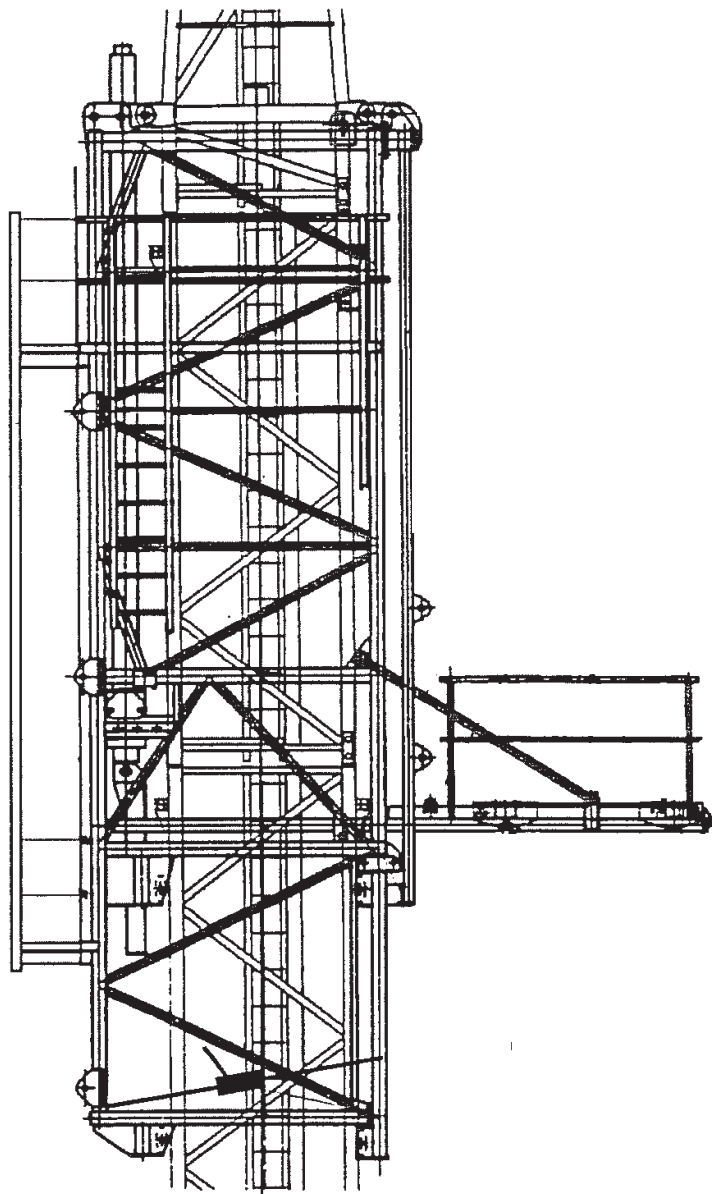
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## 1 Outer climbing device KWH 15.2

### 1.1 Technical data KWH 15.2



*Outer climbing device KWH 15.2*

The climbing frame can be mounted or dismounted using the WOLFF slewing tower crane itself or a mobile crane.

For mounting the hydraulic outer climbing device, the WOLFF slewing tower crane must have the following minimum hook heights.

#### **Stationary on the foundation**

- |                    |                    |
|--------------------|--------------------|
| ▪ 2 tower elements | 10.5 m hook height |
|--------------------|--------------------|

#### **Mobile**

- |                    |                    |
|--------------------|--------------------|
| ▪ 3 tower elements | 15.0 m hook height |
|--------------------|--------------------|

After climbing has been completed, the climbing device must be lowered (down to the brace connected to the building or down to the tower base) or dismantled.

### Climbing device, complete

Weight	6600 kg
--------	---------

### Hydraulic cylinder: 2190

Lifting time	Approx. 7 min
Force at 300 bar	600 kN
Operating pressure max.	300 bar
Piston surface, lifting, Ø 160 mm	201 cm <sup>2</sup>
Piston surface, lowering, Ø 160/140 mm	47 cm <sup>2</sup>
Stroke max.	5350 mm
Emergency lowering	Possible

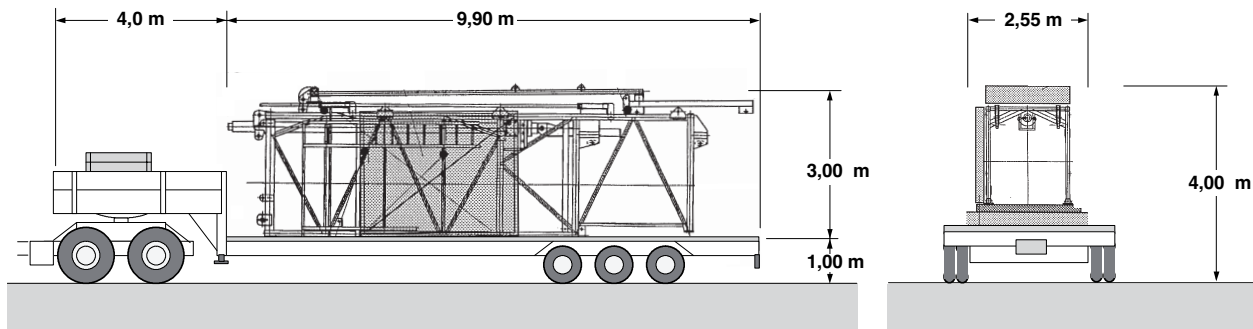
### Hydraulic unit: 2529

Fluid filling ISO VG 68	130 liters
Initial filling Aral Vitam GF 68	
Fluid filter with contamination indicator	
Pressure gauge	
Pressure relief valve set to	300 bar
Pump	17 l/min.
Three phase motor	7.5 kW, 1450 min <sup>-1</sup> , 100% duty cycle, 380 V, 50 Hz

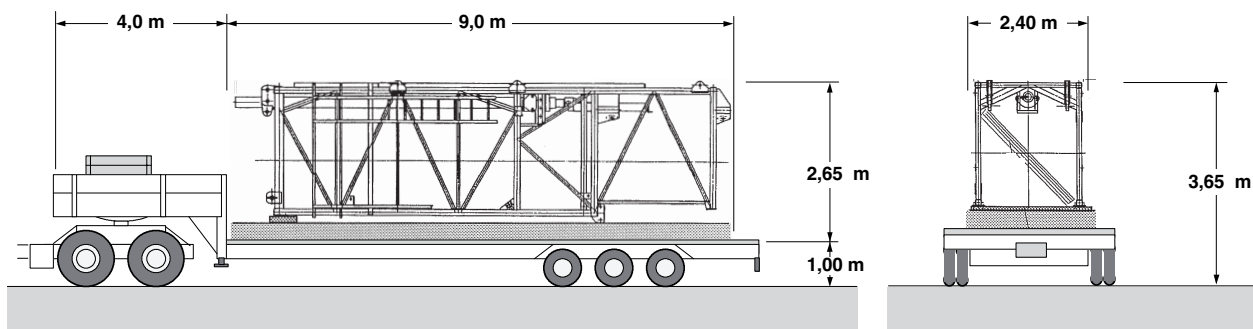
### Control:

manual	via control lever
--------	-------------------

## 1.2 Transport dimensions KWH 15.2



Loading example 1 KWH 15.2



Loading example 2 KWH 15.2

For transport, the climbing device can be loaded as shown in the example below.

Always comply with relevant traffic regulations when driving on public roads, highways etc.

- For transport, the climbing device can be dismounted (refer to package list).
- Lock up the hydraulic unit.
- Secure the hydraulic cylinder using the transport lock.
- The piston cross bar must be secured for transport.
- The climbing frame must be secured for transport.

### Loading example 1

- Front assembly bolted to the climbing frame.
- Moving carriage support with tie bars and moving carriage bolted to the side of the climbing frame.

### Loading example 2

- Front assembly dismounted and placed in the climbing frame.
- Moving carriage support and moving carriage placed in the climbing frame.

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## 2 Outer climbing device KWH 20.3.1

### 2.1 Technical data KWH 20.3.1

The climbing frame can be mounted or dismounted using the WOLFF slewing tower crane itself or a mobile crane.

For mounting the hydraulic outer climbing frame, the WOLFF slewing tower crane must have the following minimum hook heights.

<b>Stationary on foundation</b>	
2 tower elements	10.5 m hook height

<b>Stationary on cross frame:</b>	
3 tower elements 1 cross frame	14.7 m hook height

<b>Stationary on cross frame element</b>	
2 tower elements 1 cross frame element	14.5 m hook height

<b>Stationary on undercarriage</b>	
2 tower elements 1 bogie truck	15.0 m hook height

After climbing has been completed, the climbing frame must be lowered (down to the brace connected to the building or down to the tower base) or dismounted.

<b>Climbing frame, complete</b>	
Weight	8700 kg

<b>Hydraulic cylinder: 151-41284</b>	
Weight	1560 kg
Lifting time	Approx. 10 min
Force at 300 bar	940 kN
Operating pressure max.	320 bar
Piston surface, lifting, Ø 200 mm	314 cm²
Piston surface, lowering, Ø 200/160 mm	113 cm²
Stroke max.	5400 mm
Emergency lowering	Possible

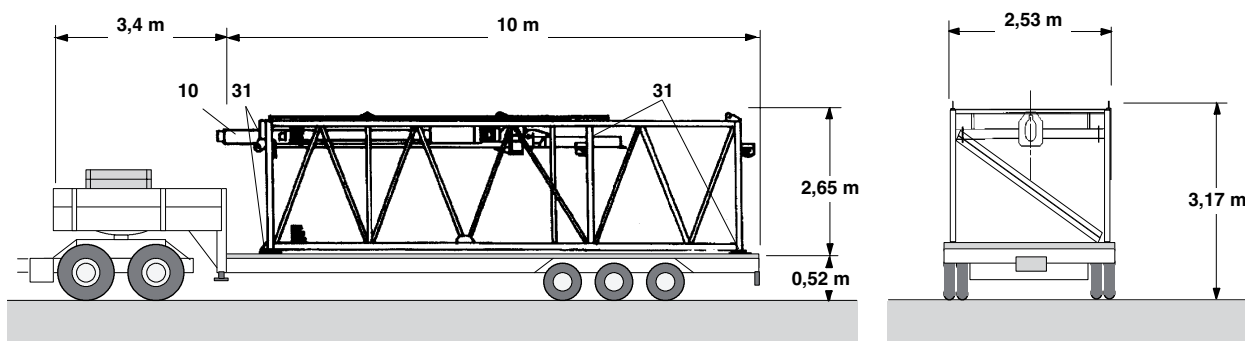
<b>Hydraulic-unit: 299-40542</b>	
Weight	275 kg
Fluid filling ISO VG 32	220 liters (160 liters tank capacity)
Initial filling ESSO NUTO H 32	
Fluid filter with contamination indicator	
Pressure gauge	
Pressure relief valve set to	320 bar.
Pump	25 l/min
Squirrel-cage motor	11 kW, 1500 min-1, 100% duty cycle, 400 V, 50 Hz

**Control system: 75040337**

Electrical

Hand-held control console

## 2.2 Transport dimensions KWH 20.3.1



For transport, the climbing frame can be loaded as shown in the example below.

Always comply with relevant traffic regulations when driving on public roads, highways etc.

- For transport, the climbing frame must be dismantled (refer to package list).
- Lock up the hydraulic unit.
- Secure the hydraulic cylinder using the transport lock.
- The piston cross bar must be secured for transport.
- The climbing frame must be secured for transport.

### Loading example

Place the front assembly in the climbing frame. Place the side platforms and railings in the climbing frame. Moving carriage support with moving carriage, and tie bars may be placed on the elevated front part (gooseneck) of the low platform trailer.

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## 3 Outer climbing device KWH 20.6.1

### 3.1 Technical data KWH 20.6.1

The climbing frame can be mounted or dismounted using the WOLFF slewing tower crane itself or a mobile crane.

For mounting the hydraulic outer climbing frame, the WOLFF slewing tower crane must have the following minimum tower height.

<b>Stationary on the foundation</b>	
2 tower elements	10.5 m hook height
Stationary on the cross frames (traveling cross frame):	
2 tower elements 1 cross frame	11.5 m hook height
Stationary on cross frame element	
2 tower elements 1 cross frame element	14.5 m hook height
Stationary on undercarriage	
2 tower elements 1 undercarriage	15.0 m hook height

After climbing has been completed, the climbing device must be lowered (down to the brace connected to the building or down to the tower base) or dismounted.

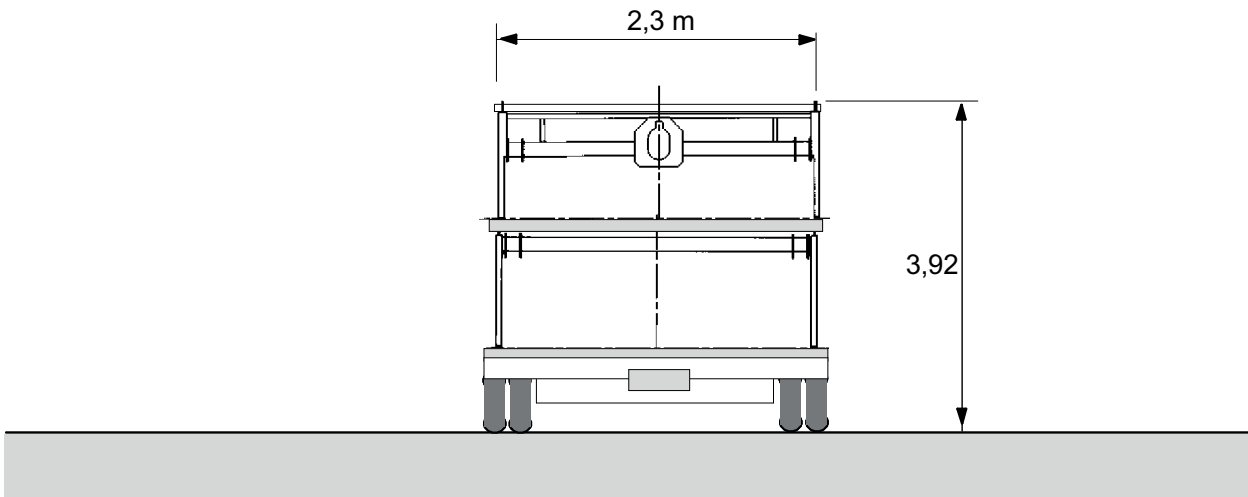
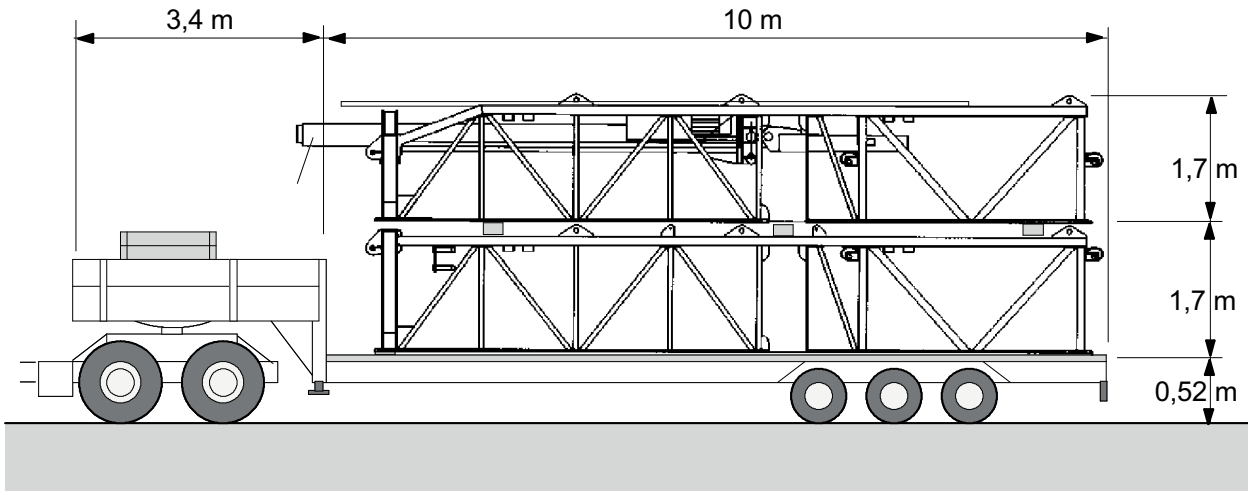
<b>Climbing device, complete</b>	
Weight	11540 kg

<b>Hydraulic cylinder: 151-41132</b>	
Weight	2430 kg
Lifting time	Approx. 10 min
Force at 300 bar	1340 kN
Operating pressure max.	320 bar.
Piston surface, lifting, Ø 240 mm	452 cm²
Piston surface, lowering, Ø 240/180 mm	198 cm²
Stroke max.	5400 mm
Emergency lowering	Possible

<b>Hydraulic-unit: 299-40489</b>	
Weight	500 kg
Fluid filling ISO VG 32 Initial filling ESSO NUTO H 32	300 liters
Fluid filter with contamination indicator	
Pressure gauge	
Pressure relief valve set to	320 bar.
Pump	34 l/min.
Squirrel-cage motor	15 kW, 1500 min-1, 100% duty cycle, 400 V, 50 Hz

<b>Control: 750-40338</b>	
Electrical	Hand-held control console

## 3.2 Transport dimensions KWH 20.6.1



For transport, the climbing frame can be loaded as shown in the example below.

Always comply with relevant traffic regulations when driving on public roads, highways etc.

- For transport, the climbing frame must be dismounted (refer to package list).
- Lock up the hydraulic unit.
- Secure the hydraulic cylinder using the transport lock.
- The piston cross bar must be secured for transport.

## 4 Outer climbing device KWH 23.1

### 4.1 Technical data KWH 23.1

The climbing frame can be mounted or dismounted using the WOLFF slewing tower crane itself or a mobile crane.

For mounting the hydraulic outer climbing frame, the WOLFF slewing tower crane must have the following minimum tower height.

Stationary on the foundation		
<b>Slewing section with HT 23 tower head section lower part:</b> 2 tower elements for slewing section with HT 23 tower head section lower part	<b>Slewing section without HT 23 tower head section lower part:</b> 2 tower elements + joining frame VR 2023 or VR 2523 for slewing section without HT 23 tower head section lower part	Tower height: min. 9.0 m

Stationary on the cross frames (traveling cross frame):		
<b>Slewing section with HT 23 tower head section lower part:</b> 2 tower elements 1 cross frame e.g. KR 12-60/80 (1 traveling cross frame e.g. KRF 4 12-60/80) With maximum ballast, 3 tower elements must be used.	<b>Slewing section without HT 23 tower head section lower part:</b> 2 tower elements + 1 joining frame VR 2023 or VR 2523 1 cross frame e.g. KR 12-60/80 (1 traveling cross frame e.g. KRF 4 12-60/80) With maximum ballast, 3 tower elements must be used.	10.4 m min. tower height (14.9 m min. tower height with max. ballast)

After climbing has been completed, the climbing device must be lowered (down to the brace connected to the building or down to the tower base) or dismounted.

Climbing device, complete	
Weight	18265 kg

Hydraulic cylinder: 151-42735	
Weight (without Oil)	3347 kg
Lifting time	Approx. 12 min
Force at 350 bar	2100 kN
Operating pressure max.	350 bar.
Piston surface, lifting, Ø 280 mm	616 cm²
Piston surface, lowering, Ø 280/230 mm	200 cm²
Stroke max.	5400 mm
Emergency lowering	Possible

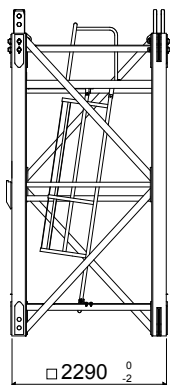
Hydraulic-unit: 299-40880	
Weight	381 kg
Fluid filling ISO VG 32 Initial filling ESSO NUTO H 32	360 liters
Fluid filter with contamination indicator	
Pressure gauge	
Pressure relief valve set to	350 bar.

## Hydraulic-unit: 299-40880

Pump	34 l/min.
Squirrel-cage motor	18.5 kW, 1500 min-1, 100% duty cycle, 400 V, 50 Hz

## Control system: 75040337

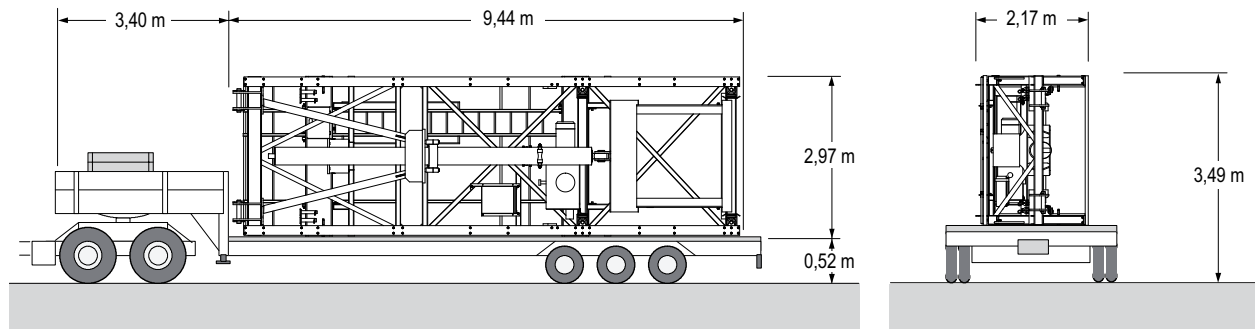
Electrical	Hand-held control console
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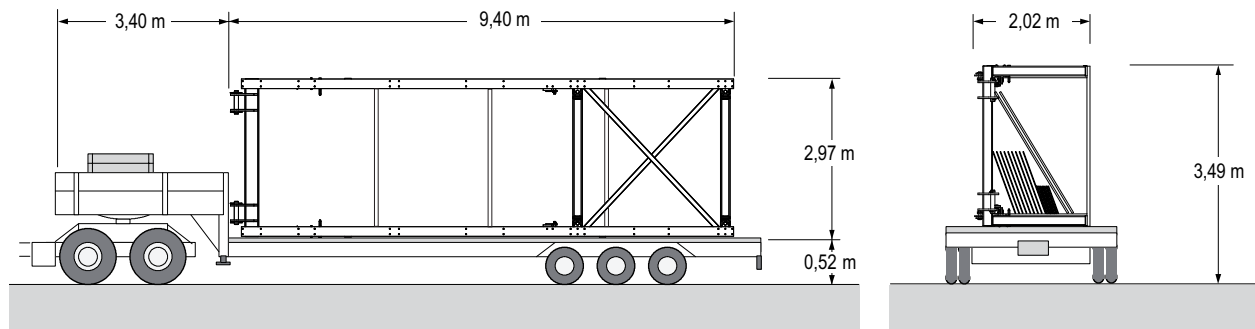
*Tolerance of the HT23 for the roller guide of the KWH 23*



## 4.2 Transport dimensions KWH 23.1



*Rear half of climbing frame*



*Front half of climbing frame with add-on elements*

For transport, the climbing device can be loaded as shown in the example below.

Always comply with relevant traffic regulations when driving on public roads, highways etc.

- For transport, the climbing device must be dismantled (refer to package list).
- Lock up the hydraulic unit.
- Secure the hydraulic cylinder using the transport lock.
- The piston cross bar must be secured for transport.
- The climbing frame must be secured for transport.

### Loading example for rear half of climbing frame

Rear half of the climbing frame with the hydraulic system installed and the mounting platform attached and folded away.

### Loading example for front half of climbing frame

Place the side platforms and railings in the front half of the climbing frame. Moving carriage support with moving carriage, and tie bars may be placed on the elevated front part (gooseneck) of the low platform trailer.

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## 5 Outer climbing device KWH 29

### 5.1 Technical data KWH 29

The climbing frame can be mounted or dismounted using the WOLFF slewing tower crane itself or a mobile crane.

For mounting the hydraulic outer climbing frame, the WOLFF slewing tower crane must have the following minimum tower height.

Stationary on the foundation	
1 joining frame 2 tower elements	Tower height 10.2 m
Stationary on cross frame:	
1 joining frame 2 tower elements 1 cross frame	Tower height 12.0 m

After climbing has been completed, the climbing device must be lowered (down to the brace connected to the building or down to the tower base) or dismounted.

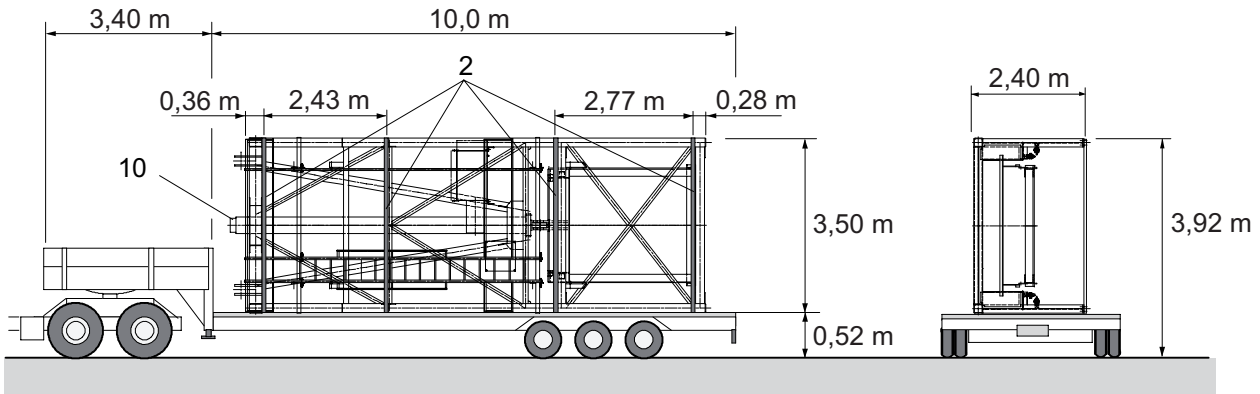
Climbing device, complete	
Weight	19330 kg

Hydraulic cylinder: 151-41501	
Weight	2150 kg
Lifting time	Approx. 12 min
Force at 290 bar	1700 kN
Operating pressure max.	300 bar
Piston surface, lifting, Ø 280 mm	616 cm <sup>2</sup>
Piston surface, lowering, Ø 280/200 mm	302 cm <sup>2</sup>
Stroke max.	5400 mm
Emergency lowering	Possible

Hydraulic-unit: 299-40880	
Weight	381 kg
Fluid filling ISO VG 32 Initial filling ESSO NUTO H 32	420 liters
Fluid filter with contamination indicator	
Pressure gauge	
Pressure relief valve set to	350 bar.
Pump	34 l/min.
Squirrel-cage motor	18.5 kW, 1500 min <sup>-1</sup> , 100% ED, 400 V, 50 Hz

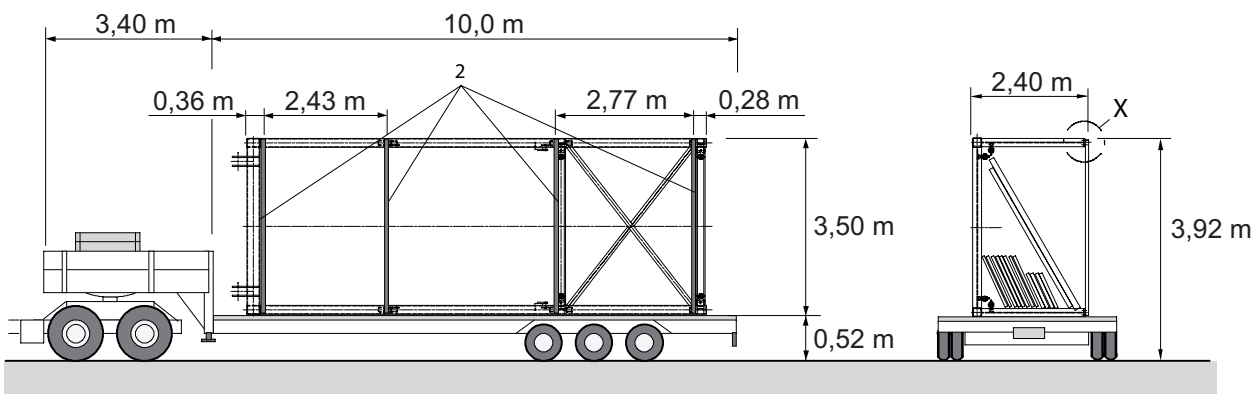
Control:	
Electrical	Hand-held control console

## 5.2 Transport dimensions KWH 29



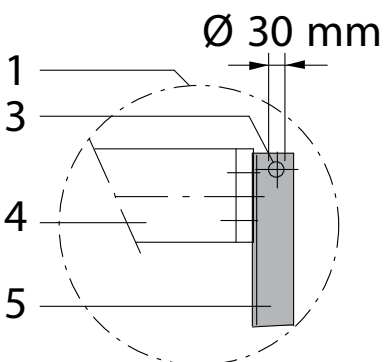
Loading example 1

2	Transport lock	10	Hydraulic cylinder
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Loading example 2

2	Transport lock	X	Detail X
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Detail X

1	Detail X	4	Climbing frame
3	Suspension bore	5	Transport lock (8 pc.: 100x10x3490)

For transport, the climbing frame can be loaded as shown in the example below.

Always comply with relevant traffic regulations when driving on public roads, highways etc.

- For transport, the climbing frame can be dismantled (refer to package list).
- Lock up the hydraulic unit.
- Bolt 4 transport locks with suspension bores to each half of the climbing frame (see drawing).
- Lock the ventilation valve at the hydraulic unit.
- The climbing cross bar must be bolted to the climbing frame for transport.

### **Loading example 1**

- Rear half of the climbing frame with the hydraulic system installed and the rear mounting platform attached and folded away.

### **Loading example 2**

- Front half of the climbing frame
- Side platforms
- Moving carriage support with moving carriage
- Standard railings
- Crate with small parts

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## 6 Outer climbing device KWH 33

### 6.1 Technical data KWH 33

The hydraulic exterior climbing gear KWH 33.1, is an erection device to increase the tower during construction and serves to assemble or disassemble the tower elements TV 33-5.

The climbing tower element with hydraulic cylinder, hydraulic unit and climbing cross bar remains at the slewing tower crane between tower top lower part and tower.

The climbing frame with guide pulleys and moving carriage may be assembled, lowered down or disassembled by means of the WOLFF slewing tower crane.

For mounting the climbing frame, the WOLFF slewing tower crane must have the following minimum tower height:

Stationary on the foundation	
3 tower elements TV 33-5 + Climbing tower element	Tower height: min. 20.0 m

Stationary on cross frame element	
3 tower elements TV 33-5 + Climbing tower element + KRE 4120	Tower height: min. 28.7 m

Stationary on undercarriage	
3 tower elements TV 33-5 + Climbing tower element + UW 4120	Tower height: min. 30.0 m

After climbing has been completed, the climbing device must be lowered (down to the brace connected to the building or down to the tower base) or dismantled.

Climbing device	
Weight of climbing tower element complete	20700 kg
Weight of climbing frame complete	22500 kg

Hydraulic cylinder: 166-40612 - Climbing tower element	
Lifting time	approx. 15 min
Pressure at 320 bar	3078 kN
traction force at 110 bar	640 kN
Piston surface, lifting, Ø 350 mm	961 cm²
Piston surface, lowering, Ø 350 mm / 220 mm	581 cm²
Stroke max.	5430 mm
Emergency lowering	Possible

Hydraulic unit: 299-40871 - Climbing tower element	
Fluid filling ISO VG 32	600 liters
Initial filling ESSO NUTO H 32	
Fluid filter with contamination indicator	
Oil gauge glass with temperature indicator	
Pressure gauge	
Pressure relief valve	Set to 320 bar
Pump	51 l/min.
Three phase motor	22 kW, 1500 min⁻¹, 100% ED, 400/690 V, 50 Hz

Control - Hydraulic cylinder climbing tower element:	
manual	via hand lever

### Control - Hydraulic cylinder climbing tower element:

Electrical	Hand-held control console
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### Hydraulic cylinder: 153-41829 - Moving carriage

Lifting time	approx. 1.5 min
Pressure at 40 bar	max. 12 kN
traction force at 40 bar	max. 6 kN
Piston surface, pushing, Ø 63 mm	31 cm <sup>2</sup>
Piston surface, pulling, Ø 63 mm / 45 mm	15 cm <sup>2</sup>
Stroke max.	4000 mm

### Hydraulic unit: 299-40994 - Moving carriage

Fluid filling ISO VG 32	15 liters
Initial filling ESSO NUTO H 32	
Oil filter	
Pressure gauge	
Pressure relief valve	Set to 40 bar
Pump	5 l/min.
Three phase motor	0.55 kW, 1500 min <sup>-1</sup> , 100% ED, 400 V, 50 Hz

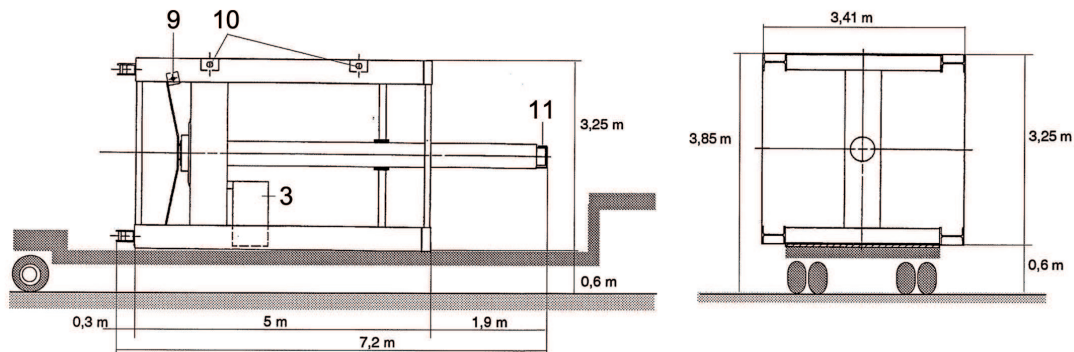
### Control - Hydraulic cylinder moving carriage:

manual	via hand lever
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## 6.2 Transport dimensions KWH 33

For transport, the climbing tower element can be loaded as shown in the example below.

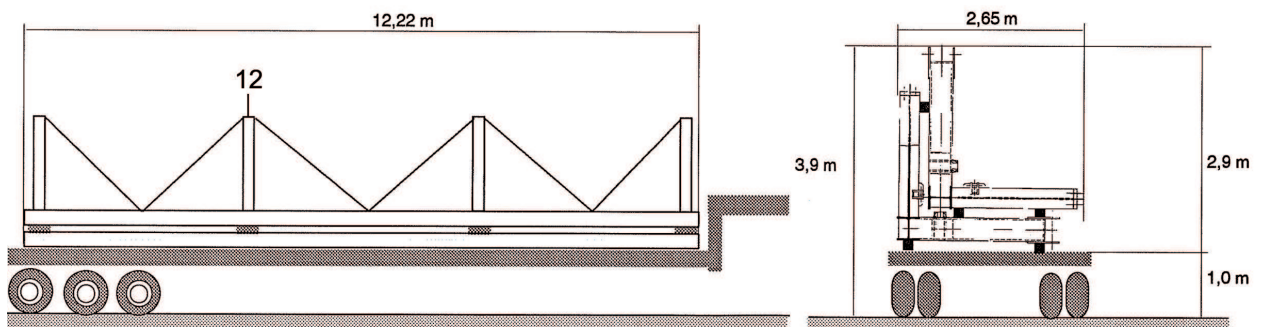


3	Hydraulic unit	10	Lifting eyes
9	Transport lock climbing cross beam	11	Protection cover

Always comply with relevant traffic regulations when driving on public roads, highways etc.

- For transport, disassemble the side-mounted lifting plates to meet the transport width of 3.41 m.
- Lock the hydraulic unit for transport.
- Mount the protection cover to the top of the hydraulic cylinder.
- The climbing cross beam has to be bolted for transport.  
Bolts (Ø 80/60x172), spring retainers (Ø 10/60-80)

For transport, the climbing frame can be loaded as shown in the example below.



12	Corners of the climbing frame
----	-------------------------------

- Put loose parts for assembly in the transport box.

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