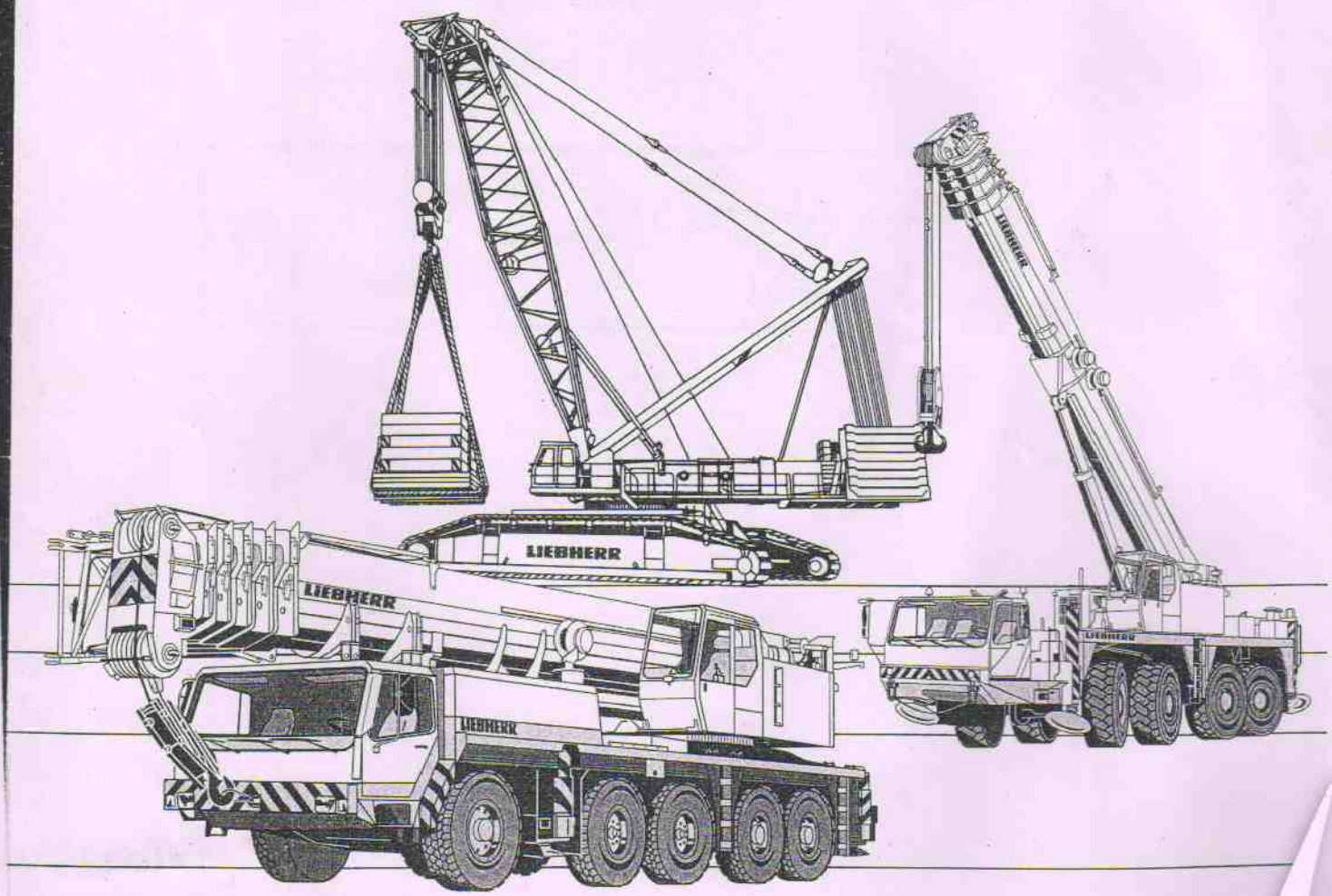
LTM 1060

Load charts
Traglasttabellen



02

LIEBHERR

COUNTERWEIGHT: 4.6 tonne STD
5.4b extra on deck.

LIEBHERR
TELESCOPIC BOOM MOBILE CRANE

Type LTM 1060

Load Charts

and notes for crane operation

Charts' no. 16 / 063-02

Page : 1 to 21

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OAD CAPACITY TABLE

lescopic boom, wide supporting base
B 16 814 10
B 16 818 11
B 16 205 12
B 16 242 13

lding fly jib 2.5°
B 16 811 14
B 16 225 15

lding fly jib 12.5°
B 16 812 16
B 16 228 17

lding fly jib 22.5°
B 16 813 18
B 16 231 19

lescopic boom, crane freestanding on tires
B 16 824 20
B 16 235 21

NOTES FOR CRANE OPERATION

A) Important notes

1. The lifting capacities are indicated in metric tons.
2. The working radius is the horizontal distance between the center of gravity of the load and the slewing axis of the crane superstructure, measured at the ground. Boom flexing under nominal load is taken into consideration.
3. Any and all other boom positions not specified in the load capacity table are not permitted.
4. Even without a load, the boom must only be moved within those ranges as specified in the load charts as there is still the danger of the crane tipping over. In normal operations, this is ensure by the overload safety device. When switching to "Erecting" (with the erecting key- operated switch), the boom must not be luffed outside of the specified working radius range.
5. The specified load capacities include the weights of the load bearing elements, lifting tackle and slinging tackle. The possible weight of the load to be lifted is thus less than that of the weights given above.
6. The number values listed under "Extending condition of telescopic sections [%]" indicate how far the individual telescopic sections must be extended to reach a certain boom length. All and any extension conditions other than those indicated are not permitted.

B) Crane operating mode "Crane supported"

1. Before supporting, the axle suspension must be locked.
2. The sliding arms (outriggers) of the hydraulic support must be extended to the point as specified in the load chart (both sides simultaneously).
3. The sliding arms (outriggers) must be secured with pins.
4. The support pads on the support jacks have a sufficiently large foundation of suitable materials corresponding to the type of surface to be worked upon.
5. All wheels must be raised from the ground.
6. The crane must be horizontally aligned with the aid of the level gauges. During subsequent crane operations, the horizontal position of the crane must occasionally be monitored and corrected if necessary.

C) Crane operation mode "Free standing on tires"

Operations can be carried out with the crane free standing on tires if the following notes are observed and adhered to:

1. The length of the telescopic boom must **not** exceed 19,2 m.
2. The crane superstructure must be positioned over rear along the vehicle's longitudinal axis and locked with the chassis.
   To slew the superstructure to the working position "over rear", the crane must be supported and horizontally aligned before raising the telescopic boom from its rest.This procedure requires that the sliding arms are extended and secured with pins. The telescopic boom must be completely retracted. The Safe Load Indicator must be set to the appropriate and corresponding operating mode. The same procedure must be carried out in order to return the crane from the working position "free standing, working over rear" back to driving condition.
3. The foundation must be capable of supporting the maximum operating weight of the crane including the weight of the load.
4. The foundation must be even and without inclinations.
5. The suspension of all axles must be locked.
6. The prescribed air pressure must be present in all tires (see load chart).
7. Whenever possible, the sliding arms should be extended and the support jacks with attached support pads should be lowered to a point just above the ground so that the crane is caught and supported on the supports should the foundation give way.

D) Driving with a load

The crane can be driven with a load suspended if the notes in C) above are observed and adhered to. In addition, the following must also be observed:

1. Driving speed must be as slow as possible (1st gear).
2. Jerking movements must be avoided.
3. The load must be as close as possible to the ground and prevented from swinging.

E) Danger of tipping, or danger of overstressing:

1. if the slewing platform is swung out of the vehicle's longitudinal axis. The crane must first be supported.
2. if the loads, boom lengths and/or working radii exceed those as specified in the load chart.
3. if the suspended load begins to swing due to incorrect crane control.
4. if the load is pulled at an angle. Especially dangerous is pulling the load diagonally to the direction of the boom.
5. if sufficient and safe distance is not kept from trenches and inclinations.
6. if, in the operatiang mode "Crane supported",
   a) the crane is not properly supported on all 4 supports and secured,
   b) the sliding arms are not extended to the point specified in the load capacity table,
   c) the sliding arms are not secured with pins,
   d) all 4 hydraulic supports are not resting on a sufficiently large and stable foundation corresponding the operating site ground conditions,
7. if, in the operating mode "Crane free standing on tires",
   a) the boom is extended in excess of 19,2 m,
   b) the crane superstructure is not in the vehicle's horizontal axis to the rear,
   c) the axle suspension is not locked,
   d) the foundation is not capable of safely supporting the maximum operating weight of the crane plus the weight of the load,.
   e) the foundation is not even and not without inclinations,
   f) the crane is driven too fast with the load suspended, and braking or other movements are sudden.

F) Telescopic boom

1. The boom, hydraulically extendable with 3 telescopic sections, has a limited load capacity. The loads specified in the load chart must never be exceeded.
2. The specifications on the extending conditions of the individual telescopic sections required for reaching a certain boom length must always be maintained and strictly adhered to.
3. Normally, the telescopic boom should be extended to the desired length without a load and only then, after reaching the desired length, should it be loaded.
   however, it is possible to extend the boom under partial load. This partial load is dependent on the lubrication of the bearing pads as well as on the boom's available useable length.

G) Rope winches (hoisting gear)

The rope winches (hoisting gears) are designed for a maximum rope tension of 59 kN.
This rope tension must never be exceeded.
The required hoisting rope reeving is carried out accordingly.

H) Hoisting rope reeving

The hoisting rope must be reeved between the boom head and the hook block, depending on the maximum rope tension of the rope winch and the weight of the load to be hoisted.

Hoisting rope reeving (rope strands)	max. lifting capacity [t]
1	5.97
2	11.85
3	17.65
4	23.34
5	28.96
6	34.50
7	39.95
8	45.32
9	50.61
10	55.81
11	60.00

The Safe Load Indicator must be set to the current number of reevings of the hoisting rope.
Attention:
The hoisting rope reeving as specified in the load chart must always be adhered to.

Overload Safety Device and Limit Switches

The electronic overload safety device stops all hoisting, boom luffing and boom extension movements which exceed the permissible torque. It is possible to rectify this condition by carrying out movements in the opposite direction. The overload safety device must always be checked to make sure it functions properly before beginning any operations.

1. The overload safety device must always be set to the current equipment mode of the crane via the corresponding 2-digit SLI CODE- number.
2. The overload safety device is an important and integral safety device and must never be used to shut off or disengage operational functions. The crane operator must always ascertain the weight of the load he will work with. The presence of the overload safety device in no way releases the crane operator of his responsibility to always ensure safe operations.
3. The equipment mode, load chart, working radius, boom length, boom pulley height, and the load and degree of crane loading are displayed on the operating and display element of the overload safety device. This makes it possible to have a constant overview of the current operating conditions.
4. The hoisting limit switch on the head of the telescopic boom and folding fly jib prevent the hook block from running up and striking the boom head. The hoisting limit switches must be checked to make sure they are operational before beginning any operations.
5. Gear cam limit switches monitor the fixed placement of 3 safety coils on the cable drum. When the last coil layer is reached, a visual inspection must be carried out to make sure that the 3 remaining coils remain stationary in their fixed positions. If the hoisting gear has been overrotated in the direction of hoist, as well as after the changing of the hoisting rope the corresponding limit switch must be set again before beginning any operations.
6. The crane operator must make sure that the overload safety device is fully functional before beginning any operations. The crane manufacturer is not responsible for any damages to the crane or any other damages resulting from a nonfunctioning overload safety device, or any damages which result from the overload safety device being switched off or disengaged.

Maximum permissible wind speed

Boom Length	Max. permissible wind speed [m/s]
11.3 m	14.3
19.2 m	14.3
27.1 m	12.8
32.0 m	12.8
35.0 m	11.1
with folding fly jib	11.1

Reducing load capacity on the boom with folding fly jib attached

The lifting capacities specified in the load chart for crane operations with the telescopic boom are understood as those without the folding fly jib attached, either in its transport position or operational position. If the folding fly jib remains attached during operations, the possible lifting capacities are reduced by the values listed in the table below.

Load reducing at the telescopic boom with the folding jib attached and the hook block which belongs to

position of the folding jib	Teleskopic boom length in metres				
	T-11.3	T-19.2	T-27.1	T-32.0	T-35.0
In transport position at the side of boom pivot section	0.40 t	0.23 t	0.17 t	0.14 t	0.13 t
11 m jib inworking position at the boom head section	1.40 t	1.15 t	1.05 t	1.01 t	1.00 t
18 m jib inworking position at the boom head section	2.13 t	1.71 t	1.54 t	1.45 t	1.44 t

Considering the influence of wind

Crane operations are only permissible up to the wind speed specified in the load capacity table to be used for the working boom length.
The wind area A_W of the load must not exceed certain values. These values can be taken from diagram 1 in the following.

If the wind area of the load is larger, crane operations are only permissible up to a correspondingly lower wind speed (note following example).

Example:

-Weight of load to be lifted:	50 t
-Permissible wind speed from load capacity table:	9 m/s
-Actual wind area of the load A_{Wr}:	100 m²
Permissible wind area of the load A_{Wz}, diagram 1:	55 m²

For a wind speed of 9 m/s, diagram 2 yields a dynamic pressure of 50 N/m².
Thus, a force F is exerted on a load with the permissible wind area A_{Wz} of 55 m², F being:

F = dynamic pressure p X wind area A_{Wz} = 50 N/m² X 55m² = 2750N

For the actual wind area A_{Wr} of 100 m², the following permissible dynamic pressure is yielded for the same force F:

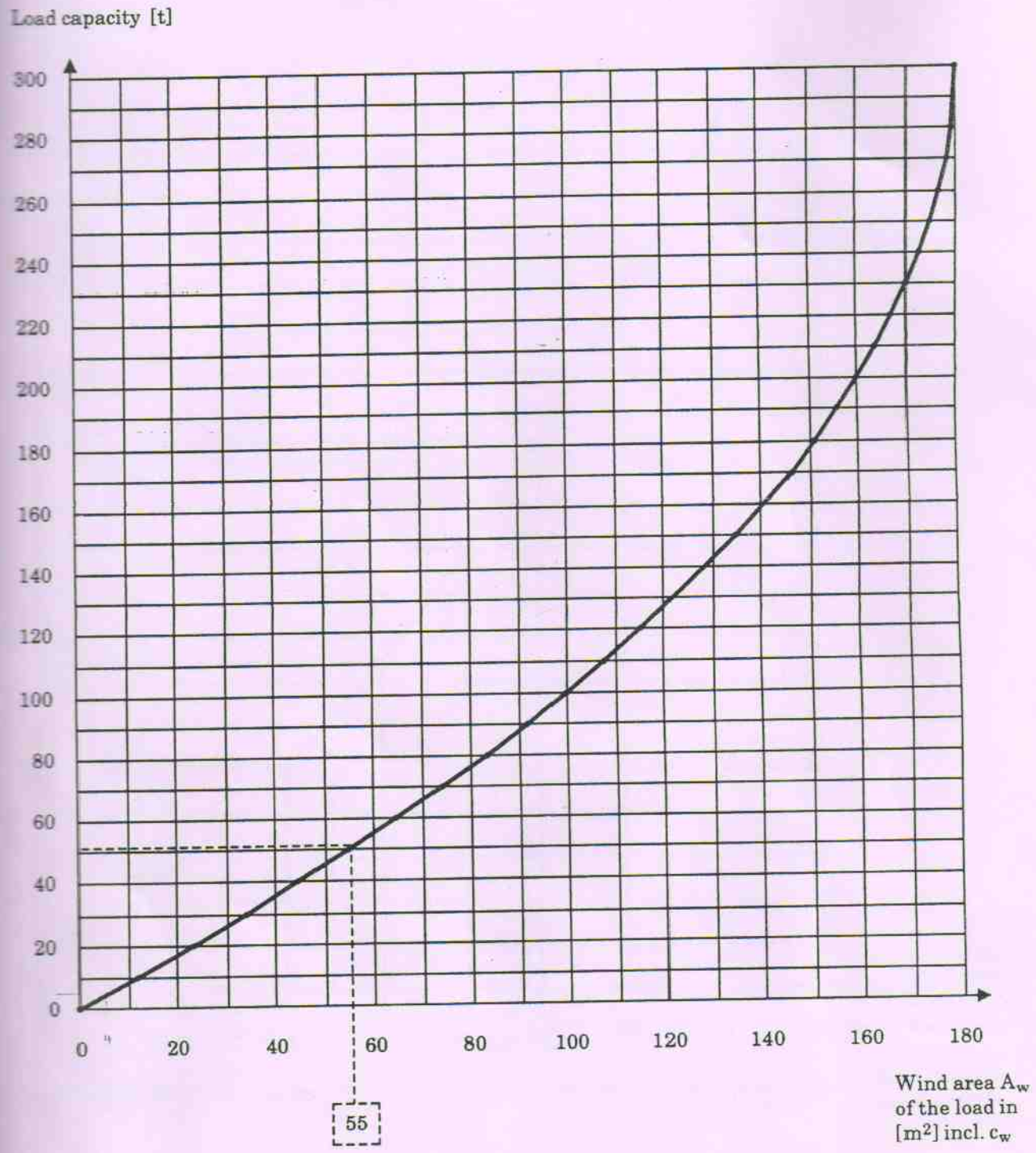
$$p = \frac{F}{A_{Wr}} = \frac{2750\ N}{100\ m^2} = 27{,}5\ N/m^2$$

Thus, a maximum permissible wind speed of 6,7 m/s is taken from diagram 2.

DANGER: **Before beginning crane operations, the crane operator must consult with the local meteorological authorities for information on the anticipated wind speeds. If impermissible wind speeds are expected, hoisting loads is prohibited!**

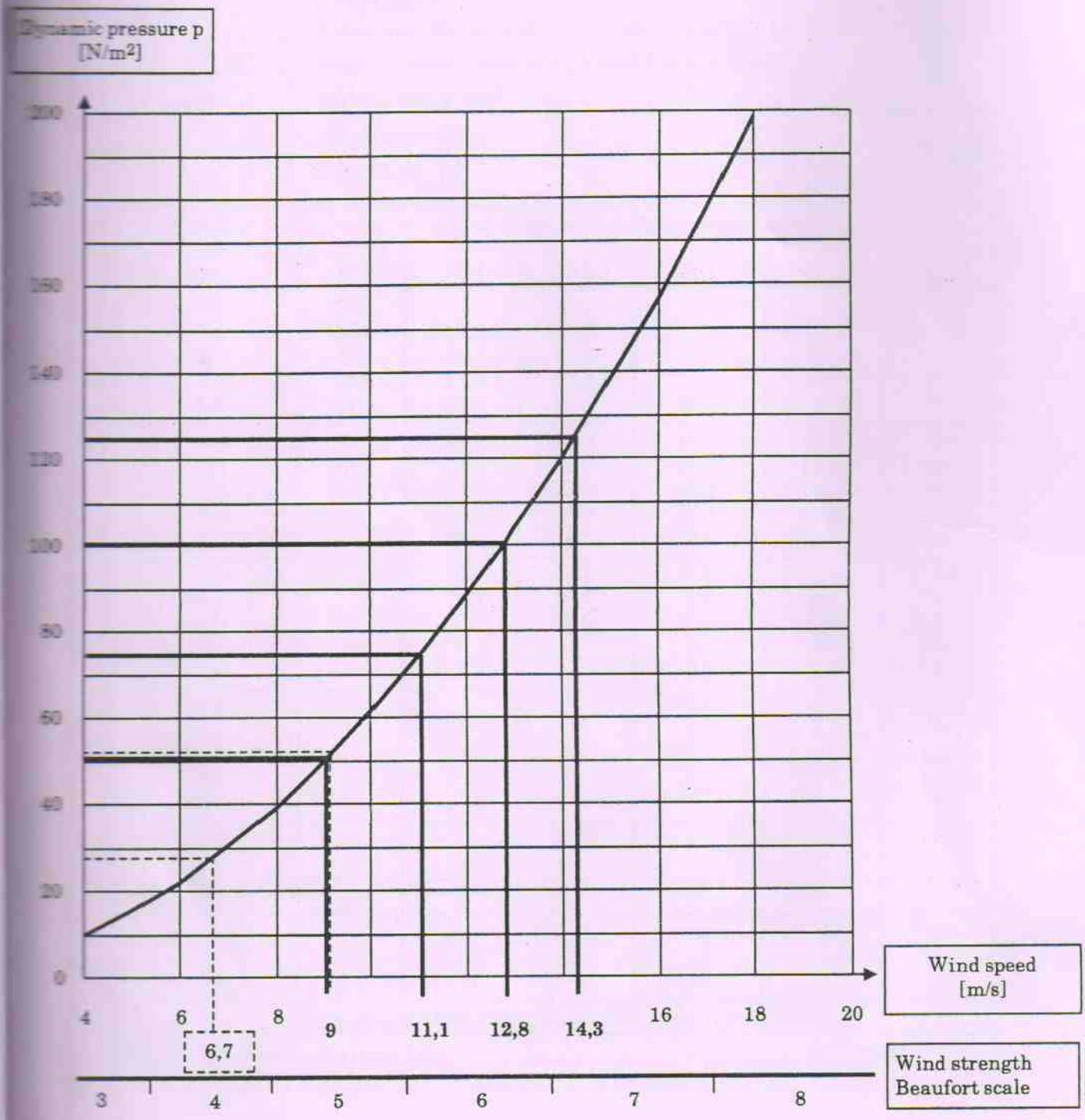
DANGER: **Exceeding the maximum permissible wind speeds as specified in the load capacity table is prohibited, even if the wind area of the load is less than what the calculation yields.**

Diagram 1
Wind area of the load



------- see example

Diagram 2
Wind speed, wind strength, dynamic pressure



------- see example

LTM 1060
Telescopic boom, wide supporting base

75%
DIN
BS

crane supported, supporting base 6.5 m × 8.3 m

working range: 360°

10 t counterweight

SLI CODE 01

SKA 16 814
b
360°
10 t

working radius [m]	telescopic boom lengths in meters [m]					
	11.3	19.2	19.2	27.1	32	35
3.0	60.0					
3.5	54.0	36.0	21.0			
4.0	49.0	34.2	21.0			
4.5	45.0	32.2	21.0			
5.0	41.0	30.2	21.0	20.0		
6.0	36.0	26.8	21.0	19.3	15.0	13.0
7.0	32.0	23.6	21.0	18.3	14.6	12.5
8.0	27.2	21.1	21.0	17.0	14	11.9
9.0		18.6	19.9	15.8	13.1	11.4
10.0		16.3	18.1	14.4	12.0	10.8
12.0		12.3	13.7	12.0	10.2	9.8
14.0		9.2	10.5	9.8	8.9	8.7
16.0		7.0	8.3	7.9	7.8	7.6
18.0				6.4	6.6	6.6
20.0				5.1	5.5	5.5
22.0				4.1	4.5	4.5
24.0				3.3	3.7	3.7
26.0					3.0	3.1
28.0					2.4	2.5
30.0						2.0
32.0						1.6
hoisting rope runs	11	6	4	4	3	3
Tele I	0	100	33	100	100	100
Tele II	0	0	33	50	80	100
Tele III	0	0	33	50	80	100
extension condition of telescopic sections in percent (%)						

lifting capacities in metric tons [t] 27.06.1983

LTM 1060
Telescopic boom, wide supporting base

75%
DIN
BS

crane supported, supporting base 6.5 m × 8.3 m

working range: over rear

10 t counterweight

SLI CODE 03

SKA 16 818
b
over rear
10 t

working radius [m]	telescopic boom lengths in meters [m]					
	11.3	19.2	19.2	27.1	32	35
3.0	60.0					
3.5	54.0	36.0	21.0			
4.0	49.0	34.2	21.0			
4.5	45.0	32.2	21.0			
5.0	41.0	30.2	21.0	20.0		
6.0	36.0	26.8	21.0	19.3	15.0	13.0
7.0	32.0	23.6	21.0	18.3	14.6	12.5
8.0	27.2	21.1	21.0	17.0	14.0	11.9
9.0		19.0	19.9	15.8	13.1	11.4
10.0		16.9	18.1	14.4	12.0	10.8
12.0		13.1	14.3	12.1	10.2	9.8
14.0		10.1	11.1	10.3	8.9	8.7
16.0		7.9	9.0	8.7	7.9	7.8
18.0				7.2	7.0	6.8
20.0				5.9	6.1	5.8
22.0				4.8	5.2	5.0
24.0				4.0	4.3	4.4
26.0					3.6	3.8
28.0					3.0	3.1
30.0						2.6
32.0						2.1
hoisting rope runs	11	6	4	4	3	3
Tele I	0	100	33	100	100	100
Tele II	0	0	33	50	80	100
Tele III	0	0	33	50	80	100
extension condition of telescopic sections in percent (%)						
lifting capacities in metric tons [t]					27.06.1983	

LTM 1060
Telescopic boom, wide supporting base

75%
DIN
BS

crane supported, supporting base 8,3 m × 6,5 m

working range: 360°

4,6 t counterweight

SLI CODE 11

TAB 16 205
b
360°
4,6 t

working radius [m]	telescopic boom lengths in meters [m]					
	11.3	19.2	19.2	27.1	32	35
3	60					
3.5	54	36	21.0			
4	49	34.2	21.0			
4.5	45	32.2	21.0			
5	41	30.2	21.0	20.0		
6	35.9	26.8	21.0	19.3	15.0	13.0
7	27.9	23.6	21.0	18.3	14.6	12.5
8	22.2	19.9	21.0	17.0	14.0	11.9
9		16.3	18.3	15.8	13.1	11.4
10		13.5	15.2	13.7	12.0	10.8
12		9.5	10.9	10.2	10.2	9.8
14		6.9	8.2	7.9	8.0	7.9
16		4.9	6.3	6.1	6.3	6.3
18				4.6	5.0	5.1
20				3.5	3.9	4.1
22				2.7	3.1	3.2
24				2.0	2.4	2.5
26					1.8	2.0
28					1.3	1.5
30						1.1
hoisting rope runs	11	6	4	4	3	3
Tele I	0	100	33	100	100	100
Tele II	0	0	33	50	80	100
Tele III	0	0	33	50	80	100
extension condition of telescopic sections in percent (%)						
lifting capacities in metric tons [t]					27.09.1985	

85%

LTM 1060
Telescopic boom, wide supporting base

crane supported, supporting base 8,3 m × 6,5 m

working range: over rear

4,6 t counterweight

SLI CODE 13

TAB 16 242
b
over rear
4,6 t

working radius [m]	telescopic boom lengths in meters [m]					
	11.3	19.2	19.2	27.1	32	35
3	60					
3.5	54	36	21.0			
4	49	34	21.0			
4.5	45	32	21.0			
5	41	30	21.0	20.0		
6.0	36	26.8	21.0	19.3	15.0	13.0
7	30.5	23.6	21.0	18.3	14.6	12.5
8	23.8	21.1	21.0	17.0	14.0	11.9
9		18.4	19.9	15.8	13.1	11.4
10		15.2	16.7	14.4	12.0	10.8
12		10.9	12.2	11.9	10.2	9.8
14		8.1	9.4	9.1	8.9	8.7
16		6.1	7.4	7.1	7.5	7.6
18				5.7	6.0	6.2
20				4.5	4.9	5.0
22				3.6	3.9	4.1
24				2.8	3.2	3.3
26					2.5	2.7
28					2.0	2.1
30						1.7
32						1.3
hoisting rope runs	11	6	4	4	3	3
Tele I	0	100	33	100	100	100
Tele II	0	0	33	50	80	100
Tele III	0	0	33	50	80	100
extension condition of telescopic sections in percent (%)						
lifting capacities in metric tons [t]					06.11.1985	

LTM 1060
Folding fly jib 2.5°

75%
DIN
BS

crane supported, supporting base 8.3 m × 6.5 m
working range: 360°
10 t counterweight
telescopic boom length 35 m

TK 2.5°

SKA 16 811
b
360°
10 t

SLI CODE	34	35	36
working radius [m]	length of folding fly jib 11m		18 m
7	7.50	6.00	
8	7.50	6.00	3.70
9	7.50	5.95	3.65
10	7.50	5.90	3.60
12	6.30	5.70	3.55
14	5.45	5.35	3.45
16	4.80		3.35
18	4.30		3.20
20	3.80		3.00
22	3.45		2.85
24	3.15		2.65
26	2.85		2.40
28	2.60		2.20
30	2.40		2.00
32	2.10		1.80
34	1.80		1.60
36	1.55		1.45
38	1.25		1.30
40	1.00		1.15
42	0.80		1.00
44			0.80
hoisting rope runs	2	1	1

lifting capacities in metric tons [m]

26.05.1983

LTM 1060
Folding fly jib 2.5°

75%
DIN
BS

crane supported, supporting base 8.3 m × 6.5 m
working range: 360°
4,6 t counterweight
telescopic boom length 35 m

TK 2.5°

SKA 16 225
b
360°
4,6 t

SLI CODE	64	65	66
working radius [m]	length of folding fly jib 11m		18 m
7	7.50	6.00	
8	7.50	6.00	3.70
9	7.50	5.90	3.60
10	7.50	5.90	3.60
12	6.30	5.70	3.50
14	5.40	5.30	3.40
16	4.80		3.30
18	4.30		3.20
20	3.80		3.00
22	3.40		2.80
24	2.90		2.60
26	2.40		2.40
28	2.00		2.20
30	1.60		1.80
32	1.30		1.50
34	1.00		1.20
36			0.9
hoisting rope runs	2	1	1

lifting capacities in metric tons [m] 26.05.1983

LTM 1060
Folding fly jib 12.5°

TK 12.5°

75%
DIN
BS

crane supported. supporting base 8.3 m × 6.5 m
working range: 360°
10 t counterweight
telescopic boom length 35 m

SKA 16 812
b
360°
10 t

SLI CODE	15	16
working radius [m]	length of folding fly jib 11m	18 m
8	6.0	
9	5.75	
10	5.55	3.0
12	5.1	2.9
14	4.7	2.85
16	4.35	2.75
18	4.0	2.7
20	3.7	2.6
22	3.4	2.5
24	3.1	2.4
26	2.8	2.3
28	2.55	2.15
30	2.25	2.05
32	2.0	1.95
34	1.7	1.8
36	1.5	1.65
38	1.25	1.5
40	1.05	1.35
42	0.8	1.15
44		0.95
46		0.75
hoisting rope runs	1	1

lifting capacities in metric tons [m] 26.05.1983

LTM 1060
Folding fly jib 12.5°

75%
DIN
BS

crane supported. supporting base 8.3 m × 6.5 m
working range: 360°
4,6 t counterweight
telescopic boom length 35 m

TK 12.5°

SKA 16 228
b
360°
4,6 t

SLI CODE	45	46
working radius [m]	length of folding fly jib 11m	18 m
8	6.0	
9	5.7	
10	5.5	3.0
12	5.1	2.9
14	4.7	2.8
16	4.3	2.7
18	4.0	2.7
20	3.7	2.6
22	3.4	2.5
24	3.1	2.4
26	2.6	2.3
28	2.2	2.1
30	1.8	2.0
32	1.4	1.7
34	1.1	1.4
36	0.8	1.1
38		0.9
hoisting rope runs	1	1

lifting capacities in metric tons [m] 26.05.1983

LTM 1060
Folding fly jib 22.5°

75%
DIN
BS

crane supported, supporting base 8.3 m × 6.5 m
working range: 360°
10 t counterweight
telescopic boom length 35 m

TK 22.5°

SKA 16 813
b
360°
10 t

SLI CODE	25	26
working radius [m]	length of folding fly jib 11m	18 m
10	5.5	
12	5.05	
14	4.65	3.0
16	4.3	2.85
18	3.95	2.7
20	3.65	2.6
22	3.4	2.5
24	3.1	2.4
26	2.8	2.3
28	2.55	2.2
30	2.25	2.05
32	2.0	1.95
34	1.75	1.8
36	1.5	1.65
38	1.25	1.5
40	1.05	1.35
42	0.8	1.2
44		1.0
46		0.8
hoisting rope runs	1	1

lifting capacities in metric tons [m]

26.05.1983

LTM 1060
Folding fly jib 22.5°

75%
DIN
BS

crane supported, supporting base 8.3 m × 6.5 m
working range: 360°
4,6 t counterweight
telescopic boom length 35 m

TK 22.5°

SKA 16 231
b
360°
4,6 t

SLI CODE	55	66
working radius [m]	length of folding fly jib 11m	18 m
10	5.5	
12	5.0	
14	4.6	3.0
16	4.3	2.8
18	3.9	2.7
20	3.6	2.6
22	3.4	2.5
24	3.1	2.4
26	2.8	2.3
28	2.3	2.2
30	1.9	2.0
32	1.5	1.9
34	1.2	1.6
36	0.9	1.3
38		1.0
40		0.8
hoisting rope runs	1	1

lifting capacities in metric tons [m]

26.05.1983

LTM 1060
Telescopic boom. crane freestanding on tires

75%
DIN
BS

working range: over rear
10 t counterweight
tires 16.00 - 25 . pressure 10 bar
SLI CODE 02

SKA 16 824
R
over rear
10 t

working radius [m]	telescopic boom lengths in meters [m]	
	11.3	19.2
4.0	20.0	15.0
4.5	17.2	14.4
5.0	14.9	13.5
6.0	11.5	10.7
7.0	9.1	8.4
8.0	7.4	6.7
9.0		5.4
10.0		4.4
12.0		2.9
14.0		1.8
16.0		0.9
Tele I	0	100
Tele II	0	0
Tele III	0	0
extension condition of telescopic sections in percent %		
lifting capacities in metric tons [t]		27.06.1983

LTM 1060
Telescopic boom. crane freestanding on tires

75%
DIN
BS

working range: over rear
4,6 t counterweight
tires 16.00 - 25XR . pressure 10 bar
tires 14.00 R-24. Reifendruck 10 bar
tires 17.5 R - 25X. Reifendruck 8 bar
SLI CODE 12

TAB 16 235
R
over rear
4.6 t

working radius [m]	telescopic boom lengths in meters [m]	
	11.3	19.2
4	15.5	13.4
4.5	14.1	11.7
5	12.0	10.2
6	9.1	7.9
7	7.1	6.1
8	5.7	4.8
9		3.7
10		2.9
12		1.5
Tele I	0	100
Tele II	0	0
Tele III	0	0
extension condition of telescopic sections in percent %		

lifting capacities in metric tons [t] 6.11.1985