LIEBHERR

LRT 1100-2.1

0042614

Load chart manual

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Preface

Manufacturer

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California Proposition 65

Proposition 65 of the US State of California warns against chemicals that are known to cause cancer and birth defects or other reproductive harm.

For additional information, see the website: **www.P65Warnings.ca.gov**.

Proposition 65

WARNING: This product can expose you to chemicals, which are known to the State of California to cause cancer and birth defects or other reproductive harm.

- Avoid direct contact with chemicals.
- Use personal protective equipment: Always wear protective gloves.
- After handling: Wash hands thoroughly.
- Dispose of chemicals in an environmentally acceptable manner according to local regulations.

For more information see: www.P65Warnings.ca.gov.

Fig.154660: Example of a Proposition 65 sign for USA: Chemicals

Proposition 65

WARNING: Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information see: www.P65Warnings.ca.gov/diesel.

Fig.154661: Example of a Proposition 65 sign for USA: Diesel engine exhaust

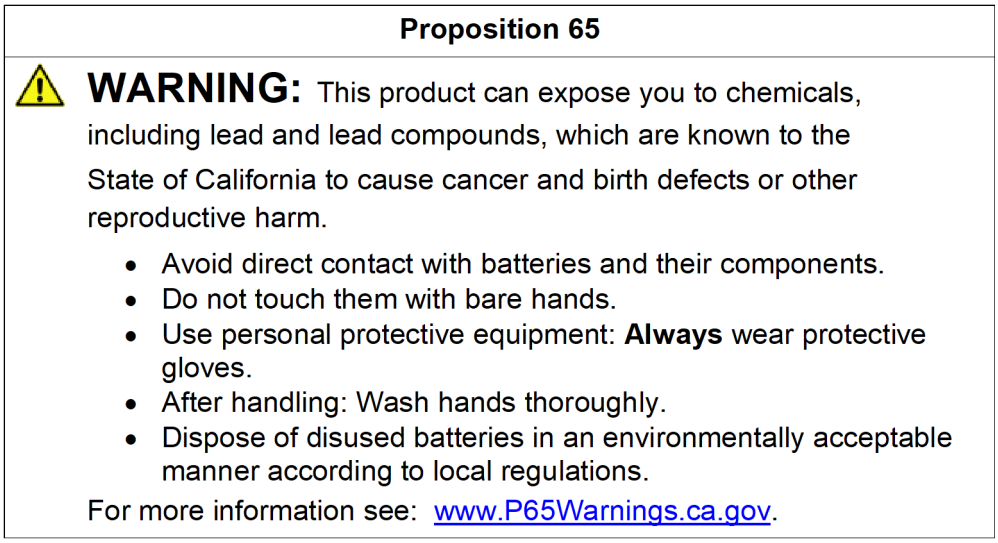

Fig.154662: Example of a Proposition 65 sign for USA: Lead and lead compounts

General

This crane was built according to the currently known state of the art technology and recognized safety technical regulations. Despite that, danger to body and life for the user and / or third persons or damage to the crane and / or other material assets is still possible.

This crane may only be used:
- when in a perfect technical condition.
- for intended use.
- by trained personnel, which acts in a safety and danger conscious way.
- when no safety relevant problems are present.
- when no modifications were made on the crane.

Any problems, which could affect safety must be fixed immediately.

Modifications on the crane may only be made with written approval by Liebherr-Werk Ehingen GmbH.

Data logger

This crane is equipped with a data recording device. Among others, the following data is recorded:
- Date and time of day
- Entered set up configuration of the crane
- Actual load
- Percentage of crane utilization
- Boom radius (working radius)
- Main boom angle, luffing jib angle
- Total telescopic boom length, length of each telescopic section
- Every actuation of bypass devices

The recorded data can be read with an appropriate software.

Safety and warning display

The safety and warning display is directed to all persons who work with the crane or are located nearby.

The terms **DANGER**, **WARNING**, **CAUTION** and **NOTICE** used in the crane documentation are intended to point out certain rules of conduct to all persons working with the crane or are located nearby.

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Warning signs	Signal word	Explanation
	**DANGER**	Designates a dangerous situation which will lead to death or serious injury if it is not prevented.[1)]
	**WARNING**	Designates a dangerous situation, which can lead to death or serious injury if it is not prevented. [1)]
	**CAUTION**	Designates a dangerous situation, which can lead to slight or medium-grade injuries if it is not prevented. [1)]
	NOTICE	Designates a dangerous situation, which can lead to property damage if it is not prevented.

[1)] This could also result in property damage.

Additional notes

The term **Note** is used in the crane documentation to make all persons working with the crane or who are located nearby aware of useful information and tips.

Sign	Signal word	Explanation
	**Note**	Designates useful information and tips.

Crane documentation

The crane documentation is comprised of:
- all supplied documents on paper and in digital form.
- all supplied programs and applications.
- all subsequently supplied information, updates and addenda for the crane documentation.

The crane documentation:
- indicates how to use the crane safely
- supports the operators in using the permissible application possibilities of the crane
- provides information about the functionality of important components and systems

Note
Terminology in the crane documentation
Certain expressions are used in the crane documentation.
► In order to avoid misunderstandings, the same expressions should always be used.

If you find any errors or if any misunderstandings arise when reading the crane documentation, please contact Liebherr-Werk Ehingen GmbH immediately.

WARNING
Danger of accident due to incorrect operation of the crane!
Incorrect operation of the crane can lead to accidents.
Death, severe bodily injuries, property damage.
► Only authorized and trained expert personnel are permitted to work on the crane or have access to it.
► The crane documentation is part of the crane and must be accessible on the crane.
► The crane documentation and on-site regulations and specifications (such as accident prevention regulations) must be observed.

Using the crane documentation:
- **makes it easier** to become familiar with the crane.
- **avoids** problems due to improper operation.

Observing the crane documentation:
- **increases** reliability in use.
- **extends** the service life of the crane.
- **minimizes** repair costs and downtime.

The crane documentation must be accessible in the driver's cab or in the crane cab.

WARNING
Outdated version of crane documentation!
If subsequently supplied information, updates and addenda to the crane documentation are not observed and added, there is a danger of accident.
Death, severe bodily injuries, property damage.
- ► Add and observe all subsequently supplied information, updates and supplements for the crane documentation.
- ► Make sure that all involved persons always know of and understand the latest version of the crane documentation.

If there is any doubt regarding if the crane documentation is **not** up to date:
- ► Do **not** operate the crane. Contact Liebherr-Werk Ehingen GmbH.

WARNING
Crane documentation is not understood!
If parts of the crane documentation are not understood and the tasks are carried out on or with the crane, then there is a danger of accident.
Death, severe bodily injuries, property damage.
- ► Clarify any open questions with Customer Service at Liebherr-Werk Ehingen GmbH before carrying out the respective task.

All accident prevention regulations, operating instructions, load charts etc. are based on the intended use of the crane.

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Data tag

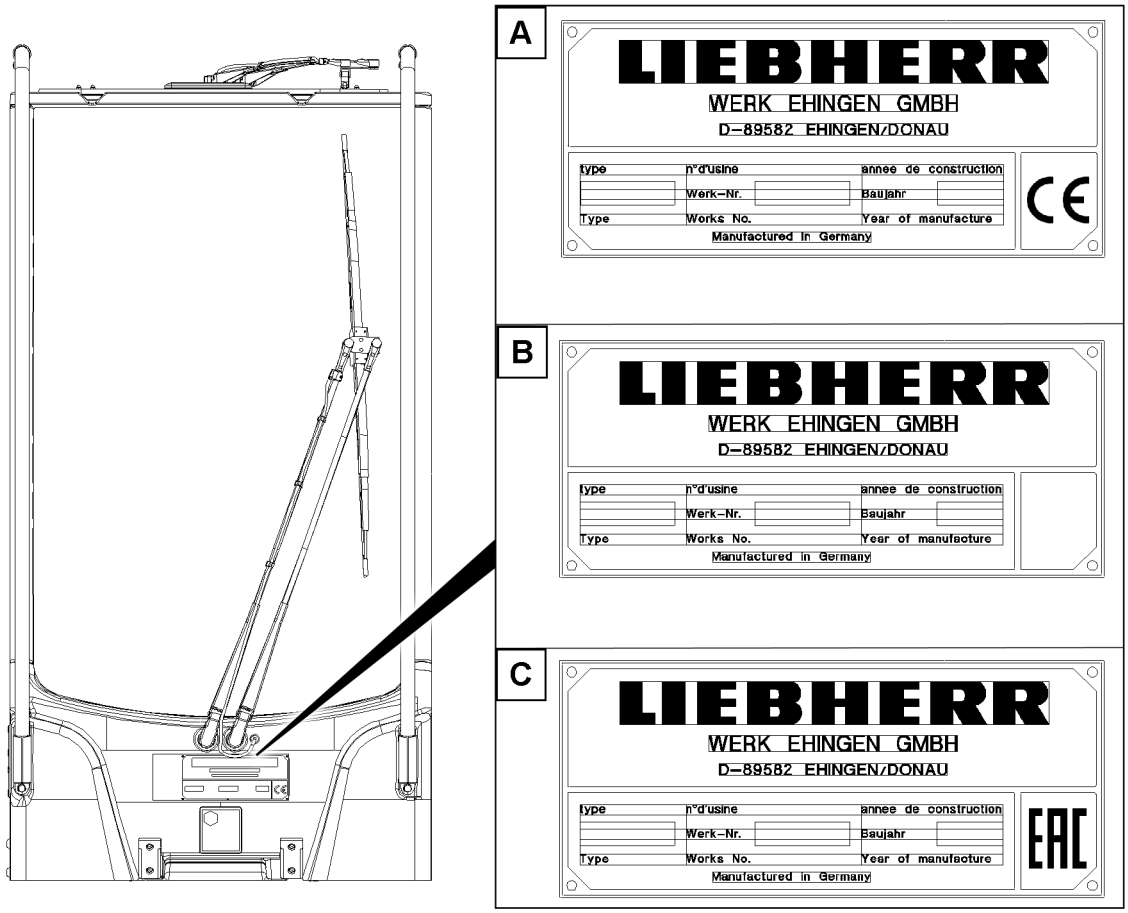

Fig.154689: Data tag shown as an example

A Data tag with CE mark
B Data tag without CE mark
C Data tag with EAC mark

CE marking

The CE marking is a mark according to EU laws:

- Cranes with CE-marking are compliant with the European Directives applicable at the time of placing the cranes on the market, and in particular the European machinery directive 2006/42/EC and product standard EN 13000! Data tag Crane with CE-marking, see illustration **A**.
- Cranes that are operated outside the respective area of application of the European machinery directive do not require a CE marking. Crane data tag without CE marking, see illustration **B** and illustration **C**.
- It is prohibited to market and operate cranes without a CE marking, which do not meet the product-specific regulations valid in Europe, when a CE marking is specified for the country, especially in the single European market.
- European Union Directives prohibit operating cranes with a tipping load utilization of 85 % or a bypass device that does not comply with EN 13000 within the European Union or in countries that only permit a lower tipping load utilization! The local regulations apply. Cranes that do not comply with EN 13000 may not have the CE marking and therefore may not be operated in the European Union.

EU Declaration of Conformity

Upon delivery of the equipment with a CE marking, the EU Declaration of Conformity according to Directive 2006/42/EC is provided directly after the cover sheet. The EU Declaration of Conformity is valid

in the following form and language in all countries of the European Union, as well as in countries that recognise the Directives of the European Union. Keep the EU Declaration of Conformity in a safe place.

Note

- ► This declaration of conformity is only valid when this mobile crane meets the directives and standards stated in this EU Declaration of Conformity. This applies especially for the programming and function of the safety-relevant overload protection. The CE sign must be removed if changes were made on the crane, which do not conform to the stated directives and standards. These include in particular a tipping load utilization (85 % load charts) that are not permissible in Europe and a changed version of the bypass device for the overload protection.
- ► If this modified mobile crane is re-imported later into a country which is within the validity range of the EC machine directive, then the importer is responsible for the verification and the written confirmation, that the condition of the mobile crane at importation into the EC meets the directives and standards, which are stated in this declaration of conformity.
- ► The complete crane documentation must be complete and present in the official language of the community of the member state, in which the machine is placed into service and / or where it is operated.
- ► For the verification and confirmation we recommend that the importer contacts the crane manufacturer or a person authorized by him.
- ► After written confirmation of the importer and the mobile crane manufacturer, the mobile crane may be labelled again with a CE marking and the EU Declaration of Conformity becomes valid again. Therefore for this crane, the directives and standards valid at initial delivery continue to apply.

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EU Declaration of conformity

If changes are made to the equipment that were not approved in writing by Liebherr-Werk Ehingen GmbH, then this EU declaration of conformity becomes invalid.

Type of machine:	**Mobile crane**
Type:	**XXX**
Serial No.:	**XXX**
Year of construction:	**XXX**
Power output of the diesel engine:	**XXX kW / XXX rpm**
L_{WA} measured[1)]:	**XXX dB**
L_{WA} guaranteed[1)]:	**XXX dB**

We herewith declare that the above declared machine in its delivery condition complies with all relevant provisions of the following EU Directives:

- **Directive 2006/42/EC of the European Parliament on machinery**
- **Directive 2005/88/EC of the European Parliament amending the Directive 2000/14/EC relating to noise emission[1)]**
- **Directive 2014/53/EU of the European Parliament relating to the making available on the market of radio equipment**

Applied harmonized standards:

EN 13000:2010 + A1:2014 Cranes – Mobile cranes

Applied evaluation procedure according to Annex VIII of Directive 2000/14/EC
Name of the notified body:

TÜV Rheinland LGA Products GmbH, D-90014 Nürnberg, Identification No.: 0197

Authorized agent for the compilation of the technical documentation:

Head of Design Department
Dr.-Hans-Liebherr-Straße 1
89584 Ehingen/Donau

[1)] during crane operation

Ehingen

_____
(Head of Design Department)

Liebherr-Werk Ehingen GmbH
Dr.-Hans-Liebherr-Straße 1
89584 Ehingen
Germany
15.10.2020_en

Fig.159807-en: Reprint of the crane's EU Declaration of Conformity

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Intended use

The crane is designed and intended for assembly operation.

The intended use of the crane consists solely in the vertical lifting and lowering of free and unfixed loads, whose weight and center of gravity are known as well as the moving of these loads, using sle-

wing gear, luffing gear, telescoping gear as well as travel gear within the permissible moving speeds and deceleration speeds.

To do so, a load hook or hook block approved by Liebherr must be reeved on the hoist rope and it may only be operated within the set up configurations according to the operating instructions or the set up conditions that can be selected in the crane control.

The crane may only be used in a flawless technical condition and according to its mission as well as with constant awareness of safety and dangers. Any problems that could affect safety must be fixed immediately.

Driving with the crane, with or without an attached load is only permissible if corresponding driving charts or load charts are available. The set up configurations intended for it and the safety conditions must be observed according to the corresponding crane documentation.

For cranes approved for on-road driving: Intended use also includes on-road driving in a permissible travel condition according to the national regulations applicable in the respective country.

Part of destined use is also the observance of the crane documentation as well as the safety regulations, conditions, prerequisites, set up configurations and working steps required in the crane documentation (for example: operating instructions, load chart, erection and take-down charts, job planner).

Any other use or any use that exceeds what is indicated is not destined use.

Non-intended use

The manufacturer is **not** liable for damage caused by non-destined use or improper use of the crane. Any associated risk it is carried solely by the owner, the operator and the user of the crane.

Non-destined use is:

- Working outside the permissible boom radii and slewing ranges according to the load charts.
- When the set up key is activated, not operating the crane in compliance with the operating instruction
- Operating the crane outside of the limit values approved by the manufacturer, such as:
  - Ambient temperature range
  - Load chart (load / boom radius / slewing range)
  - Moving speeds
  - Deceleration speeds
  - Wind speed
- Moving the crane superstructure at a slewing speed higher than permitted in the operating instructions
- Moving the crane without taking the actual operating conditions into account
- Operating the suspended ballast or the ballast trailer at a distance greater than 250 mm from the ground
- Approaching shut-off limits at an excessive speed without prior braking in accordance with the situation (for example when turning with a load, not carrying out the turning movement or braking in a very careful manner or approaching the hoist limit switch too quickly)
- Selecting load charts that do not correspond to the actual set up configuration.
- Operating the crane when the entries and settings in the set up program do not comply with the actual crane set up configuration (for example incorrect reeving of the hoist rope, incorrect specification of the hook block, incorrect specification of the counterweight)
- Crane ballasting (counterweight, central ballast, derrick ballast and / or auxiliary ballast) is not carried out according to the load charts and / or the erection and take-down charts.
- Working with bypassed / deactivated safety equipment, for example bypassed load torque limiter or with bypassed hoist limit switch.
- Increasing the boom radius of the lifted load after a load torque limiter shut-off, for example by diagonally pulling the load.
- Using the support pressure display as information in order to utilize the crane up to the tipping limit.
- Using the crane in emergency operation without an emergency situation.
- Operating the crane in an area exposed to explosion hazards.
- Start up or attempted start up or use of the crane or crane parts or equipment that is not assembled according to the operating instructions or the corresponding rod plan.

- Installation of non-original or unapproved equipment or replacement parts.
- Operating the crane with non-original or unapproved equipment or replacement parts.
- Using counterweights that are not approved by Liebherr.
- Using external ballast that is not slip-resistant (for example, o the suspended ballast pallet)
- Using service items that are not approved in the operating instructions
- Repairs without considering the operating instructions.
- The maintenance work and repair work required in the maintenance schedule and inspection plan in the operating instructions were not carried out by authorized and trained service personnel or Liebherr service personnel.
- Changing the pressure accumulator for the W-relapse press by unauthorized service personnel
- Using the crane at sports events or recreational events, especially use for:
  - “Bungee jumps”
  - “Dinner in the sky®” or “suspended restaurants”
  - Lifting equipment on which persons are located.
  - Lifting persons for entertainment purposes.
- Driving in an impermissible travel condition.
- Driving the crane with the equipment in place with or without a load in an impermissible travel condition.
- Driving a crawler crane outside of the limit conditions specified in the operating instructions, such as, for example:
  - Ground incline.
  - Position of the superstructure and boom.
  - Travel speed too high.
- Using the crane on ground that is not suitable for the applied loads.
- Driving the crane without a suitable view or without a guide.
- Pushing, pulling or lifting loads with the level control, the sliding beams or the support cylinders.
- Pushing, pulling or lifting loads by actuating the slewing gear or the telescoping gear.
- Rubbing or pulling the load on the ground.
- Ripping stuck objects loose with the crane.
- Use of the crane for dynamic uses, for example soil compaction, demolition balls.
- Handling operation without consideration of the work cycle in the load spectrum, or without observing the information for the handling operation in the operating instructions.
- Lifting loads that are fastened to multiple cranes without observing the operating instructions.
- Releasing the crane suddenly (for example operating the grab or dumping operation).
- Utilizing the crane when the weight of the load suspended on the crane is changed, for example by filling a container suspended on the load hook, except when saving and salvaging persons and in consideration of the chapter “Lifting of personnel” in the operating instruction.
- Use, start up, assembly, operation or maintenance of the crane without consideration of the operating instructions.
- Operating the crane with incomplete or a non-current version of the operating instructions.
- Erecting and taking down the crane when the mechanical auxiliary support is required, without supporting the mechanical auxiliary support on load bearing ground.
- Closing or opening the crane boom using a method other than what is specified in the operating instructions (for example, closing it on another intermediate section, etc.).
- Substructure not in compliance with the operating instructions, for example during the assembly or disassembly of boom systems.
- Interrupting crane operation or ending crane operation without considering the operating instructions.
- Operating the crane without an emergency plan (for example how the crane is brought into a safe condition if an unforeseen event occurs).
- Operation of the crane and access to the crane by unauthorized and untrained expert personnel who do not work in a safety and danger conscious manner.
- Start up or operation of the crane without complying with the periodic inspections required by national **and** international directives and standards and as described in the operating instructions.
- Start up or operation of the crane without observing the national regulations concerning safety distances when working with the crane or the information in the operating instructions.
- Start up or operation of the crane with safety equipment not applied properly or defective.

- Working on the crane with defective protective equipment (such as defective height safety equipment).
- Using a fall arrest system (for example height safety equipment) that was not obtained from Liebherr-Werk Ehingen.

The crane may **not** be used for:
- Fastening a stuck load for which the weight and center of gravity are not known and which is released only by flame cutting, for example.
- Transporting persons outside the driver's cab during travel operation.
- Transporting persons outside the crane cab during crane operation.
- Start up or operation of the crane when there are persons in addition to the crane operator outside of the cab or on the crane, except for the procedures approved in the operating instructions.
- Transporting personnel in the crane cab.
- Transporting personnel with the carrying equipment or the load handling equipment or on the load.
- Transporting personnel with work baskets (cherry pickers), if national regulations (for example the responsible work safety organization) are not observed.
- Using cranes for protecting persons against falling without considering the operating instructions.
- Transporting loads and objects on the crane chassis except for in the specified points, storage boxes, storage compartments.
- Transporting loads and objects on the crane superstructure.
- Transporting loads and objects on the ballast trailer.
- Transporting loads and objects on the suspended ballast.
- Transporting loads and objects on the boom lattice sections and / or the crane boom.
- Two hook operation without auxiliary equipment.
- Extended material handling operation.
- Crane operation on a floating device if the conditions in chapter “Crane on a floating device” are not fulfilled and the written release by **Liebherr Werk Ehingen GmbH** is not present.

The crane documentation must be read and used by all persons who are involved in use, operation, assembly and maintenance of the crane.

Ambient temperature

The crane is designed for an ambient temperature of -20 °C to +50 °C.

If the ambient temperature is lower than -20 °C the crane must be modified with “auxiliary equipment for working at low temperatures”.

WARNING
Working at low temperatures without the corresponding auxiliary equipment!
The crane components can be damaged and fail. The load can rip off.
Death, severe bodily injuries, property damage.

If the crane is operated at an ambient temperature lower than -20 °C:
- ► Make sure that the crane is equipped with the corresponding “auxiliary equipment for working at low temperatures”. Observe and comply with chapter 2.08.
- ► Use the operating fluids for the corresponding ambient temperature in time. Observe and comply with chapter 7.07.

Safety equipment

Special attention must be paid to the safety equipment built into the crane. The safety equipment must constantly be checked for functionality. The crane may not be operated if the safety equipment are not working or not working correctly.

Note
Your motto must always be:
- ► **Safety first!**

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The crane has been built in accordance with the European regulations for crane operation and travel operation and has been approved by the relevant authorities.

Responsibility when using or reselling the crane

If the crane is to be operated or sold in an area where other laws or regulations apply, the operator is responsible for ensuring that the crane complies with the requirements of the laws and regulations of the operating location.

For example, this may apply to:
- Labelling
- Emission regulations
- Lighting
- Underride protection

The operator must obtain information in advance about any modification that may be required. Contact Customer Service at Liebherr-Werk Ehingen GmbH.

Equipment and spare parts

WARNING
Danger of fatal injury if original equipment parts are **not** used!
If the crane is operated with **not** original equipment parts, the crane can fail.
Death, severe bodily injuries, property damage.
- ► Operate the crane only with original equipment parts!
- ► Crane operation with equipment parts, which do **not** belong to the crane is prohibited!
- ► If there is any doubt about the origin of equipment parts, contact Customer Service at Liebherr-Werk Ehingen GmbH.

WARNING
The crane permit and the manufacturer's warranty will become void!
If any original installed parts are modified, manipulated or replaced (e.g. removal of parts, installation of non-original Liebherr parts), both the crane permit and the manufacturer's warranty will become void.
- ► Leave installed original parts unchanged.
- ► Do not remove installed original parts.
- ► Use only Original Liebherr spare parts.
- ► If there is any doubt about the origin of spare parts, contact Customer Service at Liebherr-Werk Ehingen GmbH.

For ordering equipment and spare parts, always keep the crane number handy and provide it.

Definition of directional data

The directional data is defined statically in reference to the crane chassis:

Driving forward: Driving with the headlights of the crane chassis on the front.

Driving in reverse: Driving with the reversing lights of the crane chassis on the front.

Front, **rear**, **right**, **left** in the **crane cab** refer to the crane chassis. The engine is always at the rear.

0° crane superstructure slewing angle: The boom points in the longitudinal direction to the rear over the engine.

180° crane superstructure slewing angle: The boom points in the longitudinal direction to the front.

Optional equipment and functions

The equipment marked with ***** and the functions are optionally available and are **not** part of the standard crane (optional equipment).

Conversion chart

	Initial unit	Multiplication factor	Target unit
Length	mm	0.03937	in
	in	25.4000	mm
	mm	0.00328	ft
	ft	304.8	mm
	cm	0.39370	in
	in	2.5400	cm
	cm	0.0328	ft
	ft	30.48	cm
	m	39.37	in
	in	0.0254	m
	m	**3.281**	**ft**
	ft	**0.3048**	**m**
	km	0.62137	mile
	mile	1.6093	km
Area	cm^2	0.155	in^2
	in^2	6.4516	cm^2
	m^2	**10.764**	**ft^2**
	ft^2	**0.0929**	**m^2**
Volume	cm^3	0.06102	in^3
	in^3	16.387	cm^3
	m^3	35.3147	ft^3
	ft^3	0.0283	m^3
	l	0.001	m^3
	m^3	1000	l
	l	61.024	in^3
	in^3	0.016387	l
	l	0.0353	ft^3
	ft^3	28.32	l
	l	0.264178	US. liq. gal
	US. liq. gal	3.7853265	l

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	Initial unit	Multiplication factor	Target unit
Mass (weight)	kg	2.20462	lb
	lb	0.45359	kg
	t	**2204.62**	**lb**
	lb	**0.0004536**	**t**
	t	1.1023	short ton US (tn. sh.)
	short ton US (tn. sh.)	0.90718	t
	t	**0.45359**	**kip**
	kip	**2.20462**	**t**
Mass / length	kg/m	0.055998	lb/in
	lb/in	17.857781	kg/m
	kg/m	0.67197	lb/ft
	lb/ft	1.48816	kg/m
Force	N	0.2248	lbf
	lbf	4.4483986	N
	kN	**224.809**	**lbf**
	lbf	**0.0044483986**	**kN**
Turning moment	Nm	8.85075	lbf·in
	lbf·in	0.112984	Nm
	Nm	0.73756	lbf·ft
	lbf·ft	1.3559	Nm
Performance	HP (DIN HP)	0.7355	kW
	kW	1.3596	HP (DIN HP)
Speed	m/s	39.37	in/s
	in/s	0.0254	m/s
	m/s	**3.28084**	**ft/s**
	ft/s	**0.3048**	**m/s**
	km/h	0.62137	mph (mi/h)
	mph (mi/h)	1.60935	km/h
	m/s	2.2369	mph (mi/h)
	mph (mi/h)	0.44704	m/s

	Initial unit	Multiplication factor	Target unit
Pressure	kPa (kN/m²)	0.01	bar
	bar	100	kPa (kN/m²)
	bar	14.5038	psi
	psi	0.06895	bar
	kPa (kN/m²)	**0.145038**	**psi**
	psi	**6.894759**	**kPa (kN/m²)**
	N/cm²	1.450377	psi
	psi	0.6894759	N/cm²
	N/m²	0.000145038	psi
	psi	6894.759	N/m²
	t/m²	204.81	lbs/ft²
	lbs/ft²	0.0048828	t/m²
Load-related area	m²/t	0.004882	ft²/lbs
	ft²/lb	204.81	m²/t
Temperature	**°C**	**([°C] · 1.8) + 32**	**°F**
	°F	**([°F] - 32) / 1.8**	**°C**

Conversion chart

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40.02 Basic information

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Fig.195219

1 Basic information

Note

- ► The load values in the load charts are indicated in tons (t) or pounds (lb).
- ► The boom radius is the horizontal distance of the hook block from the rotation axis of the crane superstructure, measured on the ground. The boom flexation is taken into account.
- ► In the provided loads, the weight o the hoist rope at reeving according to the load chart has been taken into account. If higher reeved, then the load is reduced by the weight of the additional strands of the hoist rope. The weights of the load lifting equipment and the fastening equipment must be deducted from the given load value.
- ► In two-hook operation, the hoist rope on the second load position has not been taken into account. The weight of all strands of the hoist rope on the second load position must be deduced from the load value.
- ► For number values, the decimal digits are separated with a period “**.**” . Decimal digits are on the right of the period “**.**”.

WARNING

Erroneous operation of crane!
Toppling crane, failure of crane structures.
Death or severe injuries, high property damage.

- ► Working outside the permissible set up configurations, boom radii and slewing ranges according to the load chart is prohibited.
- ► Move the boom system even without a load only within the permissible ranges according to the load charts or erection and take-down charts.
- ► Move the boom systems when “assembly operation” is engaged only within the permissible ranges according to the load charts or erection and take-down charts.
- ► In part, limitations and notes via a code are noted in the load charts. They must be adhered to.

Note

In operating modes with ballast trailer or suspended ballast:

- ► Determine the optimum derrick ballast weight with the LICCON job planner.

1.1 Load chart manual version

There may be two versions of the load chart manual for this crane.

Printable version

– This version contains a defined selection of the programmed load charts and is provided on paper and in digital form.

Load chart file

– This version contains the programmed load charts and is provided only in digital form.

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40.05 Crane operation

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Fig.195219

1 General

WARNING
Erroneous operation of crane!
Toppling crane, failure of crane structures.
Death or severe injuries, high property damage.
- ► Do not overload the crane.
- ► Adhere to the set up configuration according to the load chart.
- ► Adhere to the boom lengths, radii and slewing ranges in the respective load chart.
- ► Check warning and safety equipment for function.
- ► Check the weight data for the load to be lifted.
- ► Secure the load to avoid oscillation.
- ► Angular pull of the load is prohibited.
- ► Do not use the crane to rip loads free.
- ► Adhere to the distance to pits, basements and embankments, see Crane operating instructions, chapter 2.04.
- ► Make sure that the ground can take on the maximum operating weight of the crane in addition to the weight of the load.
- ► Adhere to the safety distance of live overhead electrical lines, see Crane operating instructions, chapter 2.04.

2 Crane operation “Crane supported”

WARNING
Erroneous operation of crane!
The crane can topple over.
Death or severe injuries, high property damage.
- ► Support the crane before turning the superstructure.
- ► Swing sliding beams out and / or extend them to the support base given in the respective load chart.
- ► Support the support plates extensively according to the ground conditions.
- ► Make sure that the wheels have no contact with the ground.
- ► Make sure that the crane is horizontally aligned during crane operation.

3 “Crane freestanding on tires” crane operation

WARNING
Erroneous operation of crane!
The crane can topple over.
Death or severe injuries, high property damage.
- ► Make sure that the ground is level and without a slope.
- ► Set the correct tire pressure, see the Load chart manual, Chapter 40.65.
- ► Set the set up configuration to the “Crane freestanding on tires” crane operation.
- ► Do not exceed the maximum possible length of the telescopic boom according to the load chart.
- ► Swing the sliding beams out and / or extend them to the maximum possible support base.
- ► Extend the support cylinders with support plates to approx. 50 mm (0.164 ft) above the ground.
- ► Carry the suspended load near the ground and secure it to prevent it from swinging back and forth.

Note

If possible:
- ► Always operate the crane when supported.

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4 Driving the crane with a load

See the Crane operating instructions, chapter 4.11.

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40.10 Utilization of the crane

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Fig.195219

1 Utilization of the crane (load collective)

Liebherr mobile and crawler cranes are designed for assembly operation and, according to grouping in class A1 according to ISO 4301-1, they can only take on a limited number of work cycles (N = 63000) with a collective class Q1 = light (kp = 0.125). If cranes are utilized in magnet operation, grapple operation or load handling operation (load collective = “medium” or “higher”), then various points must be observed. See Crane operating instructions, chapter 8.01 “Periodic crane inspections”.

Note

If the crane is utilized through above average high load collectives, for example working in magnet operation, grapple operation or load handling operation:

► Carry out inspection intervals in shorter intervals.

NOTICE

Premature wear and cracks in load bearing components!

If the crane is utilized in magnet operation, grapple operation or load handling operation, then premature wear in drive gear sections and / or cracks in load bearing steel structures must be expected!

► Reduce loads overall by 50 % compared to the data in the respective load chart.

NOTICE

Increased rope wear and rope damage!

To keep wear of hoist ropes in magnet operation, grapple operation or load handling operation to a minimum, the use of a special rope length is recommended!

If no special rope length is used, then the unused rope layers can loosen up. In high rope pulls, the rope in the unused rope layers can be pulled in and cause rope damage!

► In magnet operation, grapple operation or load handling operation use a special rope length so that in the lowest position of the hook block the entire rope length is spooled out to approx. 3–5 remaining coils.

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40.15 Liccon overload protection and limit switch

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Fig.195219

1 LICCON overload protection

WARNING
Improper operation and / or defective warning and safety equipment!
Toppling crane, failure of crane structures.
Death or severe injuries, high property damage.
- ► Make sure that all warning and safety equipment are functioning.
- ► Check the LICCON overload protection for function before every application.
- ► Set the LICCON overload protection to the current set up configuration before every application.
- ► Do not use the LICCON overload protection as operational shut off device.

Note
- ► The LICCON overload protection turns the hoist movement and boom luffing movement off when the permissible load torque is exceeded. Relief is possible by moving into the opposite direction.

Safety systems to be checked before every crane application:
- – The LICCON overload protection must be set to the current set up configuration.
- – The LICCON overload protection must be functioning.
- – All limit switches must have been checked for function.
- – The cam limit switch / winch speed sensor must be correctly adjusted.
- – All test devices (for example length sensor, angle sensor, pressure sensor, wind speed sensor) must have been checked for function.

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40.20 Telescopic boom

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Fig.195219

1 Telescopic boom

WARNING
Death or high property damage due to toppling crane or failure of crane structures!
Personnel can be severely injured or killed!
This could result in high property damage!
- ► Move the telescopic boom only in the defined radius range according to the load chart.
- ► Adhere to the data about the extension status of the respective telescopic sections to reach the required boom length.
- ► Do not exceed the load values in the load charts.

Telescope the telescopic boom without a load to the desired length and then load.

Telescoping under partial load is possible when:
- – The load chart provides “Telescoping under partial load”.
- – The bearing shoes are sufficiently greased.

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40.25 Rope winches

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Fig.195219

1 Rope pull

Note

► Every rope winch is designed for maximum rope pull. The maximum rope pulls are listed in the following chart. These rope pulls may not be exceeded. Select the minimum number of hoist rope strands (reeving) according to the “Chart Hoist rope reeving”, depending on the load to be lifted, see Load chart manual, chapter 40.90.

Upon assembly of auxiliary equipment:

► Monitor the rope routing on the winches to avoid slack rope formation.

Chart	Hoist rope		Use
Hoist rope reeving	Rope diameter	Maximum rope pull	
EST 1	17 mm	63.0 kN (6.3 t)	Winch 1
			Winch 2

The following applies for telescopic cranes:

– When telescoping in, the crane movement *lift hoist gear* can be used to prevent the hook blocks from touching the ground and thereby the formation of slack rope. Match the speed of the hoist rope movement to the telescoping speed.

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40.30 Hoist rope reevings

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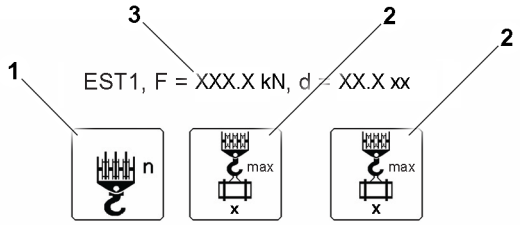

	EN 13000	ASME B30.5
1x	XXX.X	XXX.X
2x	XXX.X	XXX.X
3x	XXX.X	XXX.X
4x	XXX.X	XXX.X
5x	XXX.X	XXX.X
6x	XXX.X	XXX.X
7x	XXX.X	XXX.X
8x	XXX.X	XXX.X
9x	XXX.X	XXX.X
10x	XXX.X	XXX.X
11x	XXX.X	XXX.X
12x	XXX.X	XXX.X
13x	XXX.X	XXX.X
14x	XXX.X	XXX.X
15x	XXX.X	XXX.X
16x	XXX.X	XXX.X
17x	XXX.X	XXX.X
18x	XXX.X	XXX.X
19x	XXX.X	XXX.X
20x	XXX.X	XXX.X
21x	XXX.X	XXX.X
22x	XXX.X	XXX.X

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Fig.143205: Hoist rope reeving chart Single operation

1 Chart Hoist rope reeving (EST)

The *Hoist rope reeving chart (EST)* indicates the maximum permissible load depending on the number of hoist rope strands, see the Load chart manual, chapter 40.90.

The loads result from the maximum rope pull and is determined according to two standards:
- according to EN 13000 with 4.5-fold rope safety
- according to ASME B30.5 with 5-fold rope safety

The *Hoist rope reeving chart (EST)* lists the maximum permissible loads determined according to EN 13000 and ASME B30.5. For further information about countries in which ASME B30.5 applies, see section “5-fold rope safety according to ASME B30.5”.

The values provided in the displayed *Hoist rope reeving chart* (EST) are examples and may not match the present crane.

1 Hoist rope reeving icon

2 Single operation icon

3 Chart description, maximum rope pull and rope diameter

4 Number of hoist rope strands

5 Maximum permissible load in tons (t) or pounds (lb)
- determined according to standard EN 13000
- depending on the number of hoist rope strands

6 Maximum permissible load in tons (t) or pounds (lb)
- determined according to standard ASME B30.5
- depending on the number of hoist rope strands

7 Page specification

2 Hoist rope reeving

Observe and adhere to the following points for hoist rope reeving:
- Reeve in the hoist rope depending on the maximum rope pull and the weight of the hoist load between the boom head and the hook block.
- Before reeving in, check if a minimum hoist rope reeving and a minimum hook block weight are required, see the Load chart manual, chapter 40.40.
- For multiple reeving, the maximum possible load is reduced due to the pulley friction and the rope bend.
- Observe the national standard when selecting the maximum permissible load.
- Take the maximum permissible load depending on the number of hoist rope strands from the *Chart Hoist rope reeving* (EST), see Load chart manual, chapter 40.90.
- The LICCON overload protection must be set to the number of hoist rope strands.

Note

To increase the service life of the rope, observe the following points:
- ► Higher reeving to reduce the rope pull is recommended.
- ► For care of rope, see Crane operating instructions, chapter 8.04.

Note
- ► The number of hoist rope strands indicated in the load chart in the load column refers to their maximum load according to EN 13000.

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3 Hoist rope reeving with special equipment

If a load value in the load chart exceeds that of a load liftable with the maximum possible reeving, then special equipment is needed for lifting this load.

- Loads above 69.9 t (154200 lb) only with auxiliary block
- Loads above 80.4 t (177300 lb) only with auxiliary device

4 5-fold rope safety according to ASME B30.5

In countries where the national standard ASME B30.5 is used, a 5-fold rope safety for rotation-resistant hoist ropes is specified. The reeving required for lifting the load shall be taken in this case from the *ASME B30.5* column in the *Hoist rope reeving chart (EST)*. For example, in Canada, USA and Taiwan.

Note

- ► In EN 13000, contrary to ASME B30.5, the degree of efficiency of the rope drive is also taken into account. Therefore, in countries where the national standard ASME B30.5 is used, loads up to a certain reeving are lower than in EN 13000. From this specific reeving, the maximum loads determined according to EN 13000 apply. In reference to ASME B30.5, from this specific reeving, restrictions are no longer required.
- ► When adhering to the standard specifications in chapter 5.3.2.1.1 (e) of ASME B30.5 (2014), rope pulls according to EN 13000 can also be used.

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40.35 Hook blocks and load hooks

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Fig.195219

1 Minimum required hook block weight

WARNING
Falling components and hook block!
If the hook block weight is too low, the hoist rope can pull the hook block upward between the winch and the boom head from a certain lifting height. The boom head and hook block can be damaged. Damaged components and the hoist rope can fall down.
If slack rope forms between the winch and the boom head when spooling the winch out, then the hook block can suddenly fall down!
Personnel can be severely injured or killed!
This could result in significant property damage!
- ► Calculate the minimum required hook block weight before lifting the load.
- ► Select the weight of the hook block depending on the calculation.
- ► Slack rope formation is prohibited.

When the hook block weight is too low:
- ► Select a heavier hook block or increase the hook block weight with auxiliary weights or modification kits.

NOTICE
Rope damage due to insufficient weight of the hook block!

If minimum system-related minimum reeving of the hoist rope is not required for the operating mode:
- ► Reeve in a hook block to the minimum depending on the weight of the load to be lifted.

If loads are picked up at great heights:
- ► If possible, use a higher reeving.

If the reeving was increased:
- ► Increase the hook block weight.

When the hook block weight is too low:
- ► Select a heavier hook block or increase the hook block weight with auxiliary weights or modification kits.

Note
Observe the following notes:

For wear reduction of the hoist rope:
- ► When the available rope lengths and the maximum permissible hook block weight permit it, increase the reeving. Especially then when loads are picked up at a great height.

Since the hoist rope weight is taken into account in the load charts at minimum reeving and with a minimum radius only to the placement surface of the crane:
- ► At a higher reeving or when lowering the hook block under the crane placement surface, the additional hoist rope weight must be deducted from the maximum load.

Note
Observe the permissible hook block weights for erection and take-down of the boom system.
If the permissible hook block weight for erection and take-down of the boom system is exceeded due to the increase in the own weight of the hook block, then the boom system cannot be erected or taken down with this hook block weight.
- ► Observe the permissible hook block weights for erection and take-down in the erection and take-down charts.

If the permissible hook block weight for erection and take-down is exceeded:
- ► Disassemble the auxiliary weights for the erection and take-down of the boom system.

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2 Calculating the minimum required hook block weight

Formula
G = L x M x n x F

Formula for determining the minimum required hook block weight

Abbreviation	Designation	Unit
G	Minimum required hook block weight	kg
L	Overall boom length	m
M	Rope weight	kg/m
n	Reeving	-
F	Factor	-

Explanation of variables to calculate the minimum required hook block weight

2.1 Determining the rope weight for the rope diameter

Rope diameter	Rope weight M
13 mm	0.85 kg/m
15 mm	1.12 kg/m
17 mm	1.45 kg/m
19 mm	1.81 kg/m
21 mm	2.24 kg/m
23 mm	2.67 kg/m
25 mm	3.09 kg/m
28 mm	3.94 kg/m
30 mm	4.46 kg/m
32 mm	5.09 kg/m
38 mm	7.21 kg/m
40 mm	7.99 kg/m
52 mm	13.50 kg/m

Rope diameter and rope weight

2.2 Determining the factor for reeving

Reeving n	Factor F
1	1.31
2	1.34
3	1.36
4	1.39
5	1.41
6	1.44

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Reeving n	Factor F
7	1.46
8	1.49
9	1.52
10	1.54
11	1.57
12	1.60
13	1.63
14	1.65
15	1.68
16	1.71
17	1.74
18	1.77
19	1.80
20	1.83
21	1.87
22	1.90
23	1.93
24	1.96
25	2.00
26	2.03
27	2.06
28	2.10
29	2.13
30	2.17

Reeving and factor

2.3 Calculation example for crane operation with 1 hoist rope winch in a single operation

Crane configuration:
- Length of the main boom: 70 m
- Length of the auxiliary boom: 28 m
- Rope diameter: 28 mm
- Reeving: 12 rope strands

Variables for the calculation:

L = overall boom length = 98 m
M = rope weight for rope diameter 28 mm = 3.94 kg/m
n = reeving = 12
F = factor for 12 rope strands = 1.60

Calculation:

G = **L** x **M** x **n** x **F**

G = 98 m x 3.94 kg/m x 12 x 1.60

G = 7414 kg

The minimum required hook block weight must be 7414 kg.

It is recommended to increase the minimum required hook block weight at least an additional 10 percent (741 kg) to 8155 kg. This improves the spooling performance of the rope. When doing so, the maximum load for the respective boom combination may **not** be exceeded.

2.4 Calculation example for crane operation with 2 hoist rope winches in parallel operation

Crane configuration:

- Length of the main boom: 70 m
- Length of the auxiliary boom: 28 m
- Rope diameter: 28 mm
- Reeving: 2 x 8 rope strands

Variables for the calculation:

L = overall boom length = 98 m
M = rope weight for rope diameter 28 mm = 3.94 kg/m
n = reeving = (2 x 8)
F = factor for 8 rope strands = 1.49

Calculation:

G = **L** x **M** x (**2** x **n**) x **F**

G = 98 m x 3.94 kg/m x (2 x 8) x 1.49

G = 9205 kg

The minimum required hook block weight must be 9205 kg.

It is recommended to increase the minimum required hook block weight at least an additional 10 percent (921 kg) to 10126 kg. This improves the spooling performance of the rope. When doing so, the maximum load for the respective boom combination may **not** be exceeded.

3 Slack rope formation

If the hook block can no longer be lowered due to slack rope formation, then the following steps must be carried out.

3.1 Spooling up loose hoist rope

► Spool up loose hoist rope between the boom head and the wind carefully onto the winch.

Note
► A slight rope slack must remain between the boom head and the winch!

3.2 Luffing the boom down

When luffing the boom down, the hoist rope length can shorten and the hook block can collide with the boom head.

NOTICE
Hoist rope too short!
Danger of collision.
► Do not pull the hook block against the boom head.

► Luff the boom down carefully.

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Result:

– The hoist rope between the boom head and the winch is tensioned.

3.3 Lowering the hook block

► Lower the hook block carefully with the winch.

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40.35.10 Hook blocks for single operation

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1 Crane operation with 1 hoist rope F= 63 kN and d= 17 mm (EST1)

1.1 Load hook 12.5 E (SWL 12.5 t)

Load	Rope pulleys	Maximum reeving	Net weight without auxiliary weight
6.3 t	0	1	140 kg

1.2 Hook block 20 EM (SWL 20.0 t)

Load	Rope pulleys	Maximum reeving	Net weight without auxiliary weight
18.7 t	1	3	325 kg

1.3 Hook block 50 EM (SWL 50.0 t)

Load	Rope pulleys	Maximum reeving	Net weight without auxiliary weight
42.3 t	3	7	450 kg

1.4 Hook block 50 DM (SWL 50.0 t)

Load	Rope pulleys	Maximum reeving	Net weight without auxiliary weight
42.3 t	3	7	450 kg

1.5 Hook block 80 DM (SWL 80.0 t)

Load	Rope pulleys	Maximum reeving	Net weight without auxiliary weight
64.6 t	5	11	530 kg

1.6 Hook block 100 DM (SWL 100.0 t)

Load	Rope pulleys	Maximum reeving	Net weight without auxiliary weight
80.4 t	7	14	760 kg

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40.35.40 Distance between hook and roller set in the boom head

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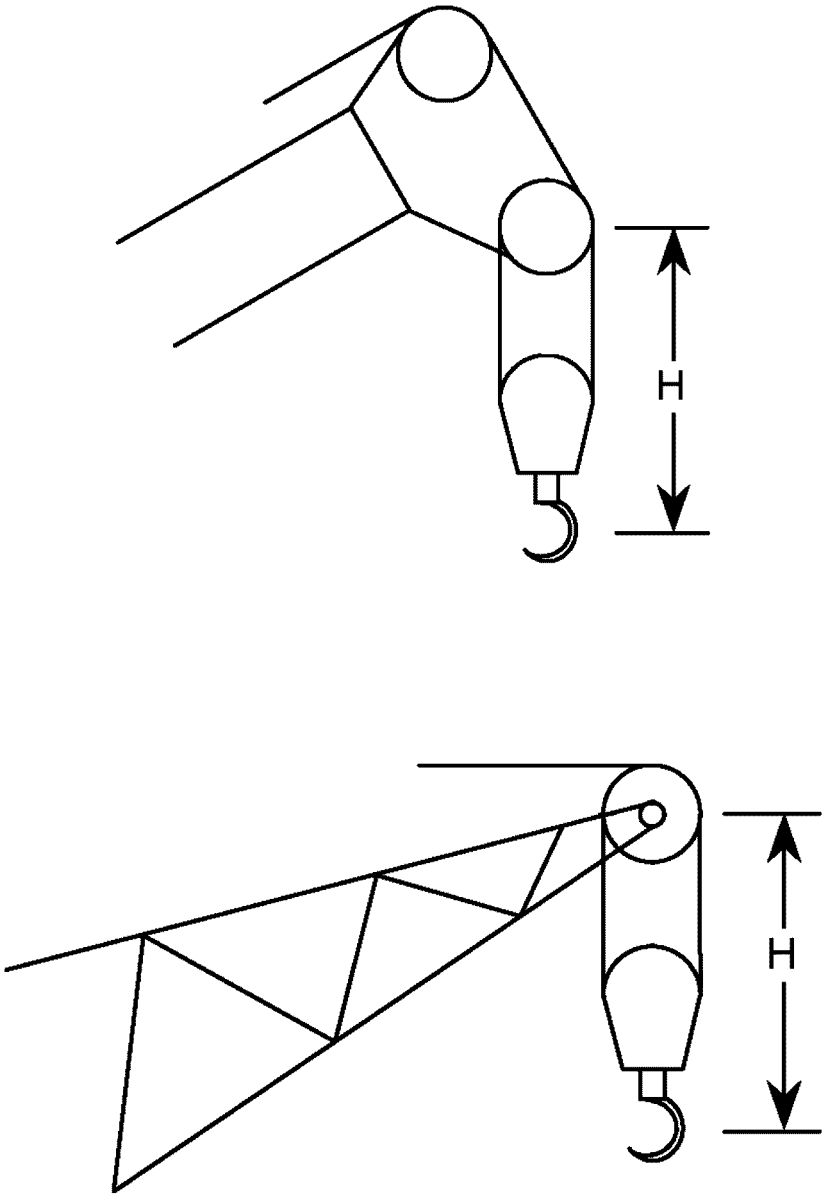

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Fig.115516: Distance Hook and roller set in boom head

1 Distance between hook and roller set in boom head

To determine the hook height, the lifting height must be reduced by the distance between the hook and the center of the roller set in the boom head.

The distances for the hook block used can be taken from the following chart.

Hook block	Distance H	
	On the pulley head of the telescopic boom	On the pulley head of the jib
Load hook 12.5 E	2.0 m	2.0 m
Hook block 20 EM	2.0 m	2.0 m
Hook block 50 EM	2.0 m	2.0 m
Hook block 50 DM	2.0 m	2.0 m
Hook block 80 DM	2.0 m	—
Hook block 100 DM	4.0 m	—

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40.50 Load reductions

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1 Boom nose

1.1 Crane operation on the main boom or auxiliary boom

The specified loads are valid for crane operation on the main boom or auxiliary boom **without** an installed boom nose.

If a boom nose is installed on the main boom or auxiliary boom during crane operation, reduce the loads based on the following points:
- Weight of the boom nose.
- Weight of reeved in hoist rope on boom nose.
- Weight of the used load handling equipment on the boom nose.
- Weight of used load handling and fastening equipment on boom head.

1.2 Crane operation on the boom nose

There are no separate load charts for crane operation on the boom nose. The load charts for the main and auxiliary boom operating modes apply.

In the case of crane operation on the boom nose, reduce the loads by the following points:
- Weight of the boom nose.
- Weight of reeved in hoist rope on boom nose.
- Weight of the used load handling and fastening equipment on the boom nose.
- Weight of the utilized load handling equipment on the boom head.

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2 Folding jib

The load specified in the load charts for crane operation on the main boom are valid **without** folding jib installed on the side on the boom pivot section.

Note

- On the main boom, if an approved folding jib is installed on the side on the boom pivot section during crane operation, then the possible load values are reduced. The respective load reductions are specified in the following chart.
- A permissible folding jib is for example a double folding jib, a single folding jib or a special folding jib.

Boom length	Load reduction Folding jib K- 19.0 m on the side on the pivot section
T- 12.6 m	0.60 t
T- 17.3 m	0.40 t
T- 21.9 m	0.30 t
T- 26.6 m	0.30 t
T- 31.3 m	0.20 t
T- 36.0 m	0.20 t
T- 40.6 m	0.20 t
T- 45.3 m	0.20 t
T- 50.0 m	0.20 t

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40.55 Slewing speed of the crane superstructure

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1 Maximum permissible slewing speed with suspended nominal load

WARNING
Exceeding the maximum permissible slewing speed!
Toppling crane, failure of crane structures.
Death or severe injuries, high property damage.
► Observe the maximum permissible slewing speed.

Note
► For the special folding jib K- 2.0 m the permissible slewing speeds for telescope operation apply.

Boom	Permissible slewing speed	
	LICCON	Rpm
T-12.6 m	60 %	0.90 min^{-1}
T-17.3 m	35 %	0.60 min^{-1}
T-21.9 m	35 %	0.60 min^{-1}
T-26.6 m	35 %	0.60 min^{-1}
T-31.3 m	35 %	0.60 min^{-1}
T-36.0 m	15 %	0.30 min^{-1}
T-40.6 m	15 %	0.30 min^{-1}
T-45.3 m	15 %	0.30 min^{-1}
T-50.0 m	15 %	0.30 min^{-1}
TK operation	15 %	0.30 min^{-1}

Maximum permissible rotational speeds

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40.60 Boom system

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1 Short description of the component groups

1.1 Main boom

Type	Description
T	Telescopic boom

1.2 Auxiliary boom

Type	Description
K	Folding jib

Note
► The folding jib with a length of 2.0 m is called a special folding jib.

2 Combination of component groups for operating modes

The component groups of the boom system can be combined to operating modes, see the Load chart manual, chapter 40.62.

Note
► This load chart manual contains load charts for certain operating modes. Overview of the respective operating modes, see the Load chart manual, chapter 40.90.

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40.62 Operating modes

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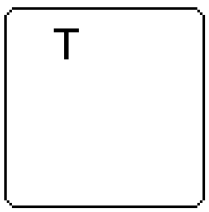
Fig.195219

1 Main boom operating modes

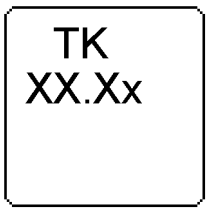
Examples:

Operating mode: T		
Icon	**Component group**	**Description**
	**T**	Telescopic boom

2 Auxiliary boom operating modes

2.1 Auxiliary boom operating modes with folding jib

Examples:

Operating mode: TK		
Icon	**Component group**	**Description**
	**T**	Telescopic boom
	K	Folding jib
	XX.X x	Folding jib length in meter (m) or feet (ft)

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40.65 Description of the load chart

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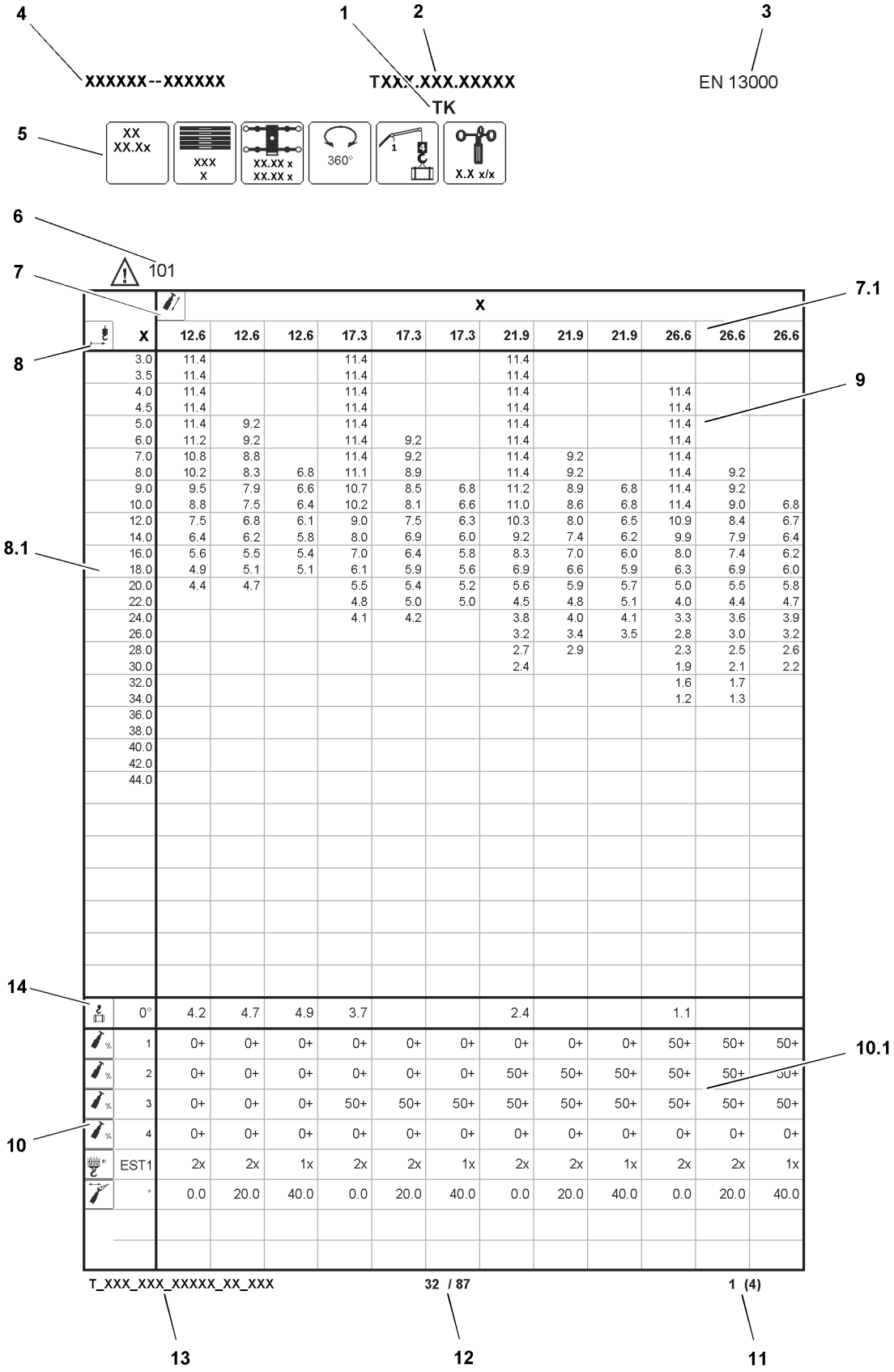


	X	12.6	12.6	12.6	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0	11.4			11.4			11.4					
	3.5	11.4			11.4			11.4					
	4.0	11.4			11.4			11.4			11.4		
	4.5	11.4			11.4			11.4			11.4		
	5.0	11.4	9.2		11.4			11.4			11.4		
	6.0	11.2	9.2		11.4	9.2		11.4			11.4		
	7.0	10.8	8.8		11.4	9.2		11.4	9.2		11.4		
	8.0	10.2	8.3	6.8	11.1	8.9		11.4	9.2		11.4	9.2	
	9.0	9.5	7.9	6.6	10.7	8.5	6.8	11.2	8.9	6.8	11.4	9.2	
	10.0	8.8	7.5	6.4	10.2	8.1	6.6	11.0	8.6	6.8	11.4	9.0	6.8
	12.0	7.5	6.8	6.1	9.0	7.5	6.3	10.3	8.0	6.5	10.9	8.4	6.7
	14.0	6.4	6.2	5.8	8.0	6.9	6.0	9.2	7.4	6.2	9.9	7.9	6.4
	16.0	5.6	5.5	5.4	7.0	6.4	5.8	8.3	7.0	6.0	8.0	7.4	6.2
	18.0	4.9	5.1	5.1	6.1	5.9	5.6	6.9	6.6	5.9	6.3	6.9	6.0
	20.0	4.4	4.7		5.5	5.4	5.2	5.6	5.9	5.7	5.0	5.5	5.8
	22.0				4.8	5.0	5.0	4.5	4.8	5.1	4.0	4.4	4.7
	24.0				4.1	4.2		3.8	4.0	4.1	3.3	3.6	3.9
	26.0							3.2	3.4	3.5	2.8	3.0	3.2
	28.0							2.7	2.9		2.3	2.5	2.6
	30.0							2.4			1.9	2.1	2.2
	32.0										1.6	1.7	
	34.0										1.2	1.3	
	36.0												
	38.0												
	40.0												
	42.0												
	44.0												
	0°	4.2	4.7	4.9	3.7			2.4			1.1		
	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50+	50+	50+
	2	0+	0+	0+	0+	0+	0+	50+	50+	50+	50+	50+	50+
	3	0+	0+	0+	50+	50+	50+	50+	50+	50+	50+	50+	50+
	4	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+
	EST1	2x	2x	1x	2x	2x	1x	2x	2x	1x	2x	2x	1x
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

Fig.158842: Example of a load chart

1 Description of the load chart

WARNING
Erroneous operation of the crane!
Toppling crane, failure of crane structures.
Death or severe injuries, high property damage.
- ► Set the LICCON overload protection exactly with the data in the respective load chart.
- ► Working outside the permissible set up configurations, boom radii and slewing ranges according to the load chart is prohibited.
- ► Move the boom system during the assembly operation only within the permissible ranges.

The data in the displayed load chart is an example and may not apply exactly to your crane.

1 Operating mode
- Operating mode data, see the Load chart manual, chapter 40.62.

2 Chart number
- Describes the set operating mode / set up configuration status in coded form.

3 Standard

4 Crane type / crane number

5 Chart characteristics with constant values
- Chart characteristics must be set / equipped to be able to lift the listed load values.

6 Code for limitations and notes
- If codes are specified, the codes are described in the load chart manual, Chapter 40.65.10.

7 Telescopic boom length icon
- Length of the telescopic boom **7.1** in meters (m) or feet (ft)

8 Boom radius icon
- Boom radius **8.1** in meters (m) or feet (ft)

9 Load values
- Load values in tons (t) or pounds (lb)

10 Column characteristics with variable values
- Variable values **10.1** of column characteristics
- Values **10.1** must be set / equipped so that the load values **9** can be lifted.

11 Page specification of the chart
- Shows the current page number in the load chart manual and the total number of pages for this chart.

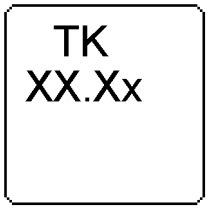
12 Page specification
- Indicates the current page number in the load chart manual and the total page number.

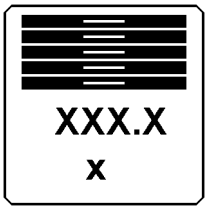
13 File name
- Chart number with respective version.

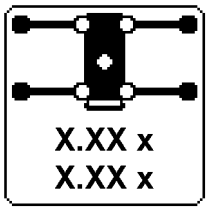
14 Additional lines
- Appears only for certain crane types.

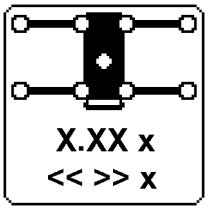
Note
- ► The various characteristics can appear as column characteristics with variable values **10** or as chart characteristics with constant values **5**.
- ► Icons of column characteristics **10** appear without values. The respective values are shown in the columns **10.1**.
- ► The values of chart characteristics **5** appear in the icon.
- ► A total of eight column characteristics **10** can be listed. If additional ones are required, then they are listed on the chart characteristics **5**. The values for these characteristics can also change within a chart.

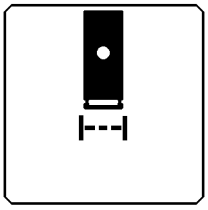
2 Icon explanation

Operating mode icon	
	The selected operating mode is shown in this icon. For a description of the icons, see the Load chart manual, Chapter 40.62.

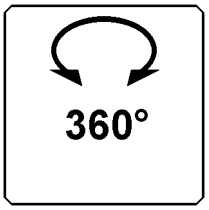
Counterweight	
	This icon or the corresponding row indicates the size of the counterweight in tons (t) or pounds (lb). The specified counterweight must be on the turntable, so that the load values for the respective chart can be reached.

Crane supported	
	This icon denotes the type and size of the support base. The size of the support base (length x width) is indicated in meters (m) or feet (ft). The crane must be supported on all four supports. The sliding beams must be swung out and / or extended to the specified dimension. Support base for “Crane supported” crane operation.

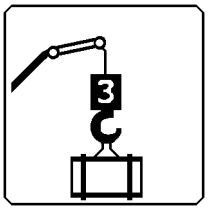
Crane supported with variable support base	
	This icon denotes the type and length of the support base. The length of the support base is indicated in meters (m) or feet (ft). The width of the support base is variable. The crane must be supported on all four supports. The sliding beams can be swung out and / or extended to various extension conditions. There are no charts in the load chart manual for the variable support base. Support base for “Crane supported with variable support base” crane operation.
Note:	The load values for the variable support base can be determined with the LICCON job planner.

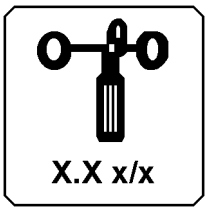
Crane freestanding on tires	
	This icon indicates that the crane is only supported by tires. In the case of the “Crane freestanding on tires” crane operation, this icon must be set. Take the specified tire pressure from the following chart.

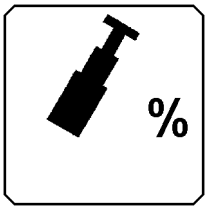
Tire size	Tire pressure for “Crane freestanding on tires” crane operation
29.5 R25	5.5 bar

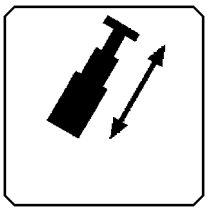
Slewing range	
	The slewing range of the crane superstructure is noted in this icon for the respective load chart. Various slewing ranges can be possible. The possible slewing ranges are listed in the following chart.

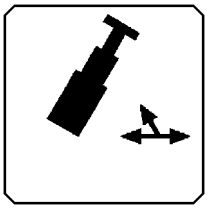
Slewing range	Description
360°	Unlimited turning is possible

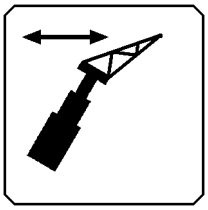
Load position	
	The position of the load on the boom system is noted in this icon. The possible load positions depend on the selected operating mode.

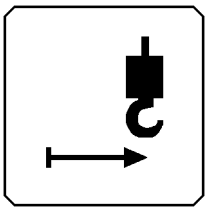
Permissible wind speed	
	This icon or corresponding row shows the maximum permissible wind speed in meters per second (m/s) or feet per second (ft/s). The maximum permissible wind speed depends on the operating mode and the set up configuration. If the wind speed exceeds the specified value, crane operation must be stopped and the crane must be taken down.
Note:	The maximum permissible wind speed refers to the 3 second wind gust speed at maximum lifting height.

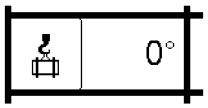
Extension condition of telescopic sections	
	The extension condition of the individual telescopic section is indicated as a percentage (%). “0” = fully retracted. “100” = fully extended. Extension conditions other than those specified in the charts are not permissible. The “+” sign next to the percentage value means that the corresponding telescopic section must be pinned. No sign next to the percentage value means that the corresponding telescopic section must be telescoped to the percentage value of the extension condition. The corresponding telescopic section must not however be pinned at this value of the extension condition. The loads assigned to the boom radii in the chart always apply for the respective maximum extension condition of a chart column.

Telescopic boom length	
	In the line below this icon, the various boom length are entered by columns, in meters (m) or feet (ft).
Note:	In operating modes with only one telescopic boom length, the icon appears near the characteristics chart.

Main boom angle	
	This icon or the corresponding row indicates the main boom angle in degrees (°). The specified main boom angle must be set to be able to reach the load values of the respective chart. The icon appears only in operating modes with a luffing lattice jib.

Auxiliary boom angle	
	This icon or the corresponding row indicates the auxiliary boom angle in degrees (°). The specified auxiliary boom angle must be set to be able to reach the load values of the respective chart.

Boom radius	
	The boom radius (working radius) is the horizontal distance of the hook block from the rotation axis of the crane superstructure in meters (m) or feet (ft), measured on the ground.

Load with a 0° main boom angle	
	The maximum load with a main boom angle of 0 degrees (0°) is specified on the corresponding line. The load is specified in tons (t) or pounds (lb).
Note:	If no maximum load is specified in a chart column: With a corresponding set up configuration and corresponding extension condition of the telescopic sections, the main boom can **not** be luffed down to an angle of 0°.

40.65.10 Limitations and notes

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Fig.195219

1 Limitations and notes in load charts

WARNING
Disregard of limitations and notes in load charts!
Toppling crane, failure of crane structures.
Death or severe injuries, high property damage.
► Adhere to the limitations and notes.

Note
► In part, limitations and notes are noted with a code on the load charts. In the following chart, the limitations and notes are listed with the respective code.

Code	Limitations and notes	Description
107	Loads above 69.9 t (154200 lb) only with auxiliary block	—
108	Loads above 80.4 t (177300 lb) only with auxiliary device	—

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40.70 Wind influences for crane operation

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1 Terminology

The following chart lists the most important terms, signs and units for wind influences during crane operation.

Note

- ► Make yourself familiar with the terms. For the determination and calculations of the permissible wind speed, you have to know the influence factors.
- ► Contact Liebherr-Werk Ehingen GmbH, if you need additional information for wind influences during crane operation.

Sign	Unit	Name	Definition
A_P	[m^2]	Projection surface	Applicable for the calculation of the wind exposure surface, vertically to the surface directed to the flow.
c_W		Wind resistance coefficient	Value for the flow resistance of wind flowing around a body.
A_W	[m^2]	Wind-exposed surface	Area exposed to wind = Projection area x Wind resistance coefficient $A_W = A_P \times c_W$
m_T	[t]	Capacity	Respective chart value from load chart.
m_H	[t]	Hoist load	Weight to be lifted (mass) (including fastening equipment, hook block and possibly the hoist rope part, which was not yet considered in the calculation). The hoist load may not reach more than the maximum chart value of the load chart.
m_N	[t]	Net load	Weight (mass) of the component to be lifted (without fastening equipment and hook block).
v(z)	[m/s]	3-second wind gust speed	Mean value of wind speed created over a time frame of 3 seconds at a height of z above the ground.
v_{max}	[m/s]	Maximum permissible wind speed	Maximum permissible 3 second wind gust speed at maximum lifting height.
v_{max_TAB}	[m/s]	Maximum permissible wind speed (load charts)	Maximum permissible 3 second wind gust speed at maximum lifting heights, which are specified for the load chart values in the load chart.
p	[N/m^2]	Dynamic pressure	Pressure load on a body due to wind flow. Dynamic pressure = density /2 x (3-second wind gust speed)^2 $p = \rho/2 \times (v(z))^2$ (ρ = Density of air = 1.25 kg/m^3)
F_W	[N]	Wind load	Force effect on a body due to wind flow. $F_W = A_W \times p$

Symbol

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2 Influence of wind on the LICCON overload protection

The wind can put an additional strain or relief on the crane system, especially in operating modes with long boom systems and steep boom position. This can falsify the load display. The LICCON overload protection can possibly shut off too early or too late.

2.1 Wind from the rear

If wind is coming from the rear, the boom system is additionally stressed. The load display is too high. The shut-off of the LICCON overload protection is already triggered by a hoist load that is smaller than the maximum capacity.

2.2 Wind from the front

If wind is coming from the front, the boom system is relieved. The load display is too low. The shut-off of the LICCON overload protection is triggered only by a hoist load that is larger than the maximum capacity.

DANGER
Danger of tipping and overload of load carrying components!
The wind from the front does not reduce the load of the hook, hoist rope, hoist rope pulleys and hoist winch. If wind is coming from the front, these components can be overloaded by lifting a load until the shut-off of the LICCON overload protection!
If the wind from the front diminishes, then the entire crane can be overloaded if it had been stressed before until shut-off of the LICCON overload protection.

- ► The crane driver must know the weight of the hoist load and may not exceed the maximum capacity.

2.3 Wind from the side

If wind is coming from the side, the boom system is stressed on the side. The load display is almost the same as for crane operation without wind influences.

DANGER
Danger of tipping and overload of load carrying components!
For crane operation, if the wind speed is higher than the maximum permissible wind speed, then the crane can be overloaded without it being noticed if wind is coming from the side!

- ► The crane driver must know the weight of the hoist load and may not exceed the maximum capacity.
- ► Before crane operation, determine the maximum permissible wind speed and carry out the wind surface calculation if necessary.

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3 Permissible wind speed and wind surface calculation

DANGER
Wind speed too high!
Danger of tipping and overload of load carrying components.
Death, severe bodily injuries, property damage.
- ► Before starting to work, the crane operator must check with the respective weather bureau to obtain the wind speeds for the duration of operation. If impermissible wind speeds are expected, then it is prohibited to lift a hoist load.
- ► The 3 second wind gust speed v(z) at the maximum height of the crane may not exceed the maximum permissible wind speed (v_{max}) and the maximum permissible wind speed according to the load chart (v_{max_TAB}) at any point in time.

Note
- ► The maximum permissible wind speed (v_{max}) and the maximum permissible wind speed according to the load chart (v_{max_TAB}) always refer to the 3 second wind gust speed, which is present at the maximum height of the crane.
- ► Instead of the 3 second wind gust speed, weather information services often report a wind speed (v_m), which is averaged within a time period of 10 minutes (so-called 10 minute average). It refers to the wind force on the Beaufort scale, normally to the medium value of the wind speed, which is determined within a time from of 10 minutes at a height of 10 m above ground or above sea level.
- ► The determining factor for the calculation of the 3 second wind gust speed in maximum height of the crane is significantly higher than the average value of the wind speed, which is determined over a time of 10 minutes at a height of 10 m above ground.

Crane operation is generally permissible up to the maximum wind speed (v_{max_TAB}) specified in the respective load chart for the current boom length.

The prerequisite for that is:
- – The wind exposure surface (A_W) of the hoist load does not exceed 1.2 m^2/t

DANGER
Wind speed too high!
Danger of tipping and overload of load carrying components.
- ► The maximum permissible wind speed according to the load chart (v_{max_TAB}) may not be exceeded, even if the wind exposure surface (A_W) of the hoist load is smaller than 1.2 m^2/t.
- ► If the wind exposure surface (A_W) of the hoist load is more than 1.2 m^2/t , then the maximum permissible wind speed (v_{max}) must be redetermined for the load case.

3.1 Wind resistance coefficient (c_w)

For the determination of the maximum permissible wind speed (v_{max}), the highest wind resistance coefficient (c_W) is required. The wind resistance coefficient (c_W) depends on the shape of the hoist load.

Note
- ► Check with person who created the load to be lifted for the wind resistance coefficient (c_W).

The following chart lists the typical shapes with the respective wind resistance coefficients (c_W).

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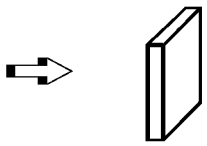
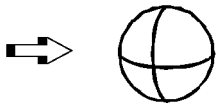
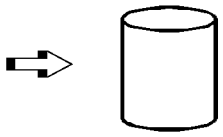
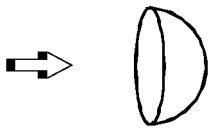
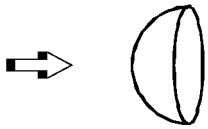
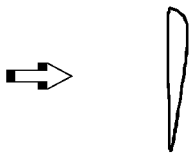
Shape	Wind resistance coefficient c_W	Examples
	1.1 to 2.0	Plate, panel, piling
	0.3 to 0.4	Ball, ball-shaped container
	0.6 to 1.0	Pipe, silo, reactor container
	0.8 to 1.2	Hemisphere
	0.2 to 0.3	Hemisphere
	0.05 to 0.1	Rotor blade, complete rotor
	Approx. 1.6	Rotor blade, complete rotor

Shapes with respective wind resistance coefficients (c_W)

3.2 Determining the maximum permissible wind speed (v_{max})

WARNING
Wind speed too high!
Toppling crane, failure of crane structure.
Death, severe bodily injuries, property damage.
► **Never** exceed the maximum permissible wind speed according to the load chart (v_{max_TAB}).

The maximum permissible wind speed (v_{max}) can be determined with the following methods:
– Calculate the maximum permissible wind speed
– Determining the maximum permissible wind speed with wind force diagrams

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If the determined maximum permissible wind speed (v_{max}) is **greater than** the maximum permissible wind speed according to the load chart (v_{max_TAB}):
- Crane operation up to the maximum permissible wind speed according to the load chart (v_{max_TAB}).

If the determined maximum permissible wind speed (v_{max}) is **smaller than** the maximum permissible wind speed according to the load chart (v_{max_TAB}):
- Crane operation permitted up to the determined maximum permissible wind speed (v_{max}).

3.3 Calculating the maximum permissible wind speed

$$V_{max} = V_{max\_TAB} \times \sqrt{\frac{1.2 \frac{m^2}{t} \times m_H}{A_W}}$$

Fig.111606: Formula for calculating the maximum permissible wind speed

The following data is required for the calculation:
- Maximum permissible wind speed according to load chart (v_{max_TAB})
- Hoist load (m_H)
- Projection surface of hoist load (A_P)
- Wind resistance coefficient (c_W)

Description of procedure:
1. Calculation of wind exposure surface ($A_W = A_P \times c_W$)
2. Check if the wind exposure surface (A_W) exceeds the limit value of 1.2 m^2/t
3. Calculation of the maximum permissible wind speed (v_{max})

3.3.1 Example for calculating the maximum permissible wind speed

Data for calculation of the load case:
v_{max_TAB} = 9.0 m/s
m_H = 50.0 t
A_P = 70.0 m^2
c_W = 1.4

Step 1: Calculating the wind-exposed surface

$A_W = A_P \times c_W$
A_W = 70.0 m^2 x 1.4
A_W = 98.0 m^2
Result: The wind exposure surface (A_W) is: **98.0 m^2**

Step 2: Checking if the wind exposure surface (A_W) exceeds the limit value of 1.2 m^2/t

The wind exposure surface per ton of hoist load is: 98.0 m^2 / 50 t = **1.96 m^2/t**

Result: The wind exposure surface per ton of hoist load exceeds the limit value of 1.2 m^2/t.

The maximum permissible wind speed must be recalculated!

Step 3: Calculating the maximum permissible wind speed

$$V_{max} = V_{max\_TAB} \times \sqrt{\frac{1.2 \frac{m^2}{t} \times m_H}{A_W}}$$

$$V_{max} = 9 \frac{m}{s} \times \sqrt{\frac{1.2 \frac{m^2}{t} \times 50t}{98 m^2}}$$

$$V_{max} = 7.04 \frac{m}{s}$$

Fig.111607: Example for calculating the maximum permissible wind speed

Result: The maximum permissible wind speed is: **7.04 m/s**

3.4 Determining the maximum permissible wind speed with wind force diagrams

Depending on the maximum permissible wind speed according to the load chart (v_{max_TAB}) the maximum permissible wind speed (v_{max}) for the load case can be determined with the following wind force diagrams.

List of wind force diagrams:
- **Diagram 7.0 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 7.0 m/s
- **Diagram 8.6 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 8.6 m/s
- **Diagram 9.0 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 9.0 m/s
- **Diagram 9.9 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 9.9 m/s
- **Diagram 10.0 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 10.0 m/s
- **Diagram 11.1 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 11.1 m/s
- **Diagram 11.2 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 11.2 m/s
- **Diagram 12.8 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 12.8 m/s
- **Diagram 13.4 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 13.4 m/s
- **Diagram 14.3 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 14.3 m/s
- **Diagram 15.6 m/s** : Wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 15.6 m/s

WARNING
Wind speed too high!
Toppling crane, failure of crane structure.
Death, severe bodily injuries, property damage.
► The maximum permissible wind speed according to the load chart (v_{max_TAB}) must match the maximum permissible wind speed of the wind force diagram.

The following data is required for the determination:
- Maximum permissible wind speed according to load chart (v_{max_TAB})
- Hoist load (m_H)

- Projection surface of hoist load (A_P)
- Wind resistance coefficient (c_W)

Description of procedure:
1. Calculation of wind exposure surface ($A_W = A_P \times c_W$)
2. Check if the wind exposure surface (A_W) exceeds the limit value of 1.2 m^2/t.
3. Determination of maximum permissible wind speed (v_{max}) from the respective wind force diagram

3.4.1 Example for determining the maximum permissible wind speed

Data for calculation of the load case:
v_{max_TAB} = 9.0 m/s
m_H = 50.0 t
A_P = 70.0 m^2
c_W = 1.4

Step 1: Calculating the wind-exposed surface

$A_W = A_P \times c_W$
A_W = 70.0 m^2 x 1.4
A_W = 98.0 m^2
Result: The wind exposure surface (A_W) is: **98.0 m^2**

Step 2: Checking if the wind exposure surface (A_W) exceeds the limit value of 1.2 m^2/t

The wind exposure surface per ton of hoist load is: 98.0 m^2 / 50 t = **1.96 m^2/t**

Result: The wind exposure surface per ton of hoist load exceeds the limit value of 1.2 m^2/t.

The maximum permissible wind speed must be redetermined!

Step 3: Determining the maximum permissible wind speed (v_{max}) from the respective wind force diagram

Determination of maximum permissible wind speed (v_{max}) from the respective wind force diagram for load charts with a maximum permissible wind speed (v_{max_TAB}) of 9 m/s

Diagram 9.0 m/s

Result: The maximum permissible wind speed is: **7.04 m/s**

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3.4.2 Wind force diagrams

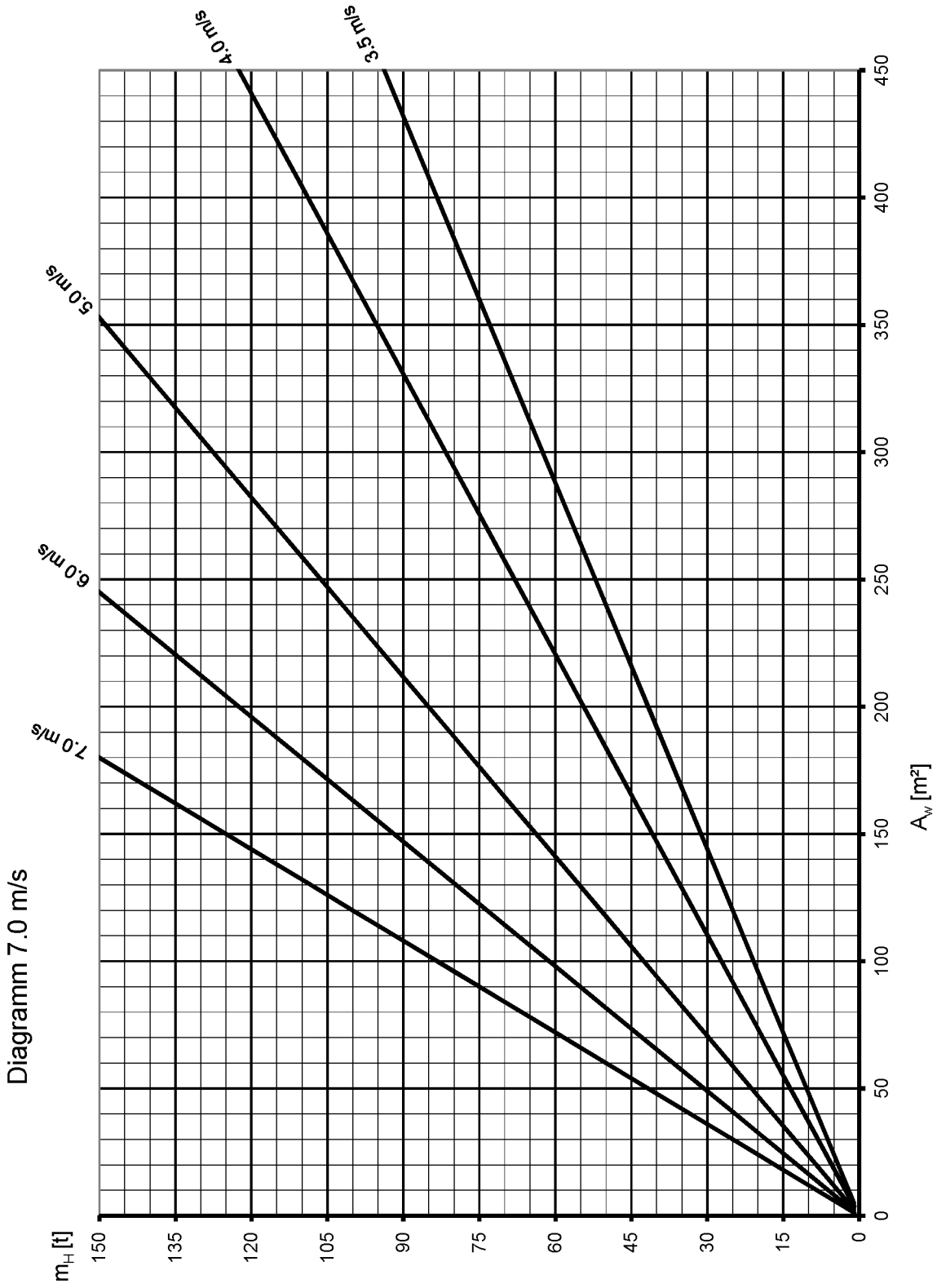

Fig.149229: Wind force diagram 7.0 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 7.0 m/s

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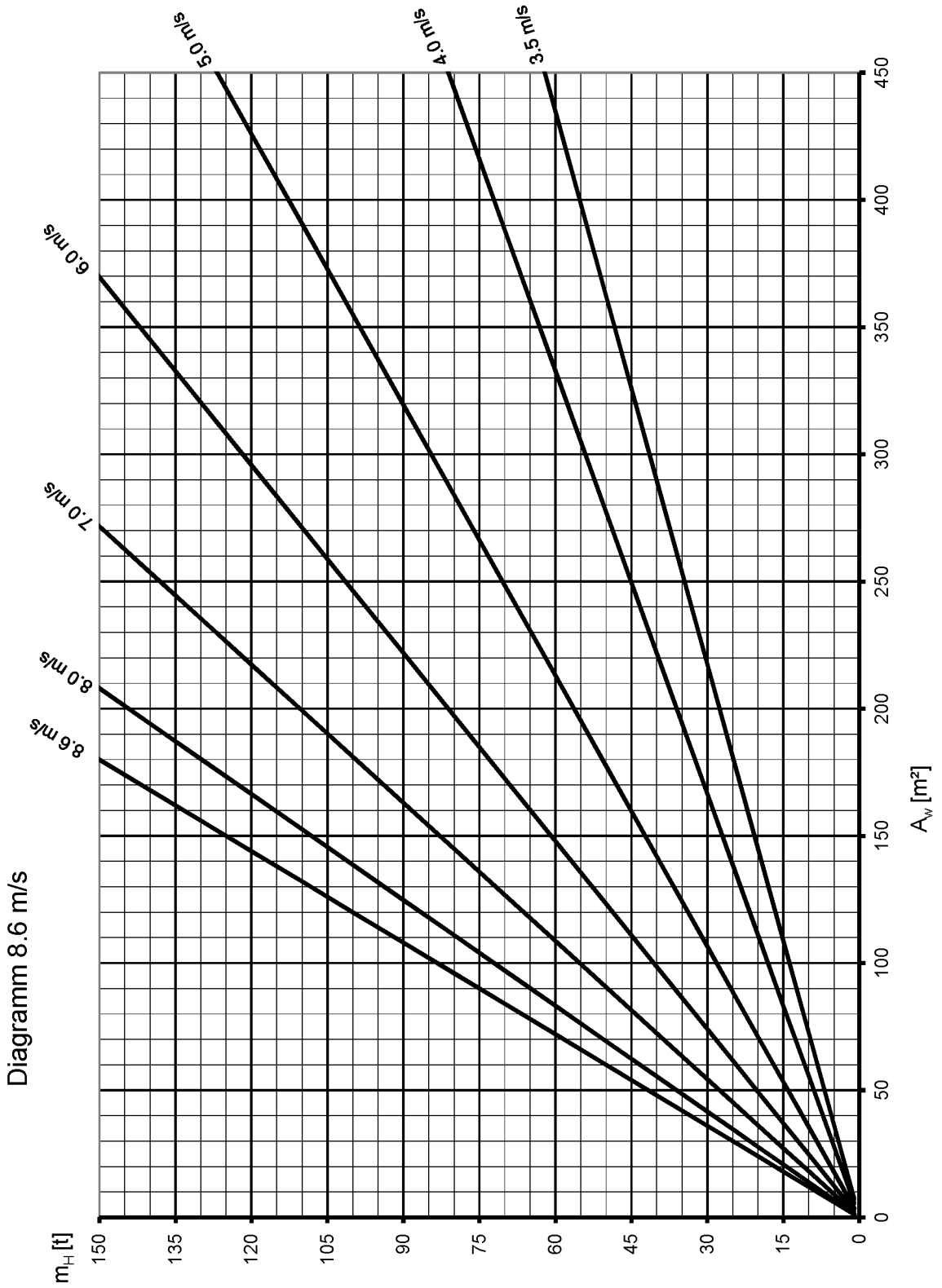

Fig.149230: Wind force diagram 8.6 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 8.6 m/s

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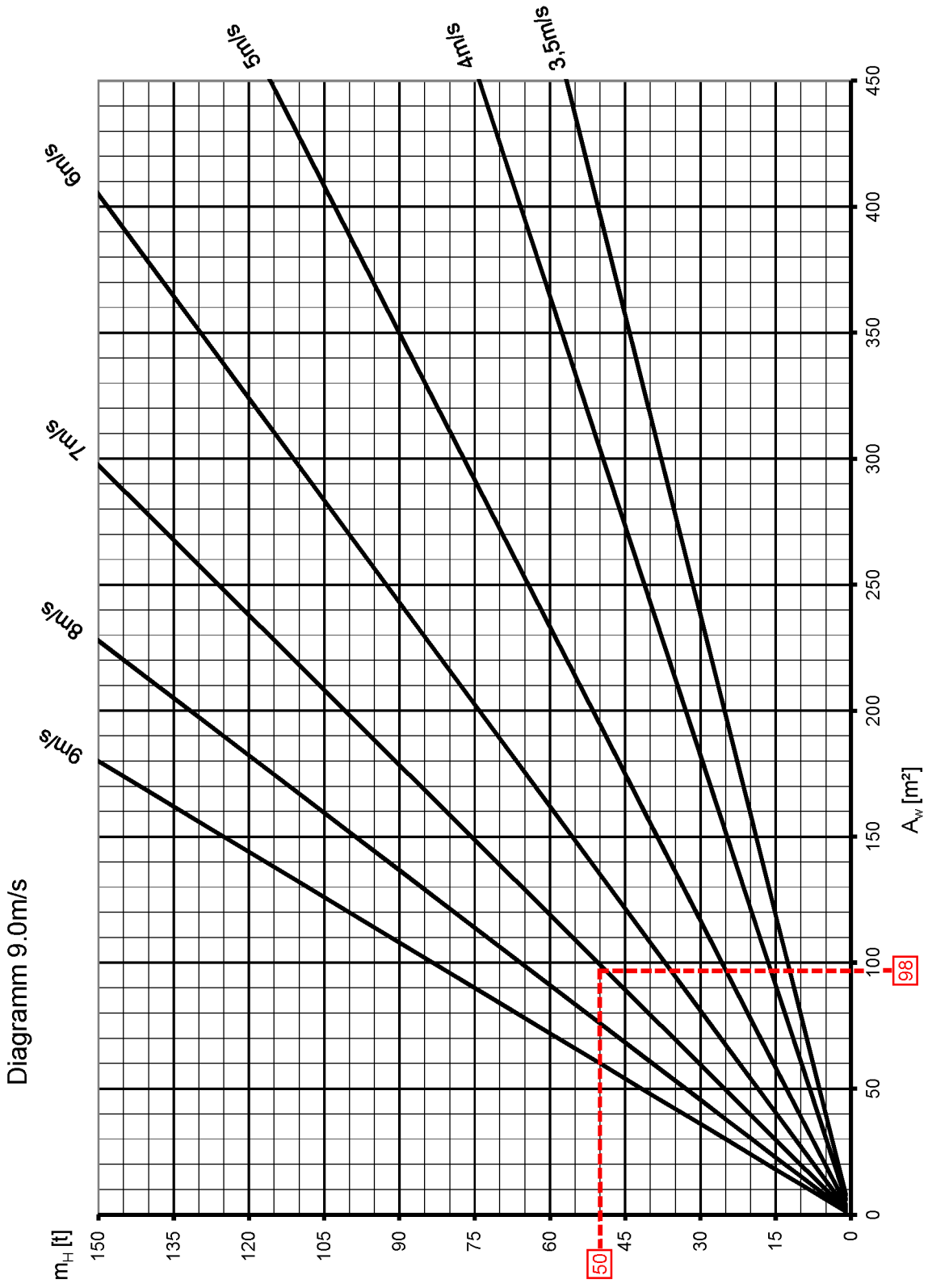

Fig.149231: Wind force diagram 9.0 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 9.0 m/s

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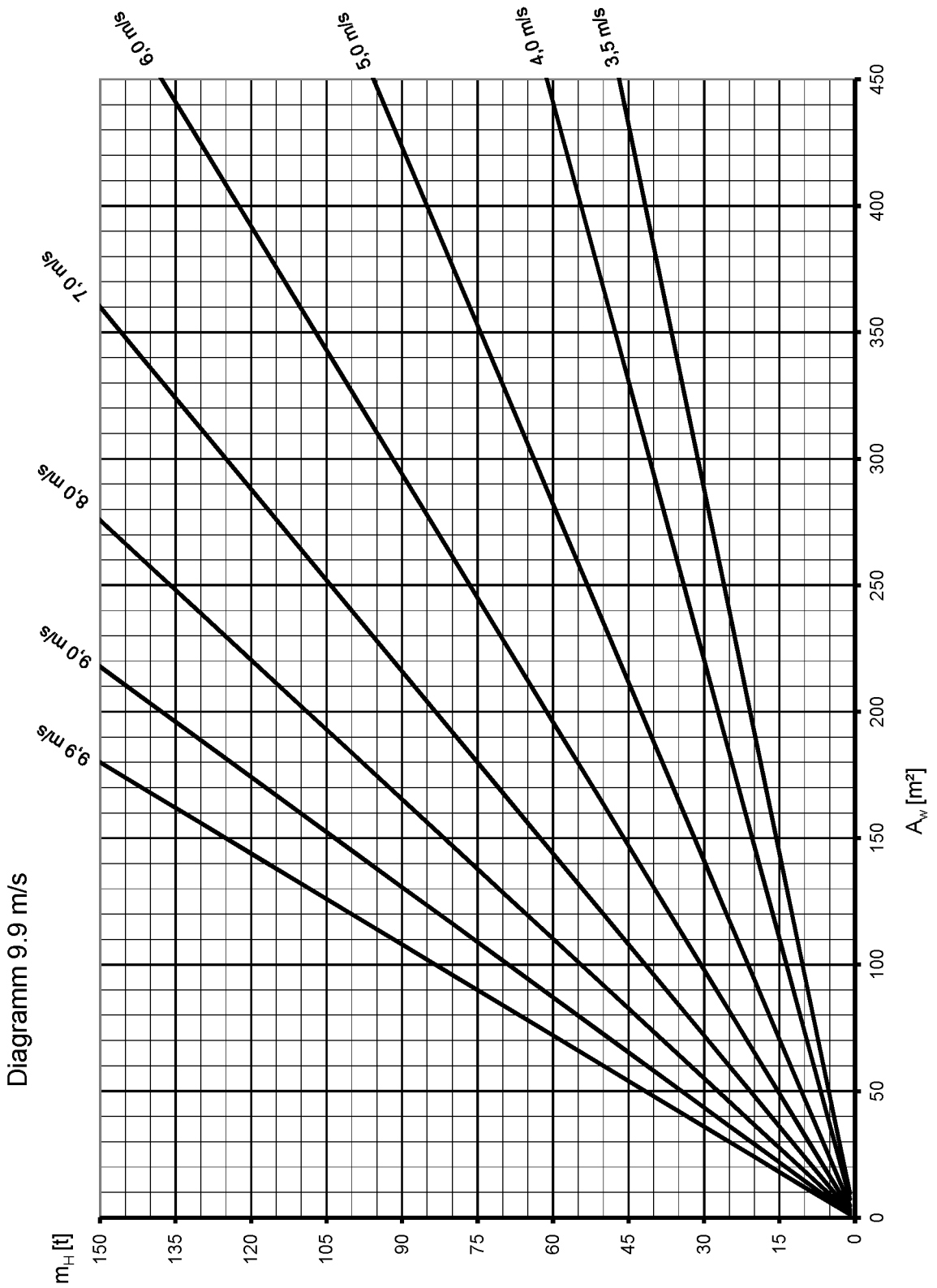

Fig.149232: Wind force diagram 9.9 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 9.9 m/s

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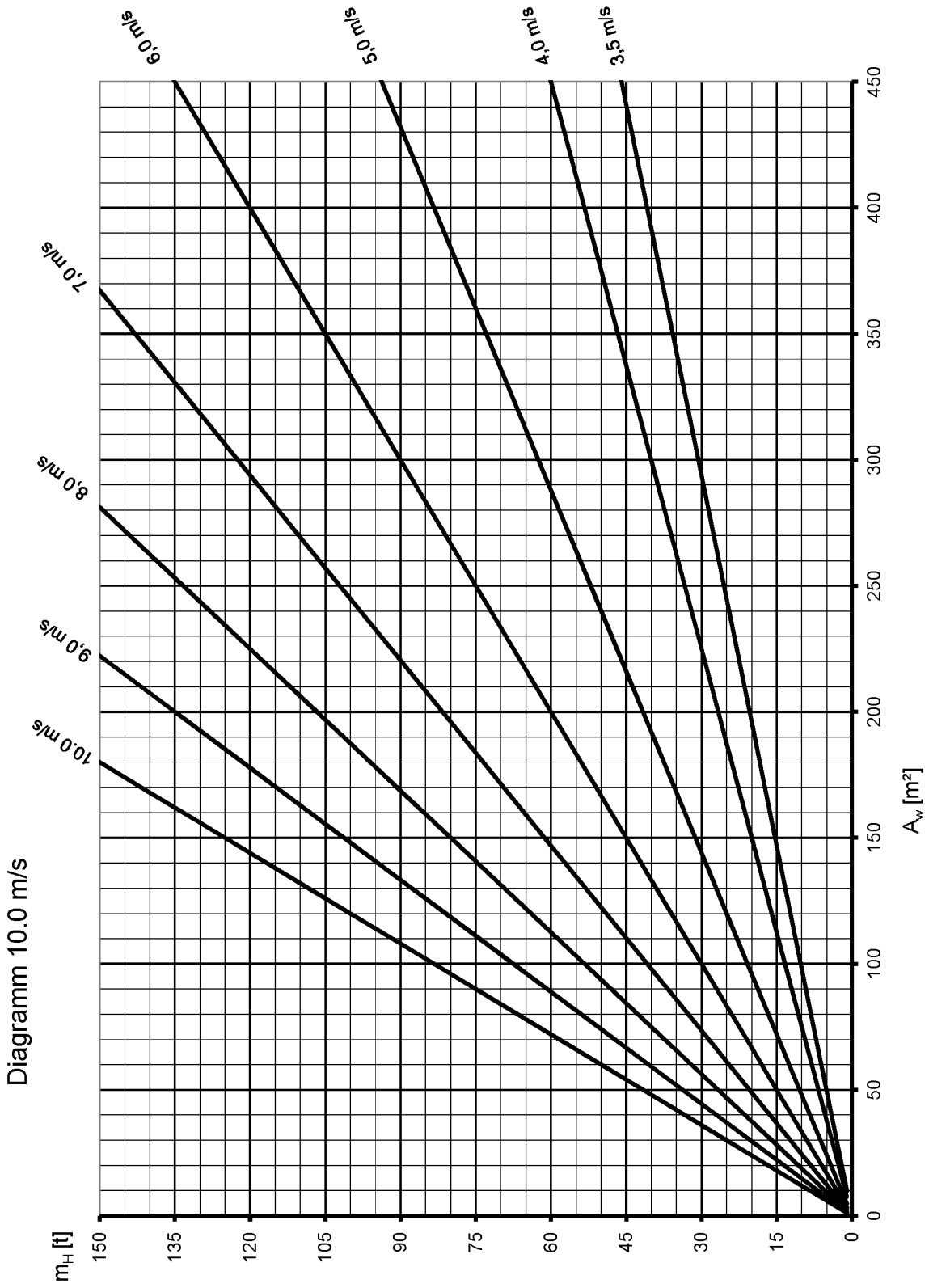

Fig.152631: Wind force diagram 10.0 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 10.0 m/s

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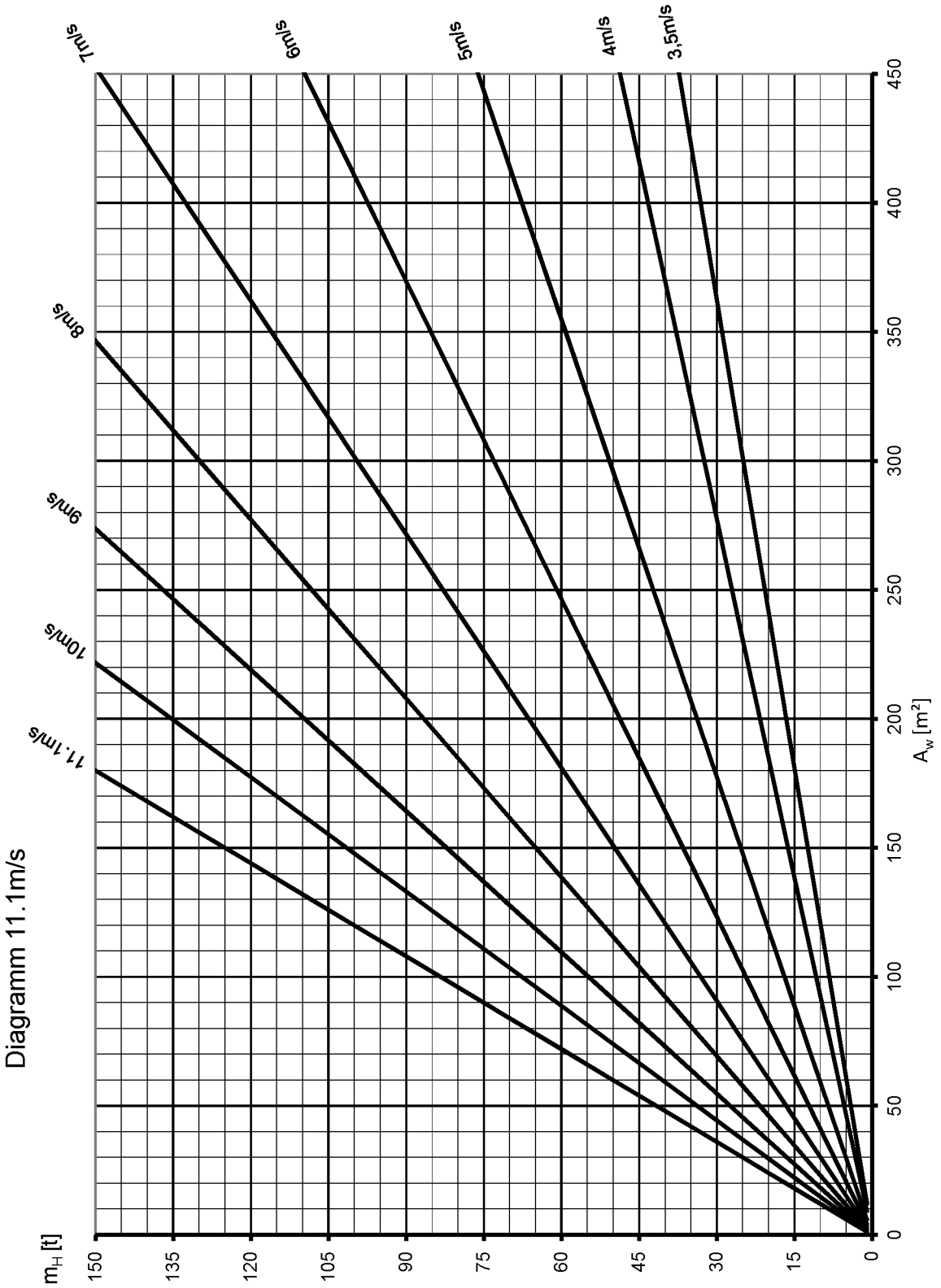

Fig.149233: Wind force diagram 11.1 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 11.1 m/s

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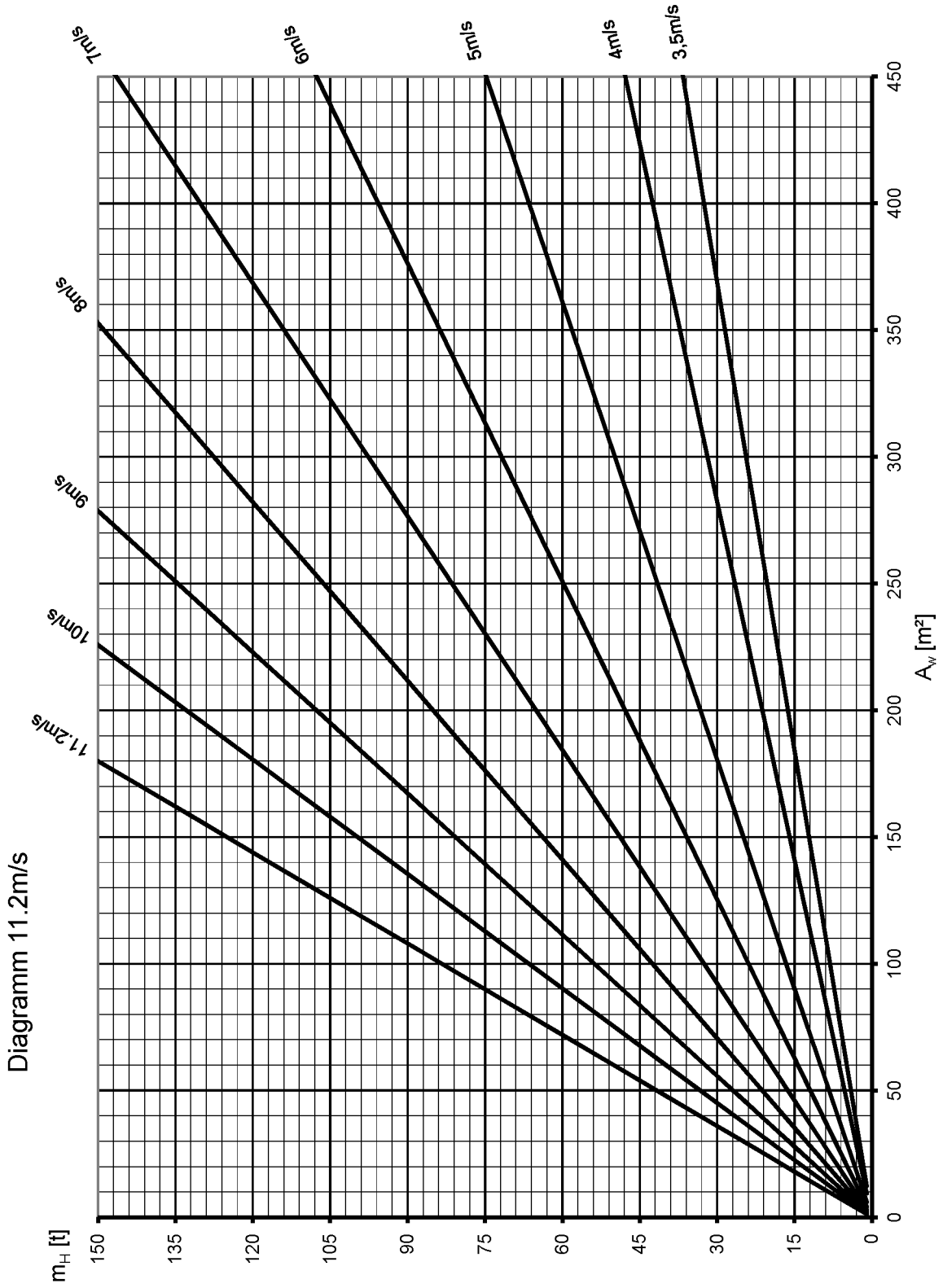

Fig.149234: Wind force diagram 11.2 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 11.2 m/s

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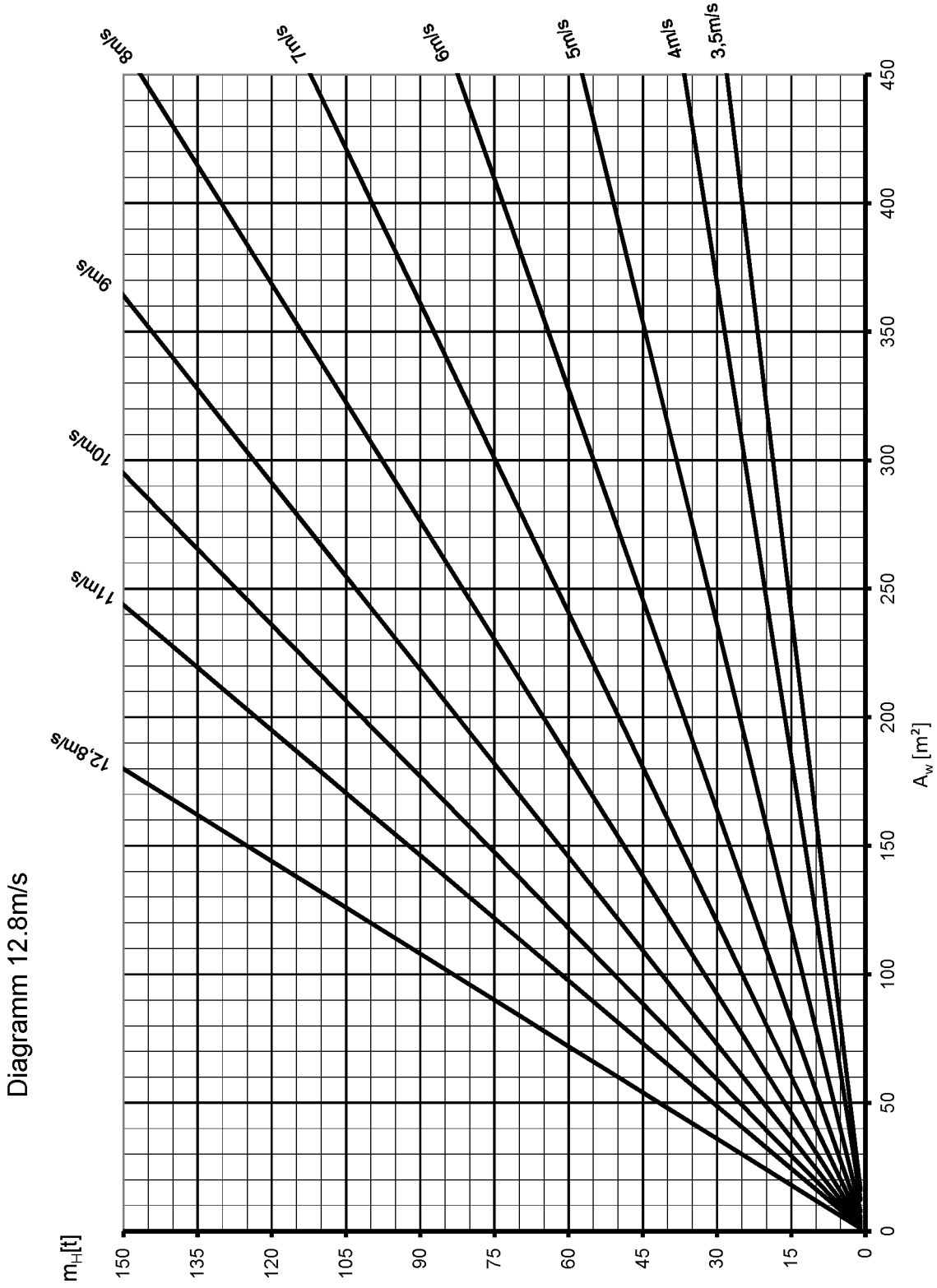

Fig.149235: Wind force diagram 12.8 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 12.8 m/s

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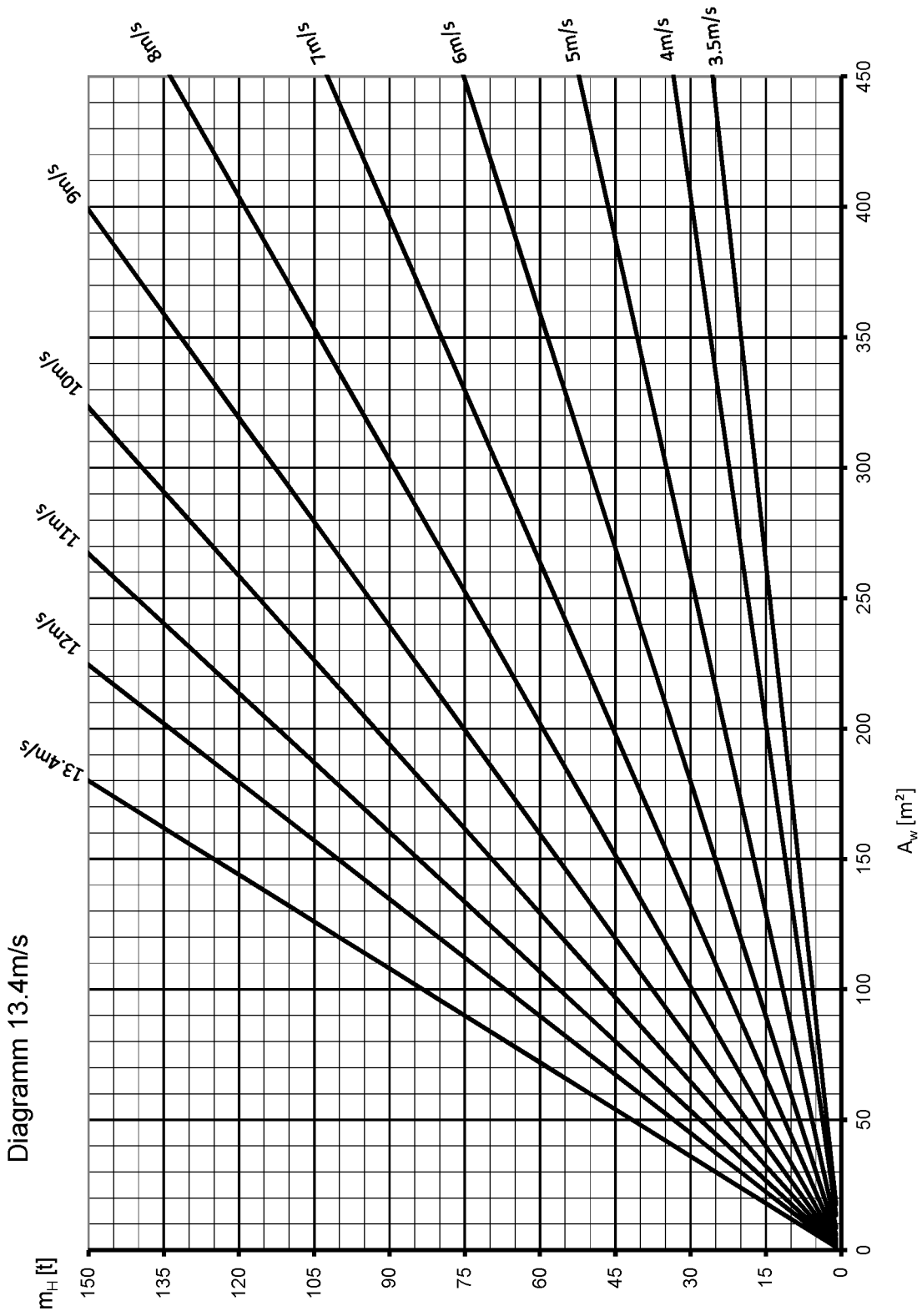

Fig.149236: Wind force diagram 13.4 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 13.4 m/s

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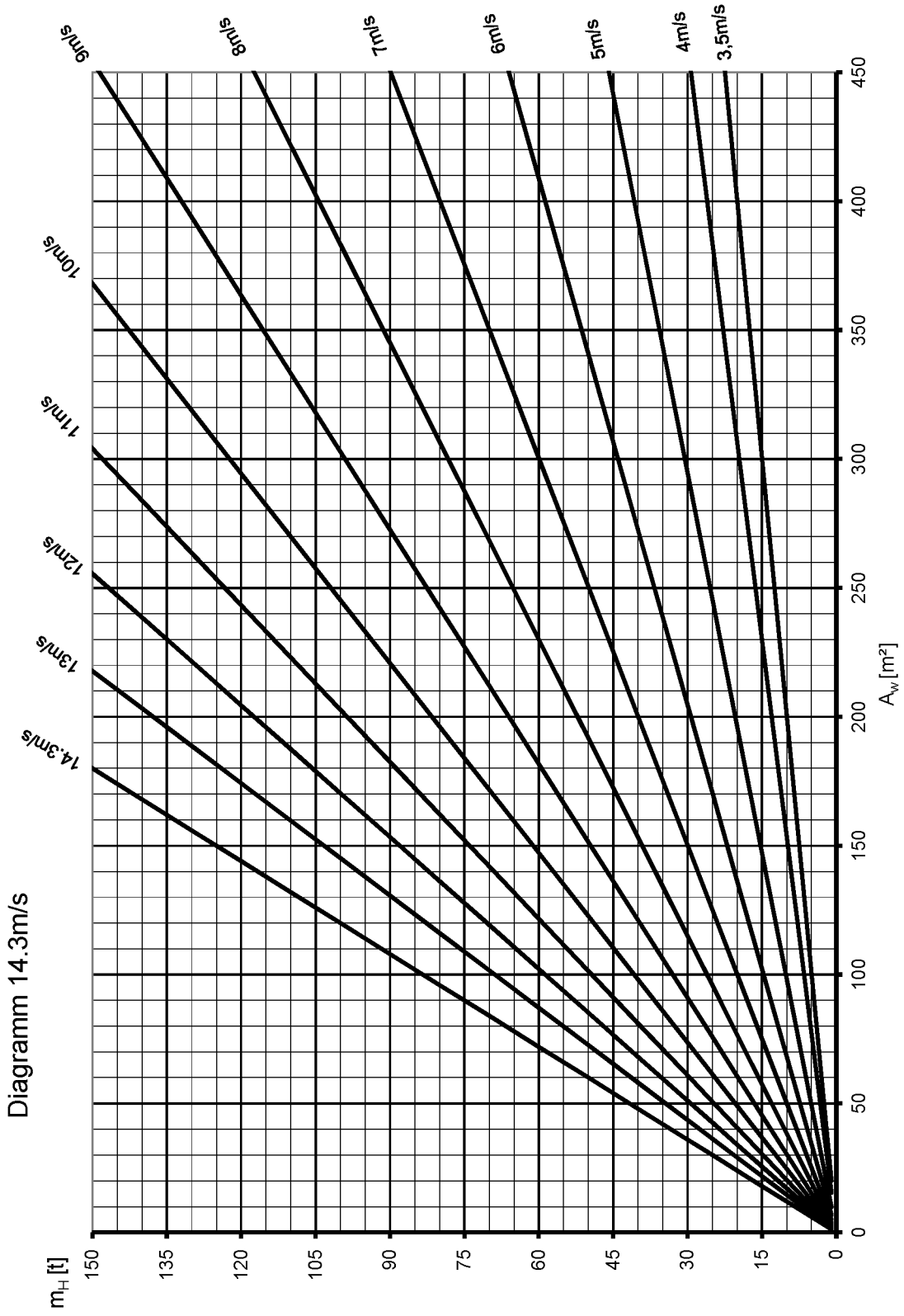

Fig.149237: Wind force diagram 14.3 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 14.3 m/s

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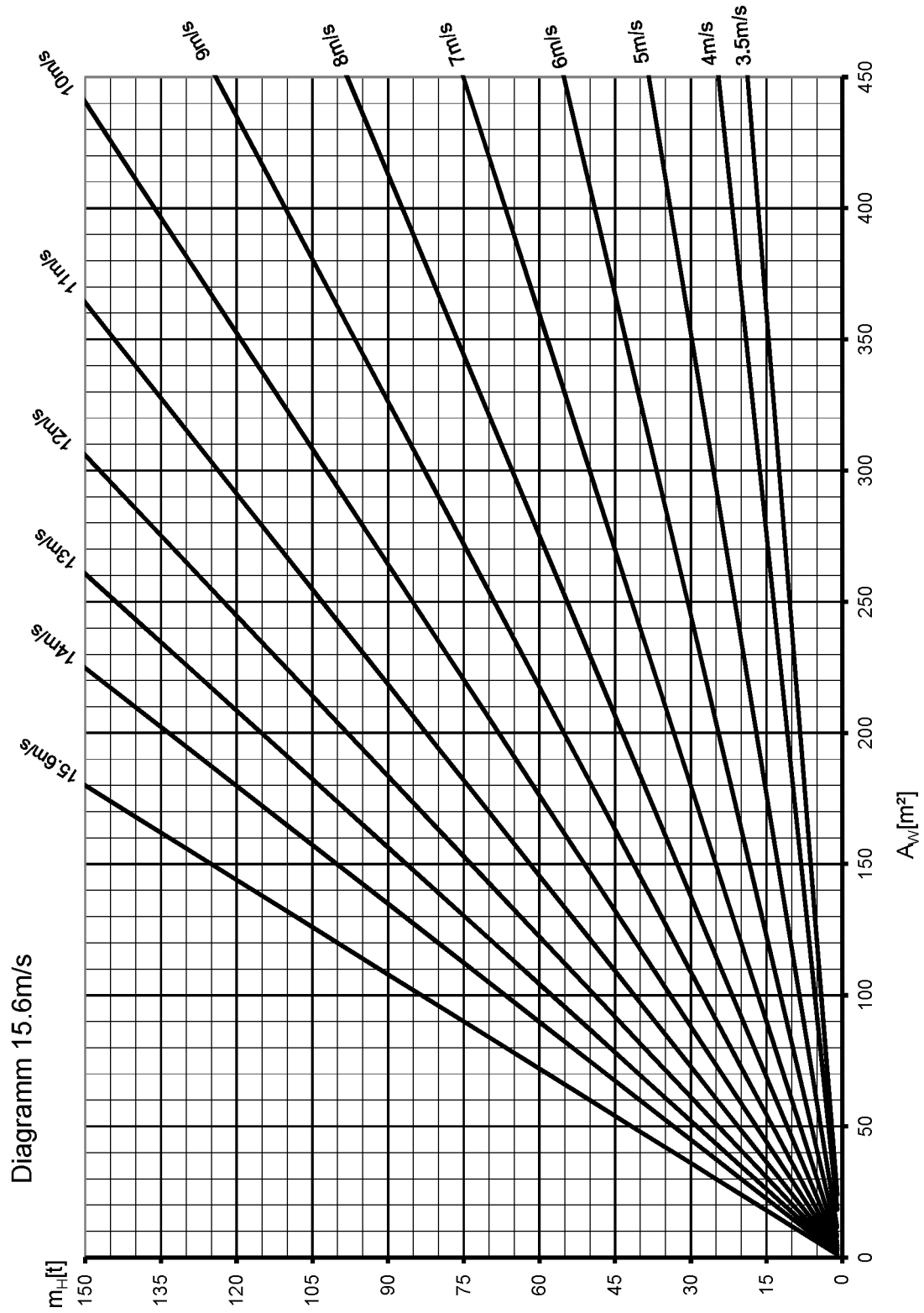

Fig.149238: Wind force diagram 15.6 m/s for load charts with a maximum permissible wind speed (v_{max_TAB}) of 15.6 m/s

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40.90 Load charts

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Fig.195219

1 Load charts

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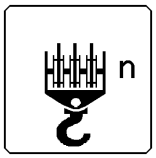
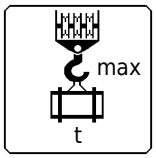
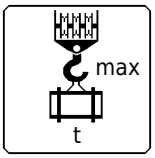
EST1, F = 63.0 kN, d = 17.0 mm







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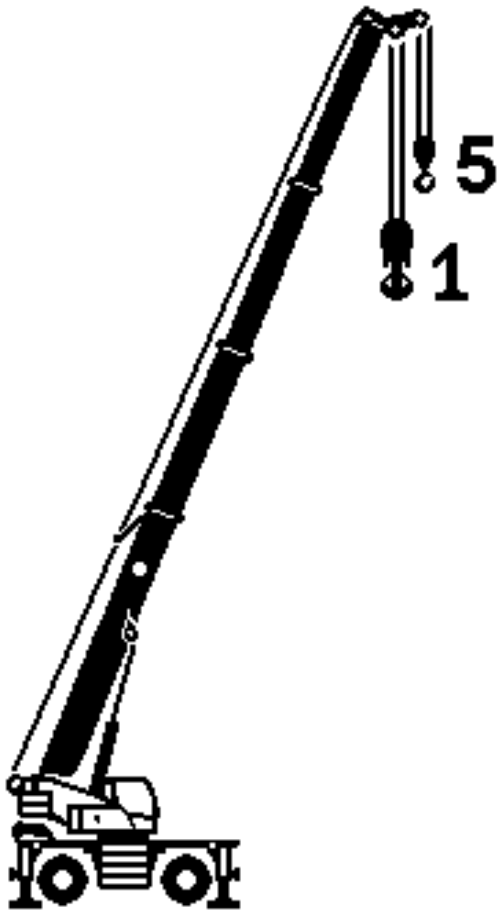
2x	12.6	11.6
3x	18.7	17.3
4x	24.7	23.1
5x	30.7	28.9
6x	36.6	34.7
7x	42.3	40.5
8x	48.0	46.2
9x	53.6	52.0
10x	59.2	57.8
11x	64.6	63.6
12x	69.9	69.4
13x	75.2	75.1
14x	80.4	80.4



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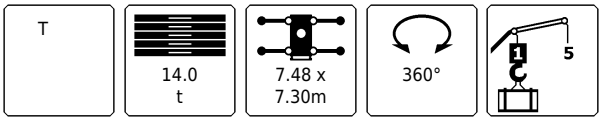

⚠ 107, 108

		t											
	m	**12.6**	**17.3**	**21.9**	**26.6**	**31.3**	**17.3**	**21.9**	**26.6**	**31.3**	**36.0**	**40.6**	**45.3**
	2.5	100.0											
	3.0	80.0	56.8	53.6			30.9	34.4					
	3.5	68.8	57.4	53.6	42.2		31.5	32.3					
	4.0	64.1	58.0	53.2	41.6		32.0	30.2	29.5				
	4.5	60.0	56.5	52.1	41.0		32.7	28.6	28.0				
	5.0	56.4	53.0	50.5	40.3	31.9	33.4	27.1	26.5	21.7			
	6.0	49.7	47.2	44.9	36.9	30.4	34.1	24.1	24.1	19.7	19.4		
	7.0	41.5	42.0	39.6	33.0	28.6	31.6	22.0	21.9	18.0	18.1	16.3	
	8.0	35.1	34.9	32.5	29.6	26.3	29.1	20.0	19.9	16.6	16.8	15.7	
	9.0	29.5	29.1	27.2	25.3	23.3	26.7	18.4	18.4	15.1	15.8	14.9	13.8
	10.0	24.0	24.5	23.3	21.7	20.1	24.5	17.1	17.0	14.0	14.8	14.1	13.3
	12.0		17.6	17.5	16.5	15.3	18.1	14.7	14.8	12.1	13.0	12.5	12.2
	14.0		13.3	13.2	12.6	12.1	13.8	13.0	12.9	10.5	11.6	11.1	11.1
	16.0			10.3	9.8	9.4		11.2	11.3	9.3	10.3	10.0	10.0
	18.0			8.2	7.7	7.3		9.1	9.4	8.2	9.2	8.8	8.5
	20.0				6.1	5.7			7.7	7.4	7.6	7.2	6.9
	22.0				4.9	4.5			6.5	6.4	6.3	6.0	5.7
	24.0				4.1	3.7			5.5	5.4	5.3	5.0	4.7
	26.0					3.1				4.6	4.5	4.2	4.0
	28.0					2.5				4.0	3.9	3.7	3.5
	30.0										3.4	3.2	3.0
	32.0										3.1	2.8	2.6
	34.0											2.5	2.2
	36.0											2.2	1.9
	38.0											1.9	1.7
	40.0												1.5
	42.0												1.2
	43.0												1.1
	0°	19.0	11.6	6.9	4.0	2.3	11.9	7.7	5.4	3.8	2.8	1.9	1.1
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1

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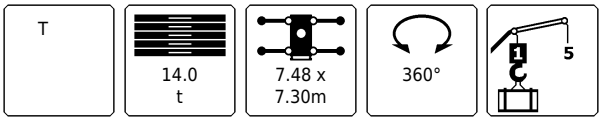

107, 108

	t												
m	**50.0**												
2.5													
3.0													
3.5													
4.0													
4.5													
5.0													
6.0													
7.0													
8.0													
9.0													
10.0	10.8												
12.0	10.5												
14.0	9.9												
16.0	9.0												
18.0	7.9												
20.0	6.5												
22.0	5.3												
24.0	4.3												
26.0	3.7												
28.0	3.1												
30.0	2.7												
32.0	2.3												
34.0	2.0												
36.0	1.7												
38.0	1.4												
40.0	1.2												
42.0	0.9												
43.0	0.8												
0°													
% 1	100+												
% 2	100+												
% 3	100+												
% 4	100+												
m/s	11.1												

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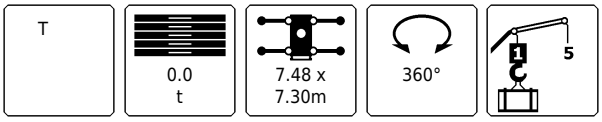

		t											
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	3.0	69.9	56.8	53.6			30.9	34.4					
	3.5	68.8	57.4	53.6	42.2		31.5	32.3					
	4.0	64.1	58.0	53.2	41.6		32.0	30.2	29.5				
	4.5	58.6	53.9	46.1	39.4		32.7	28.6	28.0				
	5.0	49.5	43.7	38.0	33.2	29.1	33.4	27.1	26.5	21.7			
	6.0	33.7	30.7	27.5	24.5	21.8	31.5	24.1	24.1	19.7	19.4		
	7.0	25.1	23.2	21.2	19.0	17.0	23.9	22.0	21.6	18.0	18.0	16.3	
	8.0	19.2	18.3	17.0	15.3	13.6	19.0	18.3	17.7	16.5	15.6	14.4	
	9.0	14.8	14.8	13.8	12.5	11.1	15.5	15.1	14.8	13.9	13.2	12.2	11.3
	10.0	11.7	11.9	11.5	10.4	9.2	12.5	12.7	12.6	11.9	11.3	10.5	9.7
	12.0		7.9	7.9	7.2	6.5	8.4	8.9	9.2	9.0	8.6	7.9	7.3
	14.0		5.4	5.4	4.8	4.5	5.9	6.3	6.6	6.7	6.5	6.1	5.6
	16.0			3.9	3.5	3.1		4.6	4.9	4.9	4.8	4.5	4.1
	18.0			2.9	2.5	2.2		3.6	3.8	3.8	3.7	3.4	3.2
	20.0				1.8	1.2			3.1	3.0	2.9	2.7	2.4
	22.0				1.1				2.5	2.4	2.4	2.1	1.9
	24.0								2.0	1.9	1.9	1.6	1.4
	26.0									1.6	1.5	1.2	0.9
	28.0									1.2	1.2	0.8	
	29.0									1.1	1.0		
	0°	10.6	4.5	2.3	0.4		4.9	2.9	2.0	1.1	0.3		
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1

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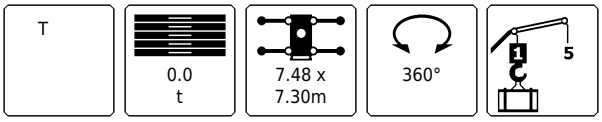

	t												
m	50.0												
3.0													
3.5													
4.0													
4.5													
5.0													
6.0													
7.0													
8.0													
9.0													
10.0	8.8												
12.0	6.5												
14.0	4.9												
16.0	3.7												
18.0	2.8												
20.0	2.1												
22.0	1.5												
24.0	0.9												
26.0													
28.0													
29.0													
0°													
% 1	100+												
% 2	100+												
% 3	100+												
% 4	100+												
m/s	11.1												

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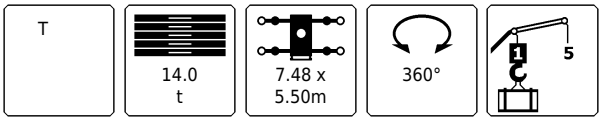

		t											
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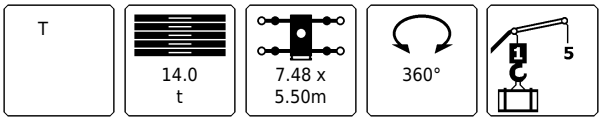
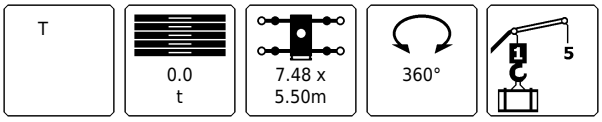
	3.0	69.9	56.8	53.6			30.9	34.4					
	3.5	68.8	57.4	53.6	42.2		31.5	32.3					
	4.0	63.9	58.0	53.2	41.6		32.0	30.2	29.5				
	4.5	58.1	53.3	47.6	40.5		32.7	28.6	28.0				
	5.0	50.2	45.7	41.1	37.0	31.6	33.4	27.1	26.5	21.7			
	6.0	37.6	34.8	32.0	29.2	26.5	33.9	24.1	24.1	19.7	19.4		
	7.0	29.8	27.8	25.9	23.7	21.7	28.5	22.0	21.9	18.0	18.1	16.3	
	8.0	23.8	23.0	21.5	19.8	18.2	23.6	20.0	19.9	16.6	16.8	15.7	
	9.0	19.3	19.3	18.2	16.9	15.4	19.8	18.4	18.4	15.1	15.8	14.9	13.8
	10.0	15.9	16.1	15.7	14.5	13.3	16.6	16.8	16.5	14.0	14.8	14.1	13.1
	12.0		11.6	11.6	11.0	10.1	12.1	12.5	12.7	12.1	11.9	11.2	10.6
	14.0		8.7	8.6	8.1	7.7	9.2	9.5	9.8	9.8	9.6	9.1	8.6
	16.0			6.6	6.1	5.7		7.4	7.7	7.7	7.6	7.2	6.9
	18.0			5.1	4.7	4.3		5.9	6.2	6.1	6.0	5.7	5.4
	20.0				3.7	3.4			5.0	5.0	4.9	4.6	4.3
	22.0				3.0	2.7			4.2	4.1	4.1	3.8	3.6
	24.0				2.4	2.1			3.6	3.5	3.4	3.2	3.0
	26.0					1.5				3.0	2.9	2.7	2.5
	28.0					1.0				2.6	2.5	2.3	2.1
	30.0										2.2	1.9	1.7
	32.0										1.9	1.6	1.4
	34.0											1.4	1.2
	36.0											1.1	0.9
	38.0											0.9	
	0°	14.6	7.6	4.2	2.4	0.8	8.0	4.9	3.5	2.4	1.7	0.8	
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1

T



		t
m		50.0
3.0		
3.5		
4.0		
4.5		
5.0		
6.0		
7.0		
8.0		
9.0		
10.0		10.8
12.0		9.8
14.0		7.8
16.0		6.3
18.0		5.0
20.0		4.0
22.0		3.3
24.0		2.7
26.0		2.2
28.0		1.8
30.0		1.4
32.0		1.1
34.0		0.8
36.0		
38.0		
0°		
%	1	100+
%	2	100+
%	3	100+
%	4	100+
m/s		11.1

T



		t											
	m	**12.6**	**17.3**	**21.9**	**26.6**	**31.3**	**17.3**	**21.9**	**26.6**	**31.3**	**36.0**	**40.6**	**45.3**
	3.0	67.8	56.2	46.3			30.9	34.4					
	3.5	50.5	42.7	36.4	30.8		31.5	32.3					
	4.0	38.8	33.8	29.6	25.5		32.0	30.2	28.4				
	4.5	31.1	27.7	24.6	21.5		28.5	26.1	24.3				
	5.0	25.5	23.4	20.9	18.4	16.2	24.2	22.4	21.0	19.3			
	6.0	18.5	17.3	15.8	14.0	12.3	18.0	17.1	16.4	15.2	14.1		
	7.0	14.0	13.4	12.3	11.0	9.6	14.0	13.6	13.2	12.3	11.5	10.6	
	8.0	10.6	10.6	9.9	8.8	7.6	11.2	11.1	10.9	10.2	9.6	8.8	
	9.0	8.1	8.3	8.0	7.1	6.1	8.8	9.1	9.2	8.6	8.1	7.4	6.8
	10.0	6.2	6.5	6.5	5.8	4.9	7.0	7.5	7.7	7.3	6.9	6.3	5.8
	12.0		4.1	4.1	3.7	3.1	4.5	4.9	5.2	5.3	5.0	4.6	4.2
	14.0		2.8	2.8	2.4	1.7	3.2	3.5	3.8	3.8	3.7	3.4	3.0
	16.0			1.9	1.3			2.6	2.8	2.8	2.7	2.5	2.2
	18.0			1.0				1.9	2.1	2.1	2.0	1.8	1.4
	20.0								1.6	1.5	1.5	1.1	
	22.0								1.1	1.0	0.9		
	23.0								0.9				
	0°	5.6	2.3	0.5			2.7	1.4	0.7				
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1

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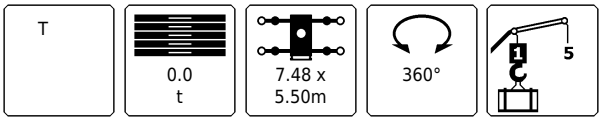
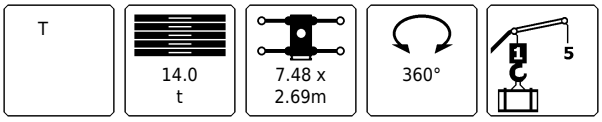


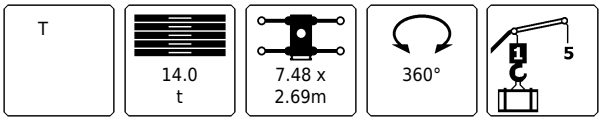
		t
m		50.0
3.0		
3.5		
4.0		
4.5		
5.0		
6.0		
7.0		
8.0		
9.0		
10.0		5.0
12.0		3.5
14.0		2.4
16.0		1.6
18.0		
20.0		
22.0		
23.0		
0°		
%	1	100+
%	2	100+
%	3	100+
%	4	100+
m/s		11.1

T



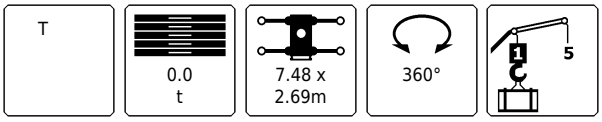
		t											
	m	**12.6**	**17.3**	**21.9**	**26.6**	**31.3**	**17.3**	**21.9**	**26.6**	**31.3**	**36.0**	**40.6**	**45.3**
	4.5	22.6											
	5.0	19.6											
	6.0	15.3	14.6										
	7.0	12.2	11.9	11.1	10.0		12.4	12.1					
	8.0	9.6	9.8	9.2	8.3	7.3	10.2	10.2					
	9.0	7.7	7.9	7.7	6.9	6.0	8.3	8.6	8.7				
	10.0	6.2	6.4	6.4	5.8	5.0	6.9	7.3	7.5	7.1			
	12.0		4.3	4.3	3.9	3.4	4.7	5.1	5.3	5.4	5.2	4.8	4.4
	14.0		3.2	3.1	2.8	2.2	3.5	3.7	4.0	4.0	3.9	3.6	3.3
	16.0			2.3	1.8	1.0		2.9	3.1	3.1	3.0	2.8	2.5
	18.0			1.6	0.9			2.2	2.4	2.4	2.3	2.1	1.8
	20.0								1.9	1.9	1.8	1.5	1.1
	22.0								1.5	1.4	1.4	0.9	
	24.0								1.2	1.0	0.9		
	0°	5.7	2.7	1.1			3.0	1.8	1.1	0.2			
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1

T

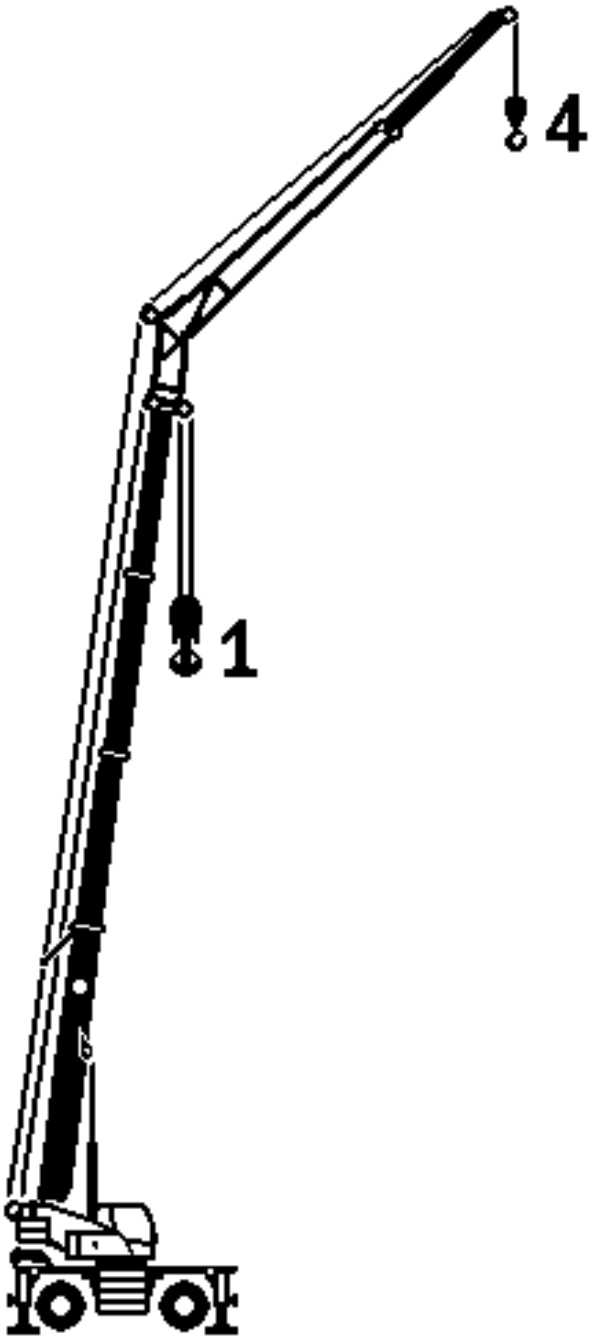


		t											
m		50.0											
4.5													
5.0													
6.0													
7.0													
8.0													
9.0													
10.0													
12.0													
14.0		2.8											
16.0		2.0											
18.0		1.3											
20.0													
22.0													
24.0													
0°													
%	1	100+											
%	2	100+											
%	3	100+											
%	4	100+											
	m/s	11.1											

T



		t											
	m	12.6	17.3	21.9	26.6	31.3	17.3	21.9	26.6	31.3	36.0	40.6	45.3
	3.0	15.4	13.8	12.0			14.4	13.3					
	3.5	12.2	11.2	9.9	8.3		11.8	11.1					
	4.0	9.9	9.2	8.2	6.9		9.8	9.3	9.0				
	4.5	8.1	7.6	6.8	5.7		8.2	7.9	7.8				
	5.0	6.6	6.4	5.7	4.8	3.5	7.0	6.8	6.7	6.2			
	6.0	4.6	4.5	4.0	3.0	1.8	5.0	5.1	5.2	4.7	4.3		
	7.0	2.7	2.9	2.5	1.6	0.9	3.6	3.8	4.0	3.7	3.3	2.6	
	8.0	1.5	1.6	1.4			2.3	2.7	3.1	2.7	2.4	1.7	
	9.0		0.9				1.4	1.7	2.1	1.8	1.6	1.1	
	10.0							1.1	1.4	1.2	1.1		
	11.0								0.9				
	0°	0.5											
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1



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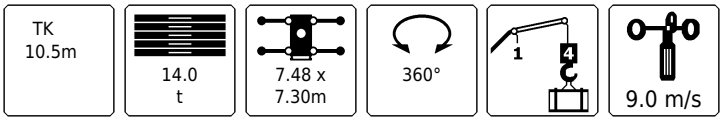
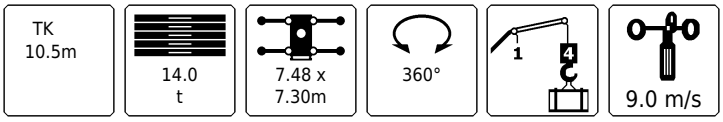


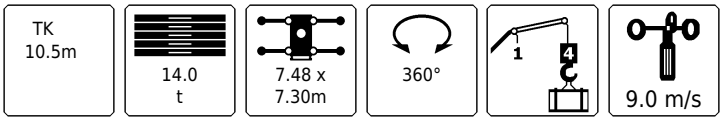
		t											
	m	**12.6**	**12.6**	**12.6**	**17.3**	**17.3**	**17.3**	**21.9**	**21.9**	**21.9**	**26.6**	**26.6**	**26.6**
	3.0	11.4			11.4			11.4					
	3.5	11.4			11.4			11.4					
	4.0	11.4			11.4			11.4			11.4		
	4.5	11.4			11.4			11.4			11.4		
	5.0	11.4	9.2		11.4			11.4			11.4		
	6.0	11.2	9.2		11.4	9.2		11.4			11.4		
	7.0	10.8	8.8		11.4	9.2		11.4	9.2		11.4		
	8.0	10.2	8.3	6.8	11.1	8.9		11.4	9.2		11.4	9.2	
	9.0	9.5	7.9	6.6	10.7	8.5	6.8	11.2	8.9	6.8	11.4	9.2	
	10.0	8.8	7.5	6.4	10.2	8.1	6.6	11.0	8.6	6.8	11.4	9.0	6.8
	12.0	7.5	6.8	6.1	9.0	7.5	6.3	10.3	8.0	6.5	10.9	8.4	6.7
	14.0	6.4	6.2	5.8	8.0	6.9	6.0	9.2	7.4	6.2	10.3	7.9	6.4
	16.0	5.6	5.5	5.4	7.0	6.4	5.8	8.3	7.0	6.0	9.4	7.4	6.2
	18.0	4.9	5.1	5.1	6.1	5.9	5.6	7.4	6.6	5.9	8.5	7.0	6.0
	20.0	4.4	4.7		5.5	5.4	5.2	6.6	6.1	5.7	7.1	6.7	5.9
	22.0				4.9	5.0	5.0	6.0	5.7	5.4	5.8	6.2	5.7
	24.0				4.5	4.8		5.3	5.3	5.2	4.8	5.1	5.4
	26.0							4.5	4.7	4.8	4.1	4.3	4.5
	28.0							3.9	4.0		3.5	3.7	3.8
	30.0							3.5			3.0	3.2	3.2
	32.0										2.6	2.7	
	34.0										2.3	2.3	
	36.0												
	38.0												
	40.0												
	42.0												
	44.0												
	46.0												
	48.0												
	0°	4.2	4.7	4.9	4.2			3.4			2.2		
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50+	50+	50+
%	2	0+	0+	0+	0+	0+	0+	50+	50+	50+	50+	50+	50+
%	3	0+	0+	0+	50+	50+	50+	50+	50+	50+	50+	50+	50+
%	4	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



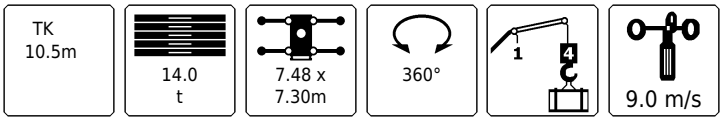
		t											
	m	31.3	31.3	31.3	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0				11.4								
	3.5				11.4			11.4					
	4.0				11.4			11.4					
	4.5				11.4			11.4			11.4		
	5.0				11.4			11.4			11.4		
	6.0	11.4			11.4	9.2		11.4			11.4		
	7.0	11.4			11.4	9.2		11.4	9.2		11.4		
	8.0	11.4			11.1	8.9		11.4	9.2		11.4	9.2	
	9.0	11.4	9.2		10.7	8.5	6.8	11.2	8.9		11.4	9.2	
	10.0	11.4	9.2		10.2	8.1	6.6	11.0	8.6	6.8	11.4	8.9	
	12.0	11.3	8.8	6.8	9.0	7.5	6.3	9.8	8.0	6.5	10.4	8.3	6.6
	14.0	10.8	8.2	6.6	8.0	6.9	6.0	8.6	7.4	6.2	9.2	7.8	6.4
	16.0	9.7	7.8	6.3	7.0	6.4	5.8	7.5	6.9	6.0	8.2	7.3	6.1
	18.0	8.1	7.4	6.2	6.1	5.9	5.6	6.6	6.2	5.8	7.4	6.7	6.0
	20.0	6.5	7.0	6.0	5.5	5.4	5.2	5.9	5.6	5.4	6.6	6.1	5.7
	22.0	5.2	5.8	5.9	4.9	5.0	5.0	5.3	5.1	5.0	6.0	5.7	5.4
	24.0	4.3	4.7	5.0	4.5	4.8		4.8	4.6	4.6	5.4	5.2	5.1
	26.0	3.6	3.9	4.2				4.4	4.3	4.3	4.9	4.8	4.8
	28.0	3.1	3.3	3.5				4.1	4.1		4.3	4.4	4.5
	30.0	2.6	2.8	2.9				3.9			3.8	4.0	4.0
	32.0	2.2	2.4	2.4							3.4	3.5	
	34.0	1.8	2.0								3.1	3.1	
	36.0	1.4	1.6										
	38.0	1.1	1.2										
	40.0												
	42.0												
	44.0												
	46.0												
	48.0												
	0°	0.9			4.2			3.8			3.0		
%	1	100+	100+	100+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	2	50+	50+	50+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	3	50+	50+	50+	0+	0+	0+	0+	0+	0+	50	50	50
%	4	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



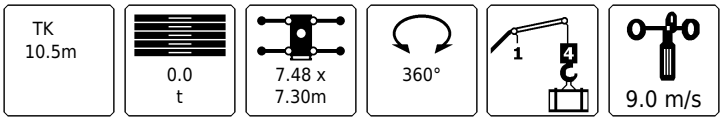
		t											
	m	31.3	31.3	31.3	36.0	36.0	36.0	40.6	40.6	40.6	45.3	45.3	45.3
	3.0												
	3.5												
	4.0												
	4.5												
	5.0												
	6.0	10.8											
	7.0	10.8			9.8								
	8.0	10.8			9.8			8.5					
	9.0	10.6			9.7			8.4			7.3		
	10.0	10.1	8.6		9.7			8.4			7.3		
	12.0	8.9	8.0	6.5	8.9	7.9		8.2	7.5		7.3		
	14.0	7.8	7.2	6.3	8.0	7.3	6.3	7.6	7.0		7.1	6.7	
	16.0	7.0	6.5	6.0	7.2	6.6	6.1	7.0	6.5	6.0	6.7	6.3	5.8
	18.0	6.1	5.8	5.6	6.5	6.1	5.7	6.4	6.0	5.5	6.2	5.9	5.4
	20.0	5.6	5.3	5.1	5.9	5.5	5.3	5.9	5.5	5.2	5.8	5.5	5.1
	22.0	5.0	4.8	4.7	5.4	5.1	4.9	5.4	5.1	4.8	5.4	5.1	4.8
	24.0	4.5	4.4	4.4	5.0	4.7	4.6	4.9	4.8	4.6	4.7	4.8	4.5
	26.0	4.1	4.1	4.1	4.5	4.4	4.3	4.3	4.5	4.3	4.0	4.3	4.3
	28.0	3.8	3.8	3.8	4.0	4.1	4.1	3.7	4.0	4.1	3.5	3.8	4.0
	30.0	3.5	3.5	3.5	3.5	3.7	3.8	3.2	3.5	3.7	3.0	3.2	3.5
	32.0	3.2	3.3	3.3	3.1	3.3	3.4	2.8	3.0	3.2	2.6	2.8	3.0
	34.0	2.9	3.0		2.7	2.9	3.0	2.5	2.6	2.8	2.2	2.4	2.6
	36.0	2.5	2.6		2.4	2.5	2.6	2.1	2.3	2.4	1.9	2.1	2.3
	38.0	2.3	2.3		2.1	2.2		1.9	2.0	2.1	1.7	1.8	1.9
	40.0				1.9	2.0		1.6	1.7	1.8	1.4	1.5	1.7
	42.0				1.7	1.7		1.4	1.5		1.2	1.3	1.4
	44.0				1.5			1.2	1.3		1.0	1.1	1.2
	46.0							1.0	1.0		0.7	0.9	
	48.0							0.8				0.6	
	0°	2.1			1.5			0.7					
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50	50	50
%	2	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
%	3	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
%	4	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



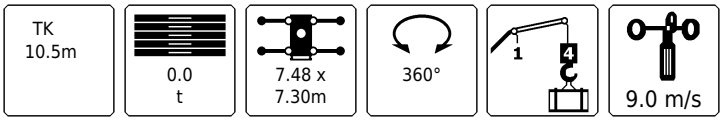
	t											
m	50.0	50.0	50.0									
3.0												
3.5												
4.0												
4.5												
5.0												
6.0												
7.0												
8.0												
9.0												
10.0	5.6											
12.0	5.7											
14.0	5.7											
16.0	5.6	5.5										
18.0	5.4	5.3	5.2									
20.0	5.1	5.0	4.9									
22.0	4.9	4.7	4.6									
24.0	4.4	4.5	4.4									
26.0	3.8	4.1	4.2									
28.0	3.2	3.5	3.7									
30.0	2.7	3.0	3.2									
32.0	2.3	2.6	2.7									
34.0	2.0	2.2	2.4									
36.0	1.7	1.9	2.0									
38.0	1.4	1.6	1.7									
40.0	1.1	1.3	1.4									
42.0	0.9	1.1	1.2									
44.0	0.6	0.8	0.9									
46.0			0.6									
48.0												
0°												
% 1	100+	100+	100+									
% 2	100+	100+	100+									
% 3	100+	100+	100+									
% 4	100+	100+	100+									
°	0.0	20.0	40.0									

TK



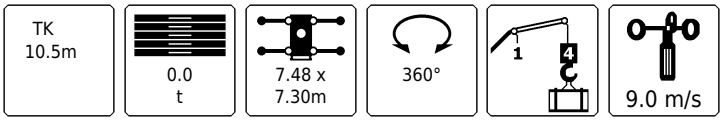
		t											
	m	12.6	12.6	12.6	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0	11.4			11.4			11.4					
	3.5	11.4			11.4			11.4					
	4.0	11.4			11.4			11.4			11.4		
	4.5	11.4			11.4			11.4			11.4		
	5.0	11.4	9.2		11.4			11.4			11.4		
	6.0	11.2	9.2		11.4	9.2		11.4			11.4		
	7.0	10.8	8.8		11.4	9.2		11.4	9.2		11.4		
	8.0	10.2	8.3	6.8	11.1	8.9		11.4	9.2		11.4	9.2	
	9.0	9.5	7.9	6.6	10.7	8.5	6.8	11.2	8.9	6.8	11.4	9.2	
	10.0	8.8	7.5	6.4	10.2	8.1	6.6	11.0	8.6	6.8	10.3	9.0	6.8
	12.0	7.5	6.8	6.1	9.0	7.5	6.3	8.7	8.0	6.5	7.7	8.4	6.7
	14.0	6.4	6.2	5.8	7.2	6.9	6.0	6.7	7.3	6.2	5.8	6.7	6.4
	16.0	5.6	5.5	5.4	5.4	5.9	5.8	4.9	5.6	6.0	4.4	5.1	5.7
	18.0	4.4	4.7	4.8	4.1	4.5	4.8	3.8	4.2	4.6	3.3	3.8	4.3
	20.0	3.6	3.7		3.3	3.6	3.8	3.0	3.4	3.6	2.6	3.0	3.3
	22.0				2.7	2.9	3.0	2.4	2.7	2.9	1.9	2.3	2.6
	24.0				2.2	2.3		1.9	2.1	2.3	1.4	1.8	2.0
	26.0							1.5	1.7	1.7	0.9	1.3	1.5
	28.0							1.1	1.2			0.7	0.9
	30.0							0.7					
	32.0												
	34.0												
	0°	3.4	3.4	3.6	1.9			0.7					
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50+	50+	50+
%	2	0+	0+	0+	0+	0+	0+	50+	50+	50+	50+	50+	50+
%	3	0+	0+	0+	50+	50+	50+	50+	50+	50+	50+	50+	50+
%	4	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



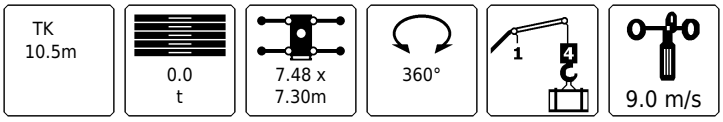
		t											
	m	31.3	31.3	31.3	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0				11.4								
	3.5				11.4			11.4					
	4.0				11.4			11.4					
	4.5				11.4			11.4			11.4		
	5.0				11.4			11.4			11.4		
	6.0	11.4			11.4	9.2		11.4			11.4		
	7.0	11.4			11.4	9.2		11.4	9.2		11.4		
	8.0	11.4			11.1	8.9		11.4	9.2		11.4	9.2	
	9.0	10.7	9.2		10.7	8.5	6.8	11.2	8.9		11.4	9.2	
	10.0	9.1	9.2		10.2	8.1	6.6	11.0	8.6	6.8	11.4	8.9	
	12.0	6.6	7.8	6.8	9.0	7.5	6.3	9.4	8.0	6.5	9.1	8.3	6.6
	14.0	4.9	5.9	6.6	7.5	6.9	6.0	7.4	7.4	6.2	7.2	7.6	6.4
	16.0	3.6	4.5	5.2	5.6	6.1	5.8	5.5	6.1	6.0	5.6	6.1	6.1
	18.0	2.7	3.4	3.9	4.4	4.7	5.0	4.3	4.7	5.0	4.3	4.7	5.1
	20.0	1.9	2.5	3.0	3.5	3.8	3.9	3.5	3.8	4.0	3.5	3.8	4.1
	22.0	1.2	1.8	2.2	2.9	3.1	3.2	2.8	3.1	3.2	2.8	3.1	3.3
	24.0		1.2	1.6	2.4	2.5		2.3	2.5	2.6	2.3	2.6	2.7
	26.0			0.9				1.9	2.0	2.1	1.9	2.1	2.2
	28.0							1.6	1.7		1.6	1.7	1.8
	30.0							1.3			1.3	1.4	1.5
	32.0										1.0	1.1	
	34.0										0.7	0.8	
	0°				2.1			1.2			0.7		
%	1	100+	100+	100+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	2	50+	50+	50+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	3	50+	50+	50+	0+	0+	0+	0+	0+	0+	50	50	50
%	4	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



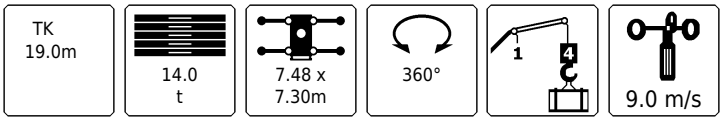
		t											
	m	31.3	31.3	31.3	36.0	36.0	36.0	40.6	40.6	40.6	45.3	45.3	45.3
	3.0												
	3.5												
	4.0												
	4.5												
	5.0												
	6.0	10.8											
	7.0	10.8			9.8								
	8.0	10.8			9.8			8.5					
	9.0	10.6			9.7			8.4			7.3		
	10.0	10.1	8.6		9.7			8.4			7.3		
	12.0	8.5	8.0	6.5	8.0	7.9		7.3	7.5		6.6		
	14.0	6.7	7.2	6.3	6.3	7.0	6.3	5.7	6.4		5.1	5.9	
	16.0	5.2	5.9	6.0	5.0	5.6	6.1	4.5	5.1	5.8	4.0	4.7	5.4
	18.0	4.1	4.5	4.9	3.9	4.3	4.7	3.5	4.1	4.5	3.1	3.7	4.3
	20.0	3.3	3.6	3.9	3.1	3.5	3.8	2.8	3.2	3.6	2.4	2.9	3.4
	22.0	2.6	3.0	3.2	2.5	2.8	3.1	2.2	2.6	2.9	1.8	2.3	2.7
	24.0	2.1	2.4	2.6	2.0	2.3	2.5	1.7	2.0	2.3	1.3	1.7	2.1
	26.0	1.7	1.9	2.1	1.6	1.8	2.0	1.2	1.6	1.9	0.7	1.2	1.6
	28.0	1.4	1.6	1.7	1.2	1.5	1.6	0.7	1.2	1.4		0.7	1.2
	30.0	1.1	1.3	1.4	0.9	1.2	1.3		0.7	1.1			0.7
	32.0	0.7	0.9	1.0		0.8	1.0			0.6			
	34.0						0.6						
	0°												
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50	50	50
%	2	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
%	3	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
%	4	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



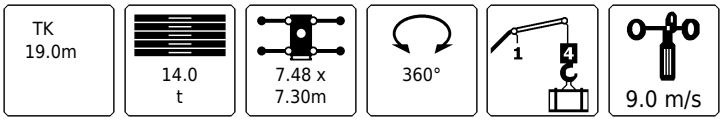
		t											
	m	**50.0**	**50.0**	**50.0**									
	3.0												
	3.5												
	4.0												
	4.5												
	5.0												
	6.0												
	7.0												
	8.0												
	9.0												
	10.0	5.6											
	12.0	5.6											
	14.0	4.6											
	16.0	3.5	4.2										
	18.0	2.6	3.2	3.8									
	20.0	1.9	2.5	3.0									
	22.0	1.3	1.9	2.3									
	24.0	0.7	1.3	1.7									
	26.0		0.8	1.2									
	28.0			0.7									
	30.0												
	32.0												
	34.0												
	0°												
%	1	100+	100+	100+									
%	2	100+	100+	100+									
%	3	100+	100+	100+									
%	4	100+	100+	100+									
	°	0.0	20.0	40.0									

TK



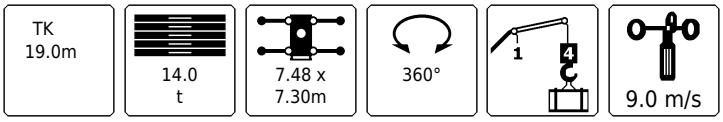
		t											
	m	12.6	12.6	12.6	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0	3.6											
	3.5	3.6			3.6								
	4.0	3.7			3.6								
	4.5	3.7			3.6			3.6					
	5.0	3.7			3.7			3.6					
	6.0	3.7			3.7			3.7			3.6		
	7.0	3.7			3.7			3.7			3.7		
	8.0	3.6			3.7			3.7			3.7		
	9.0	3.5	3.0		3.6			3.7			3.7		
	10.0	3.4	3.0		3.5	3.0		3.7			3.7		
	12.0	3.2	2.9		3.4	3.0		3.5	3.0		3.6	3.0	
	14.0	3.1	2.8	2.4	3.2	2.9		3.4	3.0		3.5	3.0	
	16.0	2.9	2.6	2.4	3.1	2.8	2.4	3.2	2.8	2.4	3.4	2.9	
	18.0	2.7	2.5	2.3	2.9	2.6	2.3	3.1	2.7	2.4	3.2	2.8	2.4
	20.0	2.5	2.4	2.2	2.8	2.5	2.3	3.0	2.6	2.3	3.1	2.7	2.3
	22.0	2.3	2.3	2.2	2.6	2.4	2.2	2.9	2.5	2.3	3.0	2.6	2.3
	24.0	2.1	2.1	2.2	2.4	2.3	2.2	2.7	2.4	2.2	2.9	2.5	2.2
	26.0	1.9	2.0	2.1	2.2	2.2	2.2	2.5	2.4	2.2	2.8	2.4	2.2
	28.0	1.8	1.8		2.1	2.1	2.1	2.4	2.3	2.2	2.6	2.4	2.2
	30.0				1.9	2.0	2.0	2.2	2.2	2.2	2.5	2.3	2.2
	32.0				1.8	1.8		2.1	2.1	2.1	2.3	2.2	2.2
	34.0				1.7			1.9	2.0	2.0	2.2	2.1	2.1
	36.0							1.8	1.9		2.1	2.0	2.1
	38.0							1.7	1.8		1.9	1.9	2.0
	40.0										1.8	1.9	
	42.0										1.6	1.6	
	44.0												
	46.0												
	48.0												
	50.0												
	52.0												
	54.0												
	0°	1.7	1.8	1.9	1.7			1.7			1.4		
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50+	50+	50+
%	2	0+	0+	0+	0+	0+	0+	50+	50+	50+	50+	50+	50+
%	3	0+	0+	0+	50+	50+	50+	50+	50+	50+	50+	50+	50+
%	4	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



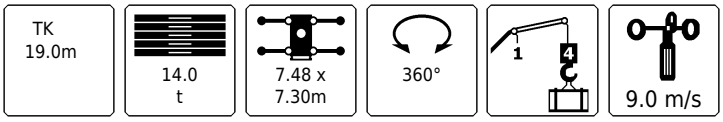
		t											
	m	31.3	31.3	31.3	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0												
	3.5				3.6								
	4.0				3.6								
	4.5				3.6			3.6					
	5.0				3.7			3.6					
	6.0	3.6			3.7			3.7			3.6		
	7.0	3.6			3.7			3.7			3.7		
	8.0	3.7			3.7			3.7			3.7		
	9.0	3.7			3.6			3.7			3.7		
	10.0	3.7			3.5	3.0		3.7			3.7		
	12.0	3.7			3.4	3.0		3.5	3.0		3.6	3.0	
	14.0	3.6	3.0		3.2	2.9		3.4	2.9		3.5	2.9	
	16.0	3.5	2.9		3.1	2.7	2.4	3.2	2.8	2.4	3.4	2.8	
	18.0	3.4	2.8	2.4	2.9	2.6	2.3	3.1	2.7	2.3	3.2	2.7	2.3
	20.0	3.2	2.7	2.3	2.8	2.5	2.3	3.0	2.6	2.3	3.1	2.6	2.3
	22.0	3.1	2.6	2.3	2.6	2.4	2.2	2.8	2.5	2.2	3.0	2.5	2.2
	24.0	3.0	2.5	2.2	2.4	2.3	2.2	2.7	2.4	2.2	2.8	2.4	2.2
	26.0	2.9	2.5	2.2	2.2	2.2	2.2	2.5	2.3	2.2	2.7	2.4	2.2
	28.0	2.8	2.4	2.2	2.1	2.1	2.1	2.4	2.3	2.2	2.6	2.3	2.2
	30.0	2.7	2.3	2.2	1.9	2.0	2.0	2.2	2.2	2.2	2.5	2.3	2.1
	32.0	2.5	2.3	2.2	1.8	1.8		2.1	2.1	2.1	2.3	2.2	2.1
	34.0	2.2	2.2	2.1	1.7			1.9	2.0	2.0	2.2	2.1	2.1
	36.0	1.9	2.2	2.1				1.8	1.9		2.1	2.0	2.1
	38.0	1.6	1.9	2.0				1.7	1.8		1.9	1.9	2.0
	40.0	1.3	1.6	1.8							1.8	1.9	
	42.0	1.1	1.3	1.4							1.8	1.8	
	44.0	0.8	1.0										
	46.0	0.6	0.7										
	48.0												
	50.0												
	52.0												
	54.0												
	0°	0.4			1.7			1.7			1.7		
%	1	100+	100+	100+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	2	50+	50+	50+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	3	50+	50+	50+	0+	0+	0+	0+	0+	0+	50	50	50
%	4	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



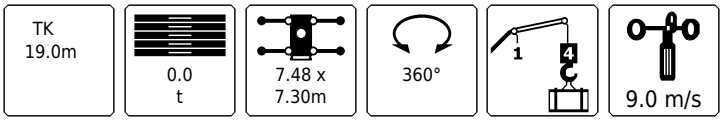
	t											
m	31.3	31.3	31.3	36.0	36.0	36.0	40.6	40.6	40.6	45.3	45.3	45.3
3.0												
3.5												
4.0												
4.5												
5.0												
6.0												
7.0	3.6											
8.0	3.7			3.7								
9.0	3.7			3.7			3.5					
10.0	3.7			3.7			3.5			3.2		
12.0	3.7			3.7			3.6			3.3		
14.0	3.6	2.9		3.6			3.5			3.3		
16.0	3.5	2.8		3.5	2.8		3.4	2.8		3.3		
18.0	3.3	2.7		3.3	2.7		3.3	2.7		3.2	2.7	
20.0	3.1	2.6	2.3	3.2	2.6	2.3	3.2	2.6		3.1	2.6	
22.0	3.0	2.5	2.3	3.1	2.5	2.3	3.1	2.6	2.2	3.0	2.5	2.2
24.0	2.9	2.5	2.2	2.9	2.5	2.2	2.9	2.5	2.2	2.9	2.5	2.2
26.0	2.8	2.4	2.2	2.8	2.4	2.2	2.8	2.4	2.2	2.8	2.4	2.2
28.0	2.7	2.3	2.2	2.7	2.4	2.2	2.7	2.4	2.2	2.7	2.4	2.2
30.0	2.5	2.3	2.1	2.6	2.3	2.2	2.7	2.3	2.2	2.7	2.3	2.1
32.0	2.5	2.2	2.1	2.5	2.3	2.1	2.6	2.3	2.1	2.6	2.3	2.1
34.0	2.4	2.2	2.1	2.5	2.2	2.1	2.5	2.3	2.1	2.4	2.3	2.1
36.0	2.3	2.2	2.1	2.4	2.2	2.1	2.3	2.2	2.1	2.1	2.2	2.1
38.0	2.2	2.1	2.1	2.3	2.2	2.1	2.1	2.2	2.1	1.8	2.1	2.1
40.0	2.1	2.0	2.0	2.1	2.2	2.1	1.8	2.1	2.1	1.6	1.9	2.1
42.0	1.9	1.9	2.0	1.9	2.0	2.1	1.6	1.8	2.0	1.4	1.6	1.8
44.0	1.8	1.9		1.7	1.8	1.9	1.4	1.6	1.7	1.2	1.4	1.6
46.0	1.6	1.7		1.5	1.6	1.7	1.2	1.4	1.5	1.0	1.2	1.4
48.0	1.5			1.3	1.4		1.0	1.2	1.3	0.8	1.0	1.2
50.0				1.1	1.2		0.8	1.0			0.8	1.0
52.0				1.0			0.7	0.8			0.6	0.7
54.0								0.6				
0°	1.5			0.9			0.3					
% 1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50	50	50
% 2	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
% 3	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
% 4	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



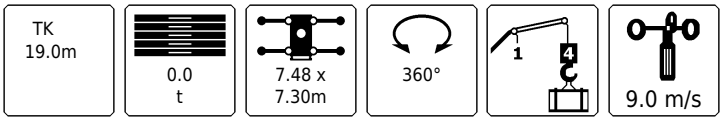
		t											
m		**50.0**	**50.0**	**50.0**									
3.0													
3.5													
4.0													
4.5													
5.0													
6.0													
7.0													
8.0													
9.0													
10.0													
12.0		2.9											
14.0		2.9											
16.0		3.0											
18.0		3.0											
20.0		2.9	2.6										
22.0		2.9	2.5										
24.0		2.8	2.5	2.2									
26.0		2.8	2.4	2.2									
28.0		2.7	2.4	2.1									
30.0		2.6	2.3	2.1									
32.0		2.4	2.3	2.1									
34.0		2.1	2.2	2.1									
36.0		1.8	2.1	2.1									
38.0		1.5	1.9	2.1									
40.0		1.3	1.6	1.9									
42.0		1.1	1.4	1.6									
44.0		0.8	1.2	1.4									
46.0			0.9	1.1									
48.0			0.7	0.9									
50.0				0.7									
52.0													
54.0													
0°													
%	1	100+	100+	100+									
%	2	100+	100+	100+									
%	3	100+	100+	100+									
%	4	100+	100+	100+									
°		0.0	20.0	40.0									

TK



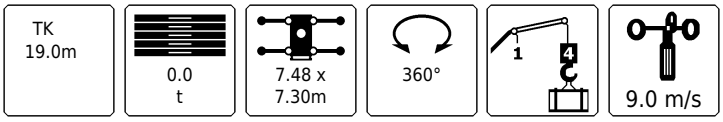
	t											
m	12.6	12.6	12.6	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
3.0	3.6											
3.5	3.6			3.6								
4.0	3.7			3.6								
4.5	3.7			3.6			3.6					
5.0	3.7			3.7			3.6					
6.0	3.7			3.7			3.7			3.6		
7.0	3.7			3.7			3.7			3.7		
8.0	3.6			3.7			3.7			3.7		
9.0	3.5	3.0		3.6			3.7			3.7		
10.0	3.4	3.0		3.5	3.0		3.7			3.7		
12.0	3.2	2.9		3.4	3.0		3.5	3.0		3.6	3.0	
14.0	3.1	2.8	2.4	3.2	2.9		3.4	3.0		3.5	3.0	
16.0	2.9	2.6	2.4	3.1	2.8	2.4	3.2	2.8	2.4	3.4	2.9	
18.0	2.7	2.5	2.3	2.9	2.6	2.3	3.1	2.7	2.4	3.2	2.8	2.4
20.0	2.5	2.4	2.2	2.8	2.5	2.3	3.0	2.6	2.3	3.0	2.7	2.3
22.0	2.3	2.3	2.2	2.6	2.4	2.2	2.8	2.5	2.3	2.4	2.6	2.3
24.0	2.1	2.1	2.2	2.4	2.3	2.2	2.4	2.4	2.2	1.9	2.5	2.2
26.0	1.9	2.0	2.1	2.2	2.2	2.2	1.9	2.3	2.2	1.5	2.0	2.2
28.0	1.8	1.8		1.9	2.1	2.1	1.6	1.9	2.2	1.1	1.6	2.0
30.0				1.6	1.8	1.9	1.3	1.6	1.8	0.7	1.3	1.6
32.0				1.3	1.5		1.0	1.3	1.5		0.9	1.2
34.0				1.1			0.6	1.0	1.1			0.8
36.0												
38.0												
39.0												
0°	1.7	1.8	1.9	1.1			0.2					
% 1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50+	50+	50+
% 2	0+	0+	0+	0+	0+	0+	50+	50+	50+	50+	50+	50+
% 3	0+	0+	0+	50+	50+	50+	50+	50+	50+	50+	50+	50+
% 4	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+
°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



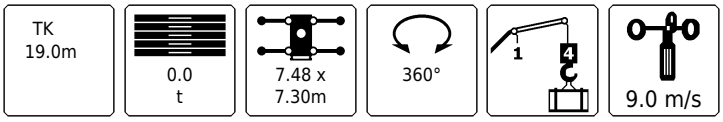
		t											
	m	31.3	31.3	31.3	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0												
	3.5				3.6								
	4.0				3.6								
	4.5				3.6			3.6					
	5.0				3.7			3.6					
	6.0	3.6			3.7			3.7			3.6		
	7.0	3.6			3.7			3.7			3.7		
	8.0	3.7			3.7			3.7			3.7		
	9.0	3.7			3.6			3.7			3.7		
	10.0	3.7			3.5	3.0		3.7			3.7		
	12.0	3.7			3.4	3.0		3.5	3.0		3.6	3.0	
	14.0	3.6	3.0		3.2	2.9		3.4	2.9		3.5	2.9	
	16.0	3.5	2.9		3.1	2.7	2.4	3.2	2.8	2.4	3.4	2.8	
	18.0	3.1	2.8	2.4	2.9	2.6	2.3	3.1	2.7	2.3	3.2	2.7	2.3
	20.0	2.4	2.7	2.3	2.8	2.5	2.3	3.0	2.6	2.3	3.1	2.6	2.3
	22.0	1.8	2.6	2.3	2.6	2.4	2.2	2.8	2.5	2.2	3.0	2.5	2.2
	24.0	1.2	2.1	2.2	2.4	2.3	2.2	2.7	2.4	2.2	2.7	2.4	2.2
	26.0	0.7	1.6	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.4	2.2
	28.0		1.1	1.7	2.0	2.1	2.1	1.9	2.2	2.2	1.9	2.2	2.2
	30.0		0.6	1.3	1.7	1.9	2.0	1.6	1.9	2.1	1.6	1.9	2.1
	32.0			0.8	1.5	1.6		1.4	1.6	1.7	1.3	1.6	1.8
	34.0				1.3			1.1	1.3	1.4	1.1	1.3	1.5
	36.0							0.9	1.0		0.8	1.1	1.2
	38.0							0.7	0.7			0.8	0.9
	39.0											0.7	
	0°				1.3			0.6			0.2		
%	1	100+	100+	100+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	2	50+	50+	50+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	3	50+	50+	50+	0+	0+	0+	0+	0+	0+	50	50	50
%	4	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



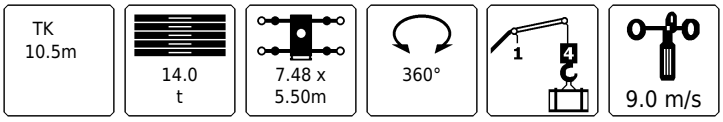
		t											
	m	31.3	31.3	31.3	36.0	36.0	36.0	40.6	40.6	40.6	45.3	45.3	45.3
	3.0												
	3.5												
	4.0												
	4.5												
	5.0												
	6.0												
	7.0	3.6											
	8.0	3.7			3.7								
	9.0	3.7			3.7			3.5					
	10.0	3.7			3.7			3.5			3.2		
	12.0	3.7			3.7			3.6			3.3		
	14.0	3.6	2.9		3.6			3.5			3.3		
	16.0	3.5	2.8		3.5	2.8		3.4	2.8		3.3		
	18.0	3.3	2.7		3.3	2.7		3.3	2.7		3.1	2.7	
	20.0	3.1	2.6	2.3	3.2	2.6	2.3	3.0	2.6		2.6	2.6	
	22.0	2.9	2.5	2.3	2.8	2.5	2.3	2.4	2.6	2.2	2.0	2.5	2.2
	24.0	2.4	2.5	2.2	2.2	2.5	2.2	1.9	2.4	2.2	1.5	2.3	2.2
	26.0	2.0	2.4	2.2	1.8	2.3	2.2	1.5	2.1	2.2	1.1	1.8	2.2
	28.0	1.7	2.0	2.2	1.5	1.9	2.1	1.1	1.7	2.1	0.6	1.4	1.9
	30.0	1.4	1.7	2.0	1.2	1.6	1.9	0.7	1.3	1.7		1.0	1.5
	32.0	1.1	1.4	1.7	0.8	1.3	1.6		1.0	1.4		0.6	1.2
	34.0	0.8	1.2	1.4		1.0	1.3		0.6	1.1			0.8
	36.0		0.9	1.1		0.7	1.0			0.7			
	38.0		0.6	0.8			0.7						
	39.0			0.7									
	0°												
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50	50	50
%	2	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
%	3	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
%	4	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



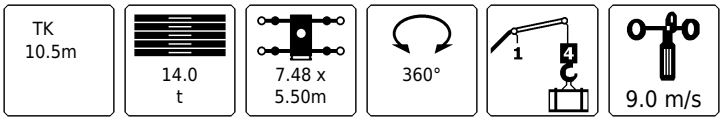
		t											
m		**50.0**	**50.0**	**50.0**									
3.0													
3.5													
4.0													
4.5													
5.0													
6.0													
7.0													
8.0													
9.0													
10.0													
12.0		2.9											
14.0		2.9											
16.0		3.0											
18.0		2.6											
20.0		2.0	2.6										
22.0		1.5	2.3										
24.0		1.0	1.8	2.2									
26.0			1.4	2.0									
28.0			1.0	1.6									
30.0				1.2									
32.0				0.8									
34.0													
36.0													
38.0													
39.0													
	0°												
%	1	100+	100+	100+									
%	2	100+	100+	100+									
%	3	100+	100+	100+									
%	4	100+	100+	100+									
	°	0.0	20.0	40.0									

TK



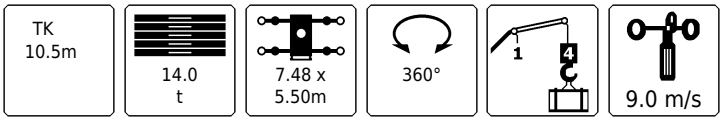
		t											
	m	12.6	12.6	12.6	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0	11.4			11.4			11.4					
	3.5	11.4			11.4			11.4					
	4.0	11.4			11.4			11.4			11.4		
	4.5	11.4			11.4			11.4			11.4		
	5.0	11.4	9.2		11.4			11.4			11.4		
	6.0	11.2	9.2		11.4	9.2		11.4			11.4		
	7.0	10.8	8.8		11.4	9.2		11.4	9.2		11.4		
	8.0	10.2	8.3	6.8	11.1	8.9		11.4	9.2		11.4	9.2	
	9.0	9.5	7.9	6.6	10.7	8.5	6.8	11.2	8.9	6.8	11.4	9.2	
	10.0	8.8	7.5	6.4	10.2	8.1	6.6	11.0	8.6	6.8	11.4	9.0	6.8
	12.0	7.5	6.8	6.1	9.0	7.5	6.3	10.3	8.0	6.5	10.8	8.4	6.7
	14.0	6.4	6.2	5.8	8.0	6.9	6.0	9.2	7.4	6.2	8.8	7.9	6.4
	16.0	5.6	5.5	5.4	7.0	6.4	5.8	7.7	7.0	6.0	7.1	7.4	6.2
	18.0	4.9	5.1	5.1	6.1	5.9	5.6	6.1	6.5	5.9	5.6	6.2	6.0
	20.0	4.4	4.7		5.3	5.4	5.2	4.9	5.3	5.6	4.4	4.9	5.3
	22.0				4.4	4.6	4.7	4.1	4.4	4.5	3.7	4.0	4.2
	24.0				3.7	3.8		3.4	3.7	3.8	3.0	3.3	3.5
	26.0							2.9	3.1	3.2	2.5	2.7	2.9
	28.0							2.5	2.6		2.1	2.3	2.4
	30.0							2.2			1.7	1.9	1.9
	32.0										1.3	1.5	
	34.0										1.0	1.1	
	36.0												
	38.0												
	40.0												
	42.0												
	43.0												
	0°	4.2	4.7	4.9	3.4			2.1			0.9		
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50+	50+	50+
%	2	0+	0+	0+	0+	0+	0+	50+	50+	50+	50+	50+	50+
%	3	0+	0+	0+	50+	50+	50+	50+	50+	50+	50+	50+	50+
%	4	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



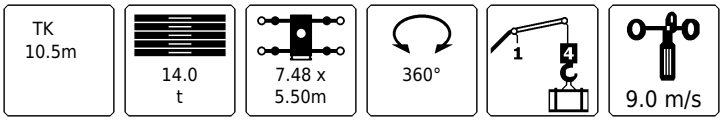
		t											
	m	31.3	31.3	31.3	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0				11.4								
	3.5				11.4			11.4					
	4.0				11.4			11.4					
	4.5				11.4			11.4			11.4		
	5.0				11.4			11.4			11.4		
	6.0	11.4			11.4	9.2		11.4			11.4		
	7.0	11.4			11.4	9.2		11.4	9.2		11.4		
	8.0	11.4			11.1	8.9		11.4	9.2		11.4	9.2	
	9.0	11.4	9.2		10.7	8.5	6.8	11.2	8.9		11.4	9.2	
	10.0	11.4	9.2		10.2	8.1	6.6	11.0	8.6	6.8	11.4	8.9	
	12.0	9.9	8.8	6.8	9.0	7.5	6.3	9.8	8.0	6.5	10.4	8.3	6.6
	14.0	7.9	8.2	6.6	8.0	6.9	6.0	8.6	7.4	6.2	9.2	7.8	6.4
	16.0	6.3	7.1	6.3	7.0	6.4	5.8	7.5	6.9	6.0	8.1	7.3	6.1
	18.0	5.0	5.7	6.0	6.1	5.9	5.6	6.5	6.2	5.8	6.7	6.7	6.0
	20.0	4.0	4.4	4.9	5.4	5.4	5.2	5.4	5.6	5.4	5.5	5.8	5.7
	22.0	3.2	3.6	3.9	4.6	4.8	4.8	4.5	4.8	4.9	4.5	4.8	5.0
	24.0	2.6	2.9	3.2	3.9	4.0		3.8	4.0	4.1	3.9	4.1	4.2
	26.0	2.1	2.4	2.6				3.3	3.5	3.5	3.3	3.5	3.6
	28.0	1.7	1.9	2.1				2.9	3.0		2.9	3.0	3.1
	30.0	1.2	1.5	1.6				2.5			2.5	2.6	2.7
	32.0	0.8	1.1	1.2							2.2	2.3	
	34.0		0.6								2.0	2.0	
	36.0												
	38.0												
	40.0												
	42.0												
	43.0												
	0°				3.6			2.5			1.9		
%	1	100+	100+	100+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	2	50+	50+	50+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	3	50+	50+	50+	0+	0+	0+	0+	0+	0+	50	50	50
%	4	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



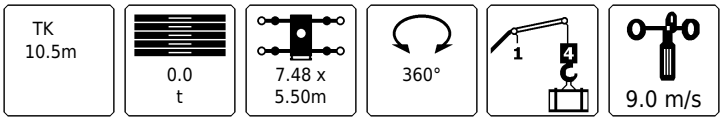
		t											
	m	31.3	31.3	31.3	36.0	36.0	36.0	40.6	40.6	40.6	45.3	45.3	45.3
	3.0												
	3.5												
	4.0												
	4.5												
	5.0												
	6.0	10.8											
	7.0	10.8			9.8								
	8.0	10.8			9.8			8.5					
	9.0	10.6			9.7			8.4			7.3		
	10.0	10.1	8.6		9.7			8.4			7.3		
	12.0	8.9	8.0	6.5	8.9	7.9		8.2	7.5		7.3		
	14.0	7.8	7.2	6.3	8.0	7.3	6.3	7.6	7.0		7.1	6.7	
	16.0	7.0	6.5	6.0	7.2	6.6	6.1	6.8	6.5	6.0	6.5	6.3	5.8
	18.0	6.1	5.8	5.6	6.2	6.1	5.7	5.8	6.0	5.5	5.4	5.9	5.4
	20.0	5.2	5.3	5.1	5.0	5.4	5.3	4.7	5.1	5.2	4.4	4.9	5.1
	22.0	4.3	4.6	4.7	4.2	4.5	4.8	3.9	4.2	4.5	3.6	4.0	4.3
	24.0	3.7	3.9	4.1	3.5	3.8	4.0	3.2	3.6	3.8	3.0	3.3	3.7
	26.0	3.2	3.4	3.5	3.0	3.2	3.4	2.7	3.0	3.3	2.5	2.8	3.1
	28.0	2.7	2.9	3.0	2.6	2.8	2.9	2.3	2.5	2.8	2.1	2.3	2.6
	30.0	2.3	2.5	2.6	2.2	2.4	2.5	1.9	2.1	2.3	1.7	2.0	2.2
	32.0	2.0	2.1	2.2	1.9	2.0	2.2	1.6	1.8	2.0	1.4	1.6	1.8
	34.0	1.7	1.8		1.6	1.7	1.8	1.3	1.5	1.7	1.1	1.3	1.5
	36.0	1.5	1.6		1.4	1.5	1.5	1.1	1.3	1.4	0.8	1.0	1.2
	38.0	1.3	1.3		1.1	1.3		0.8	1.0	1.1		0.7	0.9
	40.0				0.9	1.0			0.7	0.9			0.6
	42.0				0.7	0.8							
	43.0				0.6	0.7							
	0°	1.1			0.5								
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50	50	50
%	2	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
%	3	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
%	4	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



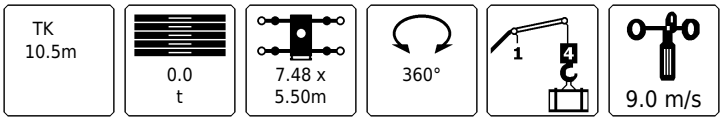
		t											
m		**50.0**	**50.0**	**50.0**									
3.0													
3.5													
4.0													
4.5													
5.0													
6.0													
7.0													
8.0													
9.0													
10.0		5.6											
12.0		5.7											
14.0		5.7											
16.0		5.6	5.5										
18.0		4.9	5.3	5.2									
20.0		4.0	4.5	4.8									
22.0		3.3	3.7	4.1									
24.0		2.7	3.1	3.4									
26.0		2.2	2.6	2.8									
28.0		1.7	2.1	2.3									
30.0		1.4	1.7	1.9									
32.0		1.0	1.3	1.5									
34.0		0.6	1.0	1.2									
36.0				0.8									
38.0													
40.0													
42.0													
43.0													
0°													
%	1	100+	100+	100+									
%	2	100+	100+	100+									
%	3	100+	100+	100+									
%	4	100+	100+	100+									
°		0.0	20.0	40.0									

TK



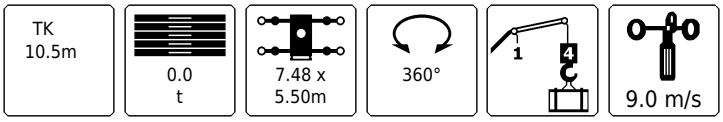
		t											
	m	**12.6**	**12.6**	**12.6**	**17.3**	**17.3**	**17.3**	**21.9**	**21.9**	**21.9**	**26.6**	**26.6**	**26.6**
	3.0	11.4			11.4			11.4					
	3.5	11.4			11.4			11.4					
	4.0	11.4			11.4			11.4			11.4		
	4.5	11.4			11.4			11.4			11.4		
	5.0	11.4	9.2		11.4			11.4			11.4		
	6.0	11.2	9.2		11.4	9.2		11.4			11.4		
	7.0	10.8	8.8		11.4	9.2		11.3	9.2		10.4		
	8.0	10.2	8.3	6.8	10.6	8.9		9.8	9.2		8.6	9.2	
	9.0	9.5	7.9	6.6	9.2	8.5	6.8	8.2	8.9	6.8	7.1	8.5	
	10.0	8.6	7.5	6.4	7.8	8.1	6.6	7.0	8.1	6.8	6.0	7.2	6.8
	12.0	6.1	6.8	6.1	5.7	6.6	6.3	5.1	6.0	6.5	4.3	5.2	6.1
	14.0	4.4	4.9	5.3	4.1	4.7	5.2	3.8	4.4	5.0	3.0	3.8	4.5
	16.0	3.4	3.7	4.0	3.1	3.5	3.9	2.8	3.3	3.7	2.1	2.8	3.4
	18.0	2.6	2.8	3.0	2.4	2.7	3.0	2.1	2.5	2.8	1.2	2.0	2.5
	20.0	2.1	2.2		1.8	2.1	2.2	1.4	1.8	2.1		1.2	1.7
	22.0				1.3	1.5	1.6	0.8	1.2	1.5			0.9
	24.0				0.8	1.0			0.7	0.9			
	26.0												
	28.0												
	0°	1.9	1.9	2.1	0.6								
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50+	50+	50+
%	2	0+	0+	0+	0+	0+	0+	50+	50+	50+	50+	50+	50+
%	3	0+	0+	0+	50+	50+	50+	50+	50+	50+	50+	50+	50+
%	4	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



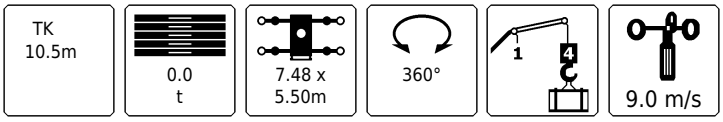
		t											
	m	31.3	31.3	31.3	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0				11.4								
	3.5				11.4			11.4					
	4.0				11.4			11.4					
	4.5				11.4			11.4			11.4		
	5.0				11.4			11.4			11.4		
	6.0	11.2			11.4	9.2		11.4			11.4		
	7.0	9.0			11.4	9.2		11.4	9.2		11.3		
	8.0	7.3			10.8	8.9		10.6	9.2		10.1	9.2	
	9.0	6.1	7.5		9.5	8.5	6.8	8.9	8.9		8.6	9.2	
	10.0	5.0	6.3		8.1	8.1	6.6	7.7	8.5	6.8	7.4	8.3	
	12.0	3.4	4.5	5.4	6.0	6.8	6.3	5.8	6.5	6.5	5.6	6.3	6.6
	14.0	2.2	3.1	3.9	4.3	4.9	5.4	4.3	4.8	5.4	4.3	4.9	5.4
	16.0	1.2	2.1	2.8	3.3	3.7	4.0	3.2	3.7	4.0	3.3	3.7	4.1
	18.0		1.2	1.9	2.6	2.9	3.1	2.5	2.9	3.1	2.5	2.9	3.2
	20.0			1.0	2.0	2.2	2.4	1.9	2.2	2.4	2.0	2.3	2.5
	22.0				1.6	1.7	1.8	1.5	1.7	1.9	1.5	1.8	2.0
	24.0				1.1	1.3		1.0	1.3	1.4	1.0	1.4	1.5
	26.0								0.8	0.9	0.6	0.9	1.1
	28.0												0.6
	0°				0.9								
%	1	100+	100+	100+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	2	50+	50+	50+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	3	50+	50+	50+	0+	0+	0+	0+	0+	0+	50	50	50
%	4	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



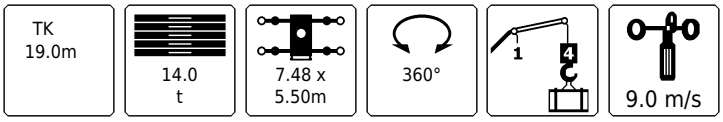
		t											
	m	**31.3**	**31.3**	**31.3**	**36.0**	**36.0**	**36.0**	**40.6**	**40.6**	**40.6**	**45.3**	**45.3**	**45.3**
	3.0												
	3.5												
	4.0												
	4.5												
	5.0												
	6.0	10.8											
	7.0	10.6			9.6								
	8.0	9.3			8.6			7.8					
	9.0	7.9			7.4			6.6			6.0		
	10.0	6.8	7.8		6.3			5.7			5.1		
	12.0	5.1	5.9	6.5	4.7	5.5		4.2	5.0		3.7		
	14.0	3.9	4.6	5.2	3.6	4.3	4.9	3.1	3.8		2.6	3.4	
	16.0	3.0	3.5	3.9	2.7	3.3	3.8	2.2	2.9	3.5	1.8	2.5	3.1
	18.0	2.3	2.7	3.1	2.0	2.5	2.9	1.5	2.1	2.7	1.1	1.8	2.3
	20.0	1.7	2.1	2.4	1.4	1.9	2.3	0.9	1.5	2.0		1.1	1.7
	22.0	1.1	1.6	1.8	0.8	1.4	1.7		0.9	1.4			1.1
	24.0	0.6	1.1	1.4		0.8	1.2			0.9			
	26.0			0.8			0.7						
	28.0												
	0°												
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50	50	50
%	2	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
%	3	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
%	4	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



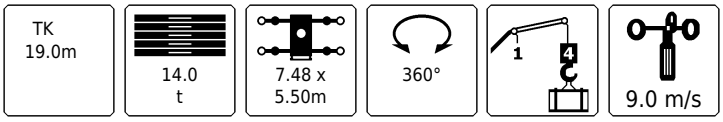
	t											
m	50.0	50.0	50.0									
3.0												
3.5												
4.0												
4.5												
5.0												
6.0												
7.0												
8.0												
9.0												
10.0	4.4											
12.0	3.1											
14.0	2.1											
16.0	1.2	2.1										
18.0		1.3	1.9									
20.0			1.2									
22.0												
24.0												
26.0												
28.0												
0°												
% 1	100+	100+	100+									
% 2	100+	100+	100+									
% 3	100+	100+	100+									
% 4	100+	100+	100+									
°	0.0	20.0	40.0									

TK



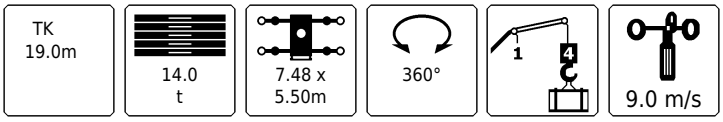
	t											
m	12.6	12.6	12.6	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
3.0	3.6											
3.5	3.6			3.6								
4.0	3.7			3.6								
4.5	3.7			3.6			3.6					
5.0	3.7			3.7			3.6					
6.0	3.7			3.7			3.7			3.6		
7.0	3.7			3.7			3.7			3.7		
8.0	3.6			3.7			3.7			3.7		
9.0	3.5	3.0		3.6			3.7			3.7		
10.0	3.4	3.0		3.5	3.0		3.7			3.7		
12.0	3.2	2.9		3.4	3.0		3.5	3.0		3.6	3.0	
14.0	3.1	2.8	2.4	3.2	2.9		3.4	3.0		3.5	3.0	
16.0	2.9	2.6	2.4	3.1	2.8	2.4	3.2	2.8	2.4	3.4	2.9	
18.0	2.7	2.5	2.3	2.9	2.6	2.3	3.1	2.7	2.4	3.2	2.8	2.4
20.0	2.5	2.4	2.2	2.8	2.5	2.3	3.0	2.6	2.3	3.1	2.7	2.3
22.0	2.3	2.3	2.2	2.6	2.4	2.2	2.9	2.5	2.3	3.0	2.6	2.3
24.0	2.1	2.1	2.2	2.4	2.3	2.2	2.7	2.4	2.2	2.9	2.5	2.2
26.0	1.9	2.0	2.1	2.2	2.2	2.2	2.5	2.4	2.2	2.8	2.4	2.2
28.0	1.8	1.8		2.1	2.1	2.1	2.4	2.3	2.2	2.5	2.4	2.2
30.0				1.9	2.0	2.0	2.2	2.2	2.2	2.1	2.3	2.2
32.0				1.8	1.8		2.1	2.1	2.1	1.8	2.1	2.2
34.0				1.7			1.9	2.0	2.0	1.5	1.8	2.0
36.0							1.7	1.8		1.2	1.5	1.7
38.0							1.4	1.5		1.0	1.2	1.3
40.0										0.7	0.9	
42.0											0.6	
44.0												
46.0												
48.0												
0°	1.7	1.8	1.9	1.7			1.4			0.4		
% 1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50+	50+	50+
% 2	0+	0+	0+	0+	0+	0+	50+	50+	50+	50+	50+	50+
% 3	0+	0+	0+	50+	50+	50+	50+	50+	50+	50+	50+	50+
% 4	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+
°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



		t											
	m	31.3	31.3	31.3	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
	3.0												
	3.5				3.6								
	4.0				3.6								
	4.5				3.6			3.6					
	5.0				3.7			3.6					
	6.0	3.6			3.7			3.7			3.6		
	7.0	3.6			3.7			3.7			3.7		
	8.0	3.7			3.7			3.7			3.7		
	9.0	3.7			3.6			3.7			3.7		
	10.0	3.7			3.5	3.0		3.7			3.7		
	12.0	3.7			3.4	3.0		3.5	3.0		3.6	3.0	
	14.0	3.6	3.0		3.2	2.9		3.4	2.9		3.5	2.9	
	16.0	3.5	2.9		3.1	2.7	2.4	3.2	2.8	2.4	3.4	2.8	
	18.0	3.4	2.8	2.4	2.9	2.6	2.3	3.1	2.7	2.3	3.2	2.7	2.3
	20.0	3.2	2.7	2.3	2.8	2.5	2.3	3.0	2.6	2.3	3.1	2.6	2.3
	22.0	3.1	2.6	2.3	2.6	2.4	2.2	2.8	2.5	2.2	3.0	2.5	2.2
	24.0	3.0	2.5	2.2	2.4	2.3	2.2	2.7	2.4	2.2	2.8	2.4	2.2
	26.0	2.5	2.5	2.2	2.2	2.2	2.2	2.5	2.3	2.2	2.7	2.4	2.2
	28.0	2.1	2.4	2.2	2.1	2.1	2.1	2.4	2.3	2.2	2.6	2.3	2.2
	30.0	1.7	2.2	2.2	1.9	2.0	2.0	2.2	2.2	2.2	2.5	2.3	2.1
	32.0	1.4	1.8	2.1	1.8	1.8		2.1	2.1	2.1	2.3	2.2	2.1
	34.0	1.0	1.5	1.7	1.7			1.9	2.0	2.0	2.2	2.1	2.1
	36.0	0.7	1.2	1.4				1.8	1.9		1.9	2.0	2.1
	38.0		0.8	1.1				1.7	1.8		1.7	1.8	1.9
	40.0			0.7							1.5	1.6	
	42.0										1.3	1.4	
	44.0												
	46.0												
	48.0												
	0°				1.7			1.7			1.2		
%	1	100+	100+	100+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	2	50+	50+	50+	0+	0+	0+	0+	0+	0+	0+	0+	0+
%	3	50+	50+	50+	0+	0+	0+	0+	0+	0+	50	50	50
%	4	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



	t											
m	31.3	31.3	31.3	36.0	36.0	36.0	40.6	40.6	40.6	45.3	45.3	45.3
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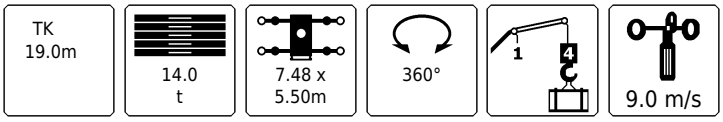
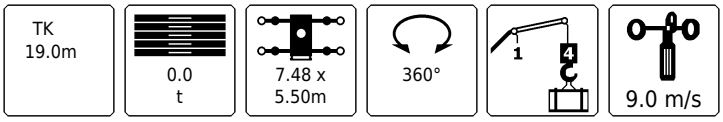
3.5												
4.0												
4.5												
5.0												
6.0												
7.0	3.6											
8.0	3.7			3.7								
9.0	3.7			3.7			3.5					
10.0	3.7			3.7			3.5			3.2		
12.0	3.7			3.7			3.6			3.3		
14.0	3.6	2.9		3.6			3.5			3.3		
16.0	3.5	2.8		3.5	2.8		3.4	2.8		3.3		
18.0	3.3	2.7		3.3	2.7		3.3	2.7		3.2	2.7	
20.0	3.1	2.6	2.3	3.2	2.6	2.3	3.2	2.6		3.1	2.6	
22.0	3.0	2.5	2.3	3.1	2.5	2.3	3.1	2.6	2.2	3.0	2.5	2.2
24.0	2.9	2.5	2.2	2.9	2.5	2.2	2.9	2.5	2.2	2.9	2.5	2.2
26.0	2.8	2.4	2.2	2.8	2.4	2.2	2.8	2.4	2.2	2.7	2.4	2.2
28.0	2.7	2.3	2.2	2.7	2.4	2.2	2.5	2.4	2.2	2.3	2.4	2.2
30.0	2.5	2.3	2.1	2.4	2.3	2.2	2.2	2.3	2.2	1.9	2.3	2.1
32.0	2.2	2.2	2.1	2.1	2.3	2.1	1.8	2.2	2.1	1.6	2.0	2.1
34.0	2.0	2.2	2.1	1.8	2.1	2.1	1.6	1.9	2.1	1.3	1.7	2.0
36.0	1.7	1.9	2.1	1.6	1.8	2.0	1.3	1.6	1.9	1.0	1.4	1.7
38.0	1.5	1.7	1.8	1.3	1.6	1.8	1.1	1.4	1.6	0.7	1.2	1.4
40.0	1.3	1.5	1.6	1.2	1.4	1.5	0.8	1.1	1.3		0.9	1.2
42.0	1.1	1.3	1.3	1.0	1.2	1.3		0.9	1.1		0.6	0.9
44.0	0.9	1.0		0.8	1.0	1.1		0.7	0.9			0.7
46.0	0.8	0.8			0.8	0.8			0.6			
48.0	0.6											
0°	0.6											
% 1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50	50	50
% 2	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
% 3	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
% 4	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



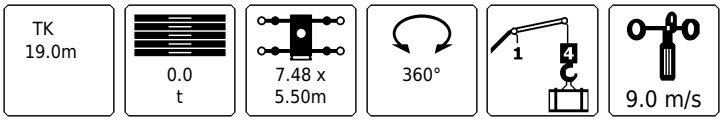
	t											
m	50.0	50.0	50.0									
3.0												
3.5												
4.0												
4.5												
5.0												
6.0												
7.0												
8.0												
9.0												
10.0												
12.0	2.9											
14.0	2.9											
16.0	3.0											
18.0	3.0											
20.0	2.9	2.6										
22.0	2.9	2.5										
24.0	2.7	2.5	2.2									
26.0	2.3	2.4	2.2									
28.0	1.9	2.3	2.1									
30.0	1.5	2.1	2.1									
32.0	1.2	1.7	2.0									
34.0	0.8	1.4	1.8									
36.0		1.1	1.5									
38.0		0.8	1.2									
40.0			0.9									
42.0												
44.0												
46.0												
48.0												
0°												
% 1	100+	100+	100+									
% 2	100+	100+	100+									
% 3	100+	100+	100+									
% 4	100+	100+	100+									
°	0.0	20.0	40.0									

TK



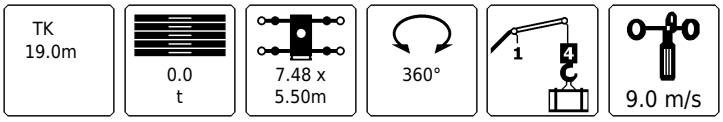
	t											
m	12.6	12.6	12.6	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
3.0	3.6											
3.5	3.6			3.6								
4.0	3.7			3.6								
4.5	3.7			3.6			3.6					
5.0	3.7			3.7			3.6					
6.0	3.7			3.7			3.7			3.6		
7.0	3.7			3.7			3.7			3.7		
8.0	3.6			3.7			3.7			3.7		
9.0	3.5	3.0		3.6			3.7			3.7		
10.0	3.4	3.0		3.5	3.0		3.7			3.7		
12.0	3.2	2.9		3.4	3.0		3.5	3.0		3.6	3.0	
14.0	3.1	2.8	2.4	3.2	2.9		3.4	3.0		3.3	3.0	
16.0	2.9	2.6	2.4	3.1	2.8	2.4	3.2	2.8	2.4	2.6	2.9	
18.0	2.7	2.5	2.3	2.9	2.6	2.3	2.5	2.7	2.4	1.9	2.8	2.4
20.0	2.5	2.4	2.2	2.3	2.5	2.3	2.0	2.5	2.3	1.2	2.2	2.3
22.0	2.2	2.3	2.2	1.9	2.3	2.2	1.5	2.1	2.3	0.6	1.6	2.3
24.0	1.8	2.1	2.2	1.5	1.9	2.2	0.9	1.6	2.0		1.1	1.8
26.0	1.5	1.7	1.8	1.1	1.5	1.8		1.2	1.6			1.3
28.0	1.2	1.3		0.7	1.1	1.4		0.7	1.2			0.8
30.0					0.7	1.0			0.8			
32.0												
33.0												
0°	1.1	1.1	1.2									
% 1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50+	50+	50+
% 2	0+	0+	0+	0+	0+	0+	50+	50+	50+	50+	50+	50+
% 3	0+	0+	0+	50+	50+	50+	50+	50+	50+	50+	50+	50+
% 4	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+	0+
°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



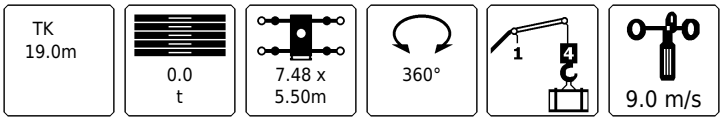
	t											
m	31.3	31.3	31.3	17.3	17.3	17.3	21.9	21.9	21.9	26.6	26.6	26.6
3.0												
3.5				3.6								
4.0				3.6								
4.5				3.6			3.6					
5.0				3.7			3.6					
6.0	3.6			3.7			3.7			3.6		
7.0	3.6			3.7			3.7			3.7		
8.0	3.7			3.7			3.7			3.7		
9.0	3.7			3.6			3.7			3.7		
10.0	3.7			3.5	3.0		3.7			3.7		
12.0	3.6			3.4	3.0		3.5	3.0		3.6	3.0	
14.0	2.7	3.0		3.2	2.9		3.4	2.9		3.5	2.9	
16.0	1.8	2.9		3.1	2.7	2.4	3.2	2.8	2.4	3.4	2.8	
18.0	1.0	2.3	2.4	2.9	2.6	2.3	2.9	2.7	2.3	2.8	2.7	2.3
20.0		1.7	2.3	2.5	2.5	2.3	2.3	2.6	2.3	2.3	2.6	2.3
22.0		1.0	2.0	2.0	2.4	2.2	1.9	2.3	2.2	1.8	2.3	2.2
24.0			1.4	1.6	2.0	2.2	1.5	1.9	2.2	1.4	1.9	2.2
26.0			0.8	1.3	1.6	1.9	1.1	1.5	1.8	1.0	1.5	1.8
28.0				1.0	1.3	1.5	0.7	1.2	1.5	0.7	1.2	1.5
30.0				0.6	1.0	1.1		0.9	1.2		0.8	1.2
32.0									0.8			0.8
33.0												0.7
0°				0.3								
% 1	100+	100+	100+	0+	0+	0+	0+	0+	0+	0+	0+	0+
% 2	50+	50+	50+	0+	0+	0+	0+	0+	0+	0+	0+	0+
% 3	50+	50+	50+	0+	0+	0+	0+	0+	0+	50	50	50
% 4	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



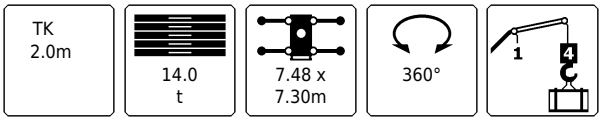
		t											
	m	31.3	31.3	31.3	36.0	36.0	36.0	40.6	40.6	40.6	45.3	45.3	45.3
	3.0												
	3.5												
	4.0												
	4.5												
	5.0												
	6.0												
	7.0	3.6											
	8.0	3.7			3.7								
	9.0	3.7			3.7			3.5					
	10.0	3.7			3.7			3.5			3.2		
	12.0	3.7			3.7			3.6			3.3		
	14.0	3.6	2.9		3.6			3.2			2.8		
	16.0	3.2	2.8		2.9	2.8		2.4	2.8		2.0		
	18.0	2.5	2.7		2.2	2.7		1.8	2.7		1.3	2.4	
	20.0	2.0	2.6	2.3	1.7	2.5	2.3	1.2	2.1			1.8	
	22.0	1.5	2.1	2.3	1.2	2.0	2.3	0.6	1.6	2.2		1.3	2.1
	24.0	1.0	1.7	2.1	0.7	1.5	2.0		1.2	1.8		0.7	1.6
	26.0		1.3	1.7		1.1	1.6		0.7	1.4			1.1
	28.0		0.9	1.4		0.7	1.2			0.9			0.6
	30.0			1.0			0.8						
	32.0			0.6									
	33.0												
	0°												
%	1	0+	0+	0+	0+	0+	0+	0+	0+	0+	50	50	50
%	2	0+	0+	0+	50	50	50	100+	100+	100+	100+	100+	100+
%	3	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
%	4	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+	100+
	°	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0	0.0	20.0	40.0

TK



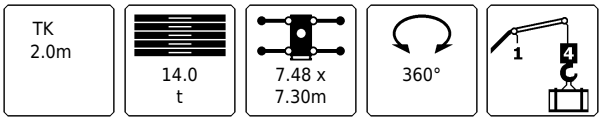
	t											
m	50.0	50.0	50.0									
3.0												
3.5												
4.0												
4.5												
5.0												
6.0												
7.0												
8.0												
9.0												
10.0												
12.0	2.9											
14.0	2.2											
16.0	1.4											
18.0												
20.0		1.4										
22.0		0.8										
24.0			1.2									
26.0			0.7									
28.0												
30.0												
32.0												
33.0												
0°												
% 1	100+	100+	100+									
% 2	100+	100+	100+									
% 3	100+	100+	100+									
% 4	100+	100+	100+									
°	0.0	20.0	40.0									

TK



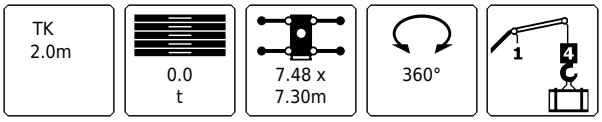
		t											
	m	12.6	17.3	21.9	26.6	31.3	17.3	21.9	26.6	31.3	36.0	40.6	45.3
	3.0	24.7	24.7	24.7			24.7						
	3.5	24.7	24.7	24.7			24.7	24.6					
	4.0	24.7	24.7	24.7	24.7		24.7	24.1					
	4.5	24.7	24.7	24.7	24.7		24.7	23.7	24.0				
	5.0	24.7	24.7	24.7	24.7		24.7	23.0	23.2				
	6.0	24.7	24.7	24.7	24.7	24.7	24.4	20.9	21.3	17.7			
	7.0	24.7	24.7	24.7	24.7	24.7	24.0	18.9	19.6	16.2	16.0		
	8.0	24.7	24.7	24.7	24.7	24.1	22.7	17.4	17.9	15.0	15.1	13.9	
	9.0	24.7	24.7	24.7	24.0	22.5	21.1	16.0	16.5	13.9	14.1	13.3	12.0
	10.0	24.5	24.3	23.4	21.8	20.1	19.5	14.8	15.4	12.8	13.3	12.6	11.6
	12.0	18.1	18.1	17.9	16.7	15.5	17.2	12.9	13.3	11.1	11.7	11.5	10.8
	14.0		13.8	13.6	13.0	12.2	14.2	11.3	11.8	9.7	10.5	10.3	10.0
	16.0		10.8	10.7	10.1	9.7	11.2	10.0	10.4	8.6	9.4	9.3	9.2
	18.0			8.5	8.0	7.6		9.0	9.3	7.6	8.5	8.4	8.4
	20.0			6.9	6.4	6.0		7.6	7.8	6.8	7.6	7.2	7.0
	22.0				5.2	4.7			6.5	6.1	6.3	6.0	5.7
	24.0				4.2	3.9			5.5	5.4	5.3	5.0	4.7
	26.0				3.6	3.2			4.7	4.6	4.5	4.2	4.0
	28.0					2.7				4.0	3.9	3.7	3.5
	30.0					2.2				3.5	3.4	3.2	3.0
	32.0										3.0	2.8	2.6
	34.0										2.7	2.4	2.2
	36.0											2.1	1.9
	38.0											1.8	1.7
	40.0											1.6	1.4
	42.0												1.2
	44.0												1.0
	45.0												0.9
	0°	15.8	9.6	5.8	3.5	1.9	10.0	6.5	4.6	3.3	2.5	1.6	0.9
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1

TK



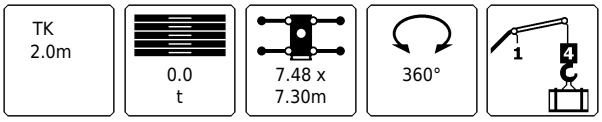
	t												
m	50.0												
3.0													
3.5													
4.0													
4.5													
5.0													
6.0													
7.0													
8.0													
9.0													
10.0													
12.0	9.6												
14.0	9.2												
16.0	8.4												
18.0	7.7												
20.0	6.5												
22.0	5.3												
24.0	4.3												
26.0	3.7												
28.0	3.1												
30.0	2.7												
32.0	2.3												
34.0	1.9												
36.0	1.6												
38.0	1.4												
40.0	1.1												
42.0	0.9												
44.0													
45.0													
0°													
% 1	100+												
% 2	100+												
% 3	100+												
% 4	100+												
m/s	11.1												

TK



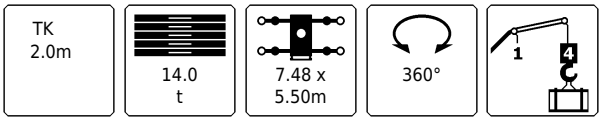
		t											
	m	12.6	17.3	21.9	26.6	31.3	17.3	21.9	26.6	31.3	36.0	40.6	45.3
	3.0	24.7	24.7	24.7			24.7						
	3.5	24.7	24.7	24.7			24.7	24.6					
	4.0	24.7	24.7	24.7	24.7		24.7	24.1					
	4.5	24.7	24.7	24.7	24.7		24.7	23.7	24.0				
	5.0	24.7	24.7	24.7	24.7		24.7	23.0	23.2				
	6.0	24.7	24.7	24.7	24.0	21.8	24.4	20.9	21.3	17.7			
	7.0	24.6	23.4	21.4	19.2	17.2	23.8	18.9	19.6	16.2	16.0		
	8.0	20.1	18.7	17.3	15.5	13.9	19.3	17.4	17.6	15.0	15.0	13.9	
	9.0	15.8	15.4	14.2	12.8	11.4	15.9	15.3	14.8	13.9	13.1	12.1	11.2
	10.0	12.7	12.6	11.9	10.7	9.5	13.0	12.9	12.6	11.9	11.3	10.4	9.7
	12.0	8.5	8.5	8.4	7.7	6.8	8.9	9.2	9.4	9.0	8.6	7.9	7.3
	14.0		5.9	5.8	5.2	4.8	6.3	6.6	6.8	6.8	6.6	6.1	5.6
	16.0		4.3	4.2	3.7	3.4	4.6	4.9	5.0	5.0	4.9	4.5	4.2
	18.0			3.2	2.8	2.4		3.7	3.9	3.9	3.8	3.5	3.2
	20.0			2.4	2.0	1.5		3.0	3.1	3.1	3.0	2.7	2.5
	22.0				1.4				2.5	2.5	2.4	2.1	1.9
	24.0								2.1	2.0	1.9	1.6	1.4
	26.0								1.7	1.6	1.5	1.2	1.0
	28.0									1.3	1.2	0.8	
	30.0									0.9	0.8		
	0°	7.8	3.7	1.9	0.2		4.0	2.5	1.6	0.8			
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1

TK



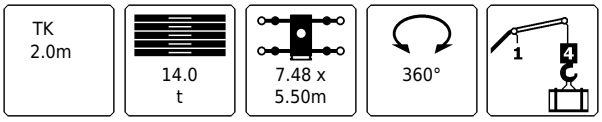
	t												
m	50.0												
3.0													
3.5													
4.0													
4.5													
5.0													
6.0													
7.0													
8.0													
9.0													
10.0													
12.0	6.4												
14.0	4.8												
16.0	3.6												
18.0	2.8												
20.0	2.0												
22.0	1.5												
24.0	0.9												
26.0													
28.0													
30.0													
0°													
% 1	100+												
% 2	100+												
% 3	100+												
% 4	100+												
m/s	11.1												

TK



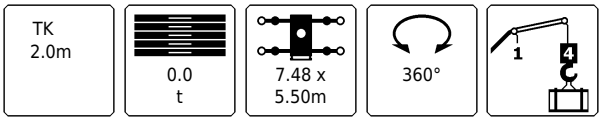
		t											
	m	12.6	17.3	21.9	26.6	31.3	17.3	21.9	26.6	31.3	36.0	40.6	45.3
	3.0	24.7	24.7	24.7			24.7						
	3.5	24.7	24.7	24.7			24.7	24.6					
	4.0	24.7	24.7	24.7	24.7		24.7	24.1					
	4.5	24.7	24.7	24.7	24.7		24.7	23.7	24.0				
	5.0	24.7	24.7	24.7	24.7		24.7	23.0	23.2				
	6.0	24.7	24.7	24.7	24.7	24.7	24.4	20.9	21.3	17.7			
	7.0	24.7	24.7	24.7	23.7	21.8	24.0	18.9	19.6	16.2	16.0		
	8.0	24.4	23.1	21.7	19.9	18.3	22.7	17.4	17.9	15.0	15.1	13.9	
	9.0	20.2	19.7	18.5	17.0	15.6	20.1	16.0	16.5	13.9	14.1	13.3	12.0
	10.0	16.8	16.6	16.0	14.7	13.4	17.0	14.8	15.4	12.8	13.3	12.6	11.6
	12.0	12.2	12.1	12.0	11.3	10.3	12.5	12.7	12.8	11.1	11.7	11.1	10.5
	14.0		9.2	9.0	8.5	8.0	9.5	9.8	9.9	9.6	9.6	9.0	8.5
	16.0		7.1	7.0	6.4	6.0	7.4	7.7	7.8	7.8	7.7	7.3	6.9
	18.0			5.4	4.9	4.5		6.1	6.3	6.2	6.1	5.7	5.5
	20.0			4.3	3.9	3.6		4.9	5.1	5.0	4.9	4.6	4.3
	22.0				3.2	2.8			4.2	4.2	4.1	3.8	3.6
	24.0				2.6	2.2			3.6	3.5	3.5	3.2	3.0
	26.0				2.1	1.7			3.1	3.0	3.0	2.7	2.5
	28.0					1.2				2.6	2.5	2.3	2.1
	30.0									2.2	2.2	1.9	1.7
	32.0										1.8	1.6	1.4
	34.0										1.6	1.3	1.2
	36.0											1.1	0.9
	38.0											0.8	
	0°	11.3	6.2	3.6	2.0	0.5	6.5	4.2	3.1	2.1	1.4	0.6	
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1

TK



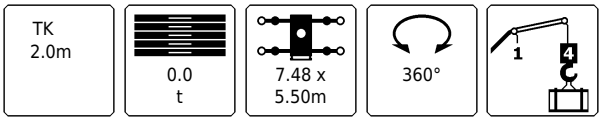
		t
m		50.0
3.0		
3.5		
4.0		
4.5		
5.0		
6.0		
7.0		
8.0		
9.0		
10.0		
12.0		9.4
14.0		7.7
16.0		6.2
18.0		5.0
20.0		4.0
22.0		3.3
24.0		2.7
26.0		2.2
28.0		1.8
30.0		1.4
32.0		1.1
34.0		
36.0		
38.0		
0°		
%	1	100+
%	2	100+
%	3	100+
%	4	100+
m/s		11.1

TK



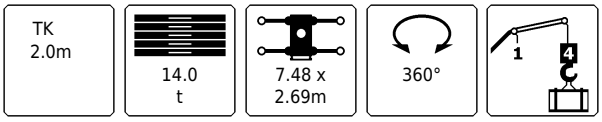
		t											
	m	12.6	17.3	21.9	26.6	31.3	17.3	21.9	26.6	31.3	36.0	40.6	45.3
	3.0	24.7	24.7	24.7			24.7						
	3.5	24.7	24.7	24.7			24.7	24.6					
	4.0	24.7	24.7	24.7	24.5		24.7	24.1					
	4.5	24.7	24.7	24.2	21.6		24.7	23.7	23.3				
	5.0	24.7	23.5	21.1	18.6		24.1	22.3	20.8				
	6.0	19.2	17.8	16.1	14.3	12.6	18.3	17.2	16.3	15.1			
	7.0	14.9	13.9	12.7	11.3	9.9	14.4	13.7	13.2	12.3	11.5		
	8.0	11.6	11.2	10.3	9.1	7.9	11.6	11.2	10.9	10.3	9.6	8.8	
	9.0	9.0	9.0	8.5	7.4	6.4	9.4	9.4	9.2	8.7	8.1	7.4	6.8
	10.0	7.1	7.1	7.0	6.1	5.2	7.5	7.8	7.8	7.4	7.0	6.3	5.8
	12.0	4.5	4.6	4.5	4.0	3.4	4.9	5.2	5.4	5.4	5.2	4.6	4.2
	14.0		3.2	3.1	2.7	2.1	3.5	3.7	3.9	3.9	3.7	3.4	3.1
	16.0		2.3	2.2	1.7	0.9	2.6	2.8	2.9	2.9	2.8	2.5	2.2
	18.0			1.4				2.0	2.2	2.2	2.1	1.8	1.5
	20.0							1.5	1.7	1.6	1.5	1.1	
	22.0								1.1	1.1	0.9		
	23.0								0.9	0.8			
	0°	4.1	1.9	0.3			2.1	1.1	0.4				
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1

TK



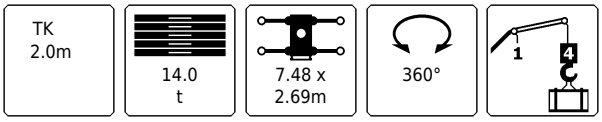
	t											
m	50.0											
3.0												
3.5												
4.0												
4.5												
5.0												
6.0												
7.0												
8.0												
9.0												
10.0												
12.0	3.5											
14.0	2.4											
16.0	1.5											
18.0												
20.0												
22.0												
23.0												
0°												
% 1	100+											
% 2	100+											
% 3	100+											
% 4	100+											
m/s	11.1											

TK



		t											
	m	**12.6**	**17.3**	**21.9**	**26.6**	**31.3**	**17.3**	**21.9**	**26.6**	**31.3**	**36.0**	**40.6**	**45.3**
	6.0	16.0											
	7.0	13.0	12.3	11.4									
	8.0	10.5	10.2	9.5	8.6	7.6	10.6	10.3					
	9.0	8.5	8.4	8.1	7.2	6.3	8.8	8.8					
	10.0	7.0	6.9	6.8	6.1	5.2	7.3	7.5	7.5	7.1			
	12.0	4.7	4.7	4.7	4.2	3.6	5.1	5.3	5.5	5.4	5.2		
	14.0		3.5	3.4	3.0	2.4	3.7	3.9	4.1	4.1	3.9	3.6	3.3
	16.0		2.6	2.5	2.1	1.4	2.8	3.0	3.2	3.1	3.0	2.8	2.5
	18.0			1.8	1.2			2.3	2.5	2.5	2.4	2.1	1.8
	20.0			1.2				1.8	2.0	1.9	1.8	1.5	1.2
	22.0								1.5	1.5	1.4	0.9	
	24.0								1.2	1.0	0.9		
	26.0								0.8				
	0°	4.3	2.2	0.7			2.5	1.4	0.8				
%	1	0+	0+	0+	50+	100+	0+	0+	0+	0+	0+	0+	50
%	2	0+	0+	50+	50+	50+	0+	0+	0+	0+	50	100+	100+
%	3	0+	50+	50+	50+	50+	0+	0+	50	100+	100+	100+	100+
%	4	0+	0+	0+	0+	0+	50	100+	100+	100+	100+	100+	100+
	m/s	14.3	14.3	12.8	12.8	11.1	14.3	12.8	12.8	11.1	11.1	11.1	11.1

TK



	t											
m	50.0											
6.0												
7.0												
8.0												
9.0												
10.0												
12.0												
14.0	2.8											
16.0	2.0											
18.0	1.2											
20.0												
22.0												
24.0												
26.0												
0°												
% 1	100+											
% 2	100+											
% 3	100+											
% 4	100+											
m/s	11.1											