

## The Formwork Experts.

# **Dokamatic table**

# **User Information**

Instructions for assembly and use (Method statement)



## Contents

	London a sheep at the second
4	Introduction

- 4 Elementary safety warnings
- 7 Services

### 8 System description

- 8 Dokamatic table the fast tableform that adapts perfectly to any slab
- 9 System dimensions
- 10 The Dokamatic table in detail
- 12 Instructions for assembly and use (Method statement)
- 16 Adaptation to building layout
- 21 Height adjustment
- 24 Adapting to different slab thicknesses

## 26 Structural design

#### 28 Tables around edges of slab

- 29 Tie-back solutions
- 31 Edge table with platform
- 34 Edge table without platform
- 38 Edge table in the corner zone
- 39 Slab stop-ends
- 42 Edge table with downstand beam

### 45 Repositioning

- 45 General instructions on repositioning
- 46 Horizontal repositioning / travelling
- 50 Vertical repositioning with transport forks
- 53 Loading platform
- 54 Repositioning operation
- 56 Lining-and-levelling the Dokamatic tables

#### 57 Table Lifting System TLS

- 58 Product description
- 59 Loading data
- 60 Areas of use, possible configurations
- 62 Repositioning and aligning the Table Lifting System
- 63 Repositioning Doka tableforms
- 64 Anchoring on the structure
- 67 Possible ways of connecting the landing level safety gates
- 68 Computation of quantities for Lifting masts TLS 1.50m
- 69 Automatic climbing unit TLS

### 70 General

- 70 Combining with other Doka systems
- 71 Enhanced requirements for fair-faced concrete
- 72 Ladder system
- 74 Guardrail systems on the structure
- **doka** 999767002 04/2023

- 76 Transporting, stacking and storing
- 84 Reshoring props, concrete technology and stripping out

86 Article list

# Introduction

## **Elementary safety warnings**

## User target groups

- This booklet is aimed at all persons who will be working with the Doka product or system that it describes. It contains information on the standard design for setting up this system, and on correct, compliant utilisation of the system.
- All persons working with the product described herein must be familiar with the contents of this booklet and with all the safety instructions it contains.
- Persons who are incapable of reading and understanding this booklet, or who can do so only with difficulty, must be instructed and trained by the customer.
- The customer is to ensure that the information materials provided by Doka (e.g. User Information booklets, Instructions for Assembly and Use, Operating Instruction manuals, plans etc.) are up to date and available to all users, and that they have been made aware of them and have easy access to them at the usage location.
- In the relevant technical documentation and formwork utilisation plans, Doka shows the workplace safety precautions that are necessary in order to use the Doka products safely in the usage situations shown.

In all cases, users are obliged to ensure compliance with national laws, standards and regulations throughout the entire project and to take appropriate additional or alternative workplace safety precautions where necessary.

## Hazard assessment

The customer is responsible for drawing up, documenting, implementing and continually updating a hazard assessment at every job-site.

This booklet serves as the basis for the site-specific hazard assessment, and for the instructions given to users on how to prepare and utilise the system. It does not substitute for these, however.

## **Remarks on this booklet**

- This document can be used as general Instructions for Assembly and Use (Method Statement) or be incorporated into site-specific Instructions for Assembly and Use (Method Statement).
- The graphics, animations and videos in this document or app sometimes depict partially assembled assemblies and may require additional safety equipment and/or measures to comply with safety regulations.

The customer must ensure all applicable regulations are complied with, even if they are not shown or implied in the graphics, animations and videos provided.

 Individual sections contain further safety instructions and/or special warnings as applicable.

## Planning

- Provide safe workplaces for those using the formwork (e.g. for when it is being erected/dismantled, modified or repositioned etc). It must be possible to get to and from these workplaces via safe access routes!
- If you are considering any deviation from the details and instructions given in this booklet, or any application which goes beyond those described in the booklet, then revised static calculations must be produced for checking, as well as supplementary assembly instructions.

## Regulations; industrial safety

- All laws, Standards, industrial safety regulations and other safety rules applying to the utilisation of our products in the country and/or region in which you are operating must be observed at all times.
- If a person or object falls against, or into, the sideguard component and/or any of its accessories, the component affected may only continue in use after it has been inspected and passed by an expert.

# Rules applying during all phases of the assignment

- The customer must ensure that this product is erected and dismantled, reset and generally used for its intended purpose in accordance with the applicable laws, standards and rules, under the direction and supervision of suitably skilled persons.
  These persons' mental and physical capacity must not in any way be impaired by alcohol, medicines or drugs.
- Doka products are technical working appliances which are intended for industrial / commercial use only, always in accordance with the respective Doka User Information booklets or other technical documentation authored by Doka.
- The stability and load-bearing capacity of all components and units must be ensured during all phases of the construction work!
- Do not step on or apply strain to cantilevers, closures, etc. until suitable measures to ensure their stability have been correctly implemented (e.g. by tie-backs).
- Strict attention to and compliance with the functional instructions, safety instructions and load specifications are required. Non-compliance can cause accidents and severe injury (risk of fatality) and considerable damage to property.
- Sources of fire in the vicinity of the formwork are prohibited. Heaters are permissible only when used correctly and situated a correspondingly safe distance from the formwork.
- Customer must give due consideration to any and all effects of the weather on the equipment and regards both its use and storage (e.g. slippery surfaces, risk of slipping, effects of the wind, etc.) and implement appropriate precautionary measures to secure the equipment and surrounding areas and to protect workers.
- All connections must be checked at regular intervals to ensure that they are secure and in full working order.

In particular threaded connections and wedged connections have to be checked and retightened as necessary in accordance with activity on the jobsite and especially after out-of-the-ordinary occurrences (e.g. after a storm).

 It is strictly forbidden to weld Doka products – in particular anchoring/tying components, suspension components, connector components and castings etc. – or otherwise subject them to heating.

Welding causes serious change in the microstructure of the materials from which these components are made. This leads to a dramatic drop in the failure load, representing a very great risk to safety.

It is permissible to cut individual tie rods to length with metal cutting discs (introduction of heat at the end of the rod only), but it is important to ensure that flying sparks do not heat and thus damage other tie rods.

The only articles which are allowed to be welded are those for which the Doka literature expressly points out that welding is permitted.

## Assembly

- The equipment/system must be inspected by the customer before use, to ensure that it is in an acceptable condition. Steps must be taken to exclude components that are damaged, deformed, or weakened due to wear, corrosion or rot (e.g. fungal decay).
- Using our safety and formwork systems together with those of other manufacturers can create risks that may lead to injury and damage to property. This requires separate verification by the user.
- The equipment/system must be assembled and erected in accordance with the applicable laws, standards and rules by trained customer personnel whilst maintaining any applicable safety inspections that may be required.
- It is not permitted to modify Doka products; such modifications constitute a safety risk.

## **Closing the formwork**

• Doka products and systems must be set up so that all loads acting upon them are safely transferred!

## Pouring

 Do not exceed the permitted fresh-concrete pressures. Over-high pouring rates overload the formwork, cause greater deflection and risk breakage.

## Stripping the formwork

- Do not strip out the formwork until the concrete has reached sufficient strength and the person in charge has given the order for the formwork to be stripped out!
- When stripping out the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges, special pry-bars or system features such as Framax stripping corners.
- When stripping out the formwork, do not endanger the stability of any part of the structure, or of any scaffolding, platforms or formwork that is still in place!

## Transporting, stacking and storing

 Observe all country-specific regulations applying to the handling of formwork and scaffolding. For system formwork the Doka slinging means stated in this booklet must be used – this is a mandatory requirement.

If the type of sling is not specified in this document, the customer must use slinging means that are suitable for the application envisaged and that comply with the regulations.

- When lifting, always make sure that the unit to be lifted and its individual parts can absorb the forces that occur.
- Remove loose parts or secure them so that they cannot slip out of position and drop.
- When lifting formwork or formwork accessories with a crane, no persons must be carried along, e.g. on working platforms or in multi-trip packaging.
- All components must be stored safely, following all the special Doka instructions given in the relevant sections of this document!

## Maintenance

 Only original Doka components may be used as spare parts. Repairs may only be carried out by the manufacturer or authorised facilities.

## **Miscellaneous**

The weights as stated are averages for new material; actual weights can differ, depending on material tolerances. Dirt accretions, moisture saturation, etc. can also affect weight.

We reserve the right to make alterations in the interests of technical progress.

## **Eurocodes at Doka**

The permissible values stated in Doka documents (e.g.  $F_{perm} = 70 \text{ kN}$ ) are not design values (e.g.  $F_{Rd} = 105 \text{ kN}$ )!

- It is essential to avoid confusing permissible values with design values!
- Doka documents will continue to state the permissible values.

Allowance has been made for the following partial factors:

- γ<sub>F</sub> = 1.5
- γ<sub>M, timber</sub> = 1.3
- γ<sub>M, steel</sub> = 1.1
- k<sub>mod</sub> = 0.9

Consequently, all the design values for an EC design calculation can be determined from the permissible values.

## Symbols used

The following symbols are used in this document:

# $\triangle$

This is a notifier drawing attention to an extremely dangerous situation in which noncompliance with this notifier will lead to death or severe, irreversible injury.

#### WARNING

DANGER

This is a notifier drawing attention to a dangerous situation in which non-compliance with this notifier can lead to death or severe, irreversible injury.

### CAUTION

This is a notifier drawing attention to a dangerous situation in which non-compliance with this notifier can lead to slight, reversible injury.



### NOTICE

This is a notifier drawing attention to a situation in which non-compliance with this notifier can lead to malfunctions or damage to property.

Indicates that actions have to be performed



#### by the user.

Instruction

Si

#### Sight-check

Indicates that you need to do a sight-check to make sure that necessary actions have been carried out.



## Tip





#### Reference

Cross-references other documents.

## **Services**

## Support in every stage of the project

- Project success assured by products and services from a single source.
- Competent support from planning through to assembly directly on site.

### Project assistance from start to finish

Every single project is unique and calls for individualised solutions. When it comes to the forming operations, the Doka team can help you with its consulting, planning and ancillary services in the field, enabling you to carry out your project effectively, safely and reliably. Doka assists you with individual consulting services and customised training courses.

#### Efficient planning for a safe project sequence

Efficient formwork solutions can only be developed economically if there is an understanding of project requirements and construction processes. This understanding is the basis of Doka engineering services.

#### Optimise construction workflows with Doka

Doka offers special tools that help you in designing transparent processes. This is the way to speed up pouring processes, optimise inventories and create more efficient formwork planning processes.

#### Custom formwork and on-site assembly

To complement its system formwork range, Doka offers customised formwork units. And specially trained personnel assemble load-bearing towers and formwork on site.

#### Just-in-time availability

Formwork availability is a crucial factor in realising your project on time and on budget. The worldwide logistics network puts the necessary formwork quantities on site at the agreed time.

#### Rental and reconditioning service

The formwork material needed for any particular project can be rented from Doka's high-performing rental park. Doka Reconditioning cleans and overhauls both client-owned equipment and Doka rental equipment.



#### **Digital Services**

for higher productivity in construction From planning to completion of construction with our digital services we want to set the pace for boosting productivity in construction. Our digital portfolio includes solutions for planning, procuring and managing to performing on site. Learn more about our digital offer at <u>doka.com/digital</u>.

# System description

## Dokamatic table - the fast tableform that adapts perfectly to any slab



The Dokamatic table saves on both manpower and crane time: With the DoKart plus, the tables can easily be travelled to their next location by just one man working on his own.

The system is optimised to give the very shortest forming times, and copes well with varying structural-design and geometrical requirements.

- 4 standard formats with an underlying 'grid' logic:
  - 2.50 x 4.00 m
  - 2.50 x 5.00 m
  - 2.00 x 4.00 m
  - 2.00 x 5.00 m
- tableform faced with 3S top formwork sheets, 21 or 27 mm Where flexibility in the choice of form-facing is required, the Dokamatic table grille is available.
- Slab heights:
  - up to 3.50 m with Floor props Eurex 20 LW.
  - up to approx. 5.80 m with Floor props Eurex top
  - up to approx. 7.30 m with Dokamatic table frames
  - For heights greater than this, the tableforms can be borne on Doka load-bearing systems.
- High capacity (slab thicknesses of up to 84 cm) despite the low dead weight of approx. 55 kg/m<sup>2</sup>.
- Made up of high-grade system components such as the sturdy Dokamatic table waling 12 and Doka beams H20 top, for extremely long service life and minimal follow-on costs.
- Just-in-time delivery of the ready-assembled Dokamatic tables to the site.

## **Rapid repositioning times**

- Ready-assembled units can be travelled.
- Handy, practical shifting devices.
- Higher speed and safety than with hand-set formwork – the more so the higher the room height.

# Safe and versatile along the edges of the slab

- Integrable table platforms make it unnecessary to mount work and protection platforms.
- Easy lateral adjustment of the props, to allow for table projections of up to 1.50 m.
- System solutions for downstand beams and stopends.
- Swivel-mounted, lockable props, enabling the tables to be lifted out over parapets without hindrance.

## Adaptability in all 3 dimensions

- Rapid accommodation to all layouts is made possible by insertion beams, and by the system-compatible grid of connector holes on the table waling.
- Direct connectability to the table frame or to Doka load-bearing towers, for greater slab heights.
- Easy-to-reposition swivel heads, for rapid adaptation to changing geometrical and structural-design requirements.
- Form faced as standard with 3S top. Any type of form-facing possible, for all architectural specifications.

## System dimensions

## Dokamatic table 2.50 x 4.00m



Dimensions in cm

## Dokamatic table 2.50 x 5.00m



## Dokamatic table 2.00 x 4.00m



## Dokamatic table 2.00 x 5.00m



## **Dokamatic table grille**

Pre-assembled table grille in the 4 standard formats, for facing with any desired form-ply.



## The Dokamatic table in detail

## **Dokamatic swivel head 40**

- Easy, bolt-on mounting to the Dokamatic table waling
- Floor props are quick to connect, with wedgeclamped join (hammer-operated)
- Wedge is fixed in transport position by integrated spring-lock
- Rigid clamping of the floor props, and optimum stiffening reinforcement between the head and the secondary beam, for enhanced floor-prop load-bearing capacity
- Swivel-mounted floor props, lockable at 75° and 90° (lift-out positions)
- Swivel lever can be operated from ground level
- Holes drilled for diagonal back-stays on edge tables
- Can be fitted to multi-purpose waling WS10 (on custom tables)
- Plastic cover protects the form-facing on stacked tables

## **Dokamatic table waling 12**

 Dokamatic table waling and secondary beam are rigidly linked



 Triangular markings to ensure optimum positioning of the swivel heads and intermediate props



 Universal connectability is ensured by the systemcompatible increment-grid of the drilled holes



## Doka beam H20 top

Innovative end-reinforcement:

- reduces damage to the ends of the beams
- greatly lengthens the service life



## Doka floor props Eurex

EN 1065-compliant floor prop



Their high load-bearing capacity is complemented by many practical details making them very easy to handle:

- numbered pegging holes for height adjustment
- elbowed fastening clamps, reducing the risk of injury and making the props easier to operate
- special geometry of the thread makes the prop easier to release even under high load

The flexurally rigid link with the tableform superstructure increases the load-bearing capacity of the floor props:

- permitted capacity of Eurex 20 top:
  - when completely extended: 30 kN
  - when inserted by min. 30 cm: 36.7 kN
- permitted capacity of Eurex 30 top: 41.2 kN
- permitted capacity of Eurex 20 LW: 30 kN
- F p

Follow the directions in the 'Floor props Eurex top' or 'Floor props Eurex 20 LW' User Information booklet.

## WARNING

- It is not permitted to use Eurex floor props 20 top 700 on Doka tableforms.
  - For these heights, Eurex 20 top 550 floor props must be used in conjunction with Dokamatic table frames 1.50m.



## Instructions for assembly and use (Method statement)

Dokamatic tables can cover a wide area of practical applications.

Their flexible design enables them to be combined in very versatile ways.

This means that in some projects, they will be put together differently, and a different sequence of operations will be needed, from the scheme shown here (e.g. for sloping walls).

## CAUTION

- Dokamatic tables with floor props may only be used up to a max. inclination of the slab of 2%.
- If the slab inclination is >2%, then a separate structural-design appraisal is needed, and the necessary additional precautions (e.g. back-stays) must be defined.
- Never place tables with floor props on top of one another.

## CAUTION

# Before stepping onto the tables, observe the following points:

- Horizontal stability must be ensured (e.g. by back-tying the edge tables, by fixing the tables to the structure, by joining them into one continuous forming area).
- If no fall protection is in place (e.g. during formwork set-up or stripping), a personal fall-arrest system (PFAS) must be used (e.g. safety harness).



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The FreeFalcon mobile fall protection mast permits a secure attachment point to be created for the safety harness.

User instruction prior to use of the FreeFalcon is mandatory.

Follow the directions in the 'FreeFalcon' Operating Instructions.

## NOTICE

All necessary traffic routes must be prepared at the site!

## Transporting / handling the panels

For offloading panels from a truck, or lifting them onsite a stack at a time, use the Dokamatic lifting strap 13.00m (see the section headed 'Transporting, stacking and storing').

## Pre-assembly

While the tables are still on the stack, attach an edge strip (F) to each table that is going to be placed directly against a wall of the building.



Also pre-install the table platforms and fall-protection for edge tables while the tables are still on the stack (see the section headed 'Tables around edges of slab').



## **Closing the formwork**

## NOTICE

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Always position the tables so that the leverlatch of the swivel head points towards the edges of the floor-slabs (in the direction in which the tables will later be removed).



- Use the Dokamatic lifting strap 13.00m to lift the table superstructure onto the DoKart plus, or onto suitable temporary shoring (see the section headed 'Transporting, stacking and storing').
- If necessary, adjust the position and number of swivel heads accordingly (see the section headed 'Adapting to different slab thicknesses').
- Mount the floor props (see the section headed 'Height adjustment').





With very long floor props, it may be necessary to mount these in a tilted position.

Bring the table to its usage location using the Dokamatic lifting strap 13.00m or the DoKart plus. Then raise it to its intended operational height, extend the floor props, and adjust the height.

If possible, start by putting up the first table in one corner of the building – with the pre-mounted edge strip facing the wall.

Fix the first table to the structure (e.g. with braces, Lashing strap 5.00m (A) or in-place solutions using e.g. the tie-holes in the wall).



 Bring further tables to the usage location in the same way.





## CAUTION

**Risk of edge tables toppling over!** (due to cantilevering platforms, edge props that have been relocated towards the inside, stopend formworks, downstand beams)

- Secure all edge tables by tying back (A) every primary beam in the inner cantilever zone of the table.
- Do not release the table from the shifting device until tie-backs are fixed to prevent tipover.
- Also applies when setting down tables or putting them into temporary storage.



For details of the tie-back, see the section headed 'Tie-back solutions'.

Insert standard strips between the tables, and nail where needed (see the section headed 'Adaptation to building layout').





The T-ledge makes it easier to remove the

T-ledges are only needed in the area where formwork removal is going to begin.



a ... max. 15 mm

- Form the closure zones (see the section headed) 'Adaptation to building layout').
- > Form the slab stop-ends (see the section headed 'Slab stop-ends').
- > Spray the formwork sheeting with release agent.
- ► Place the reinforcement.

## Pouring

- > Before pouring, recheck all floor props.
  - The fastening clamp (A) has to be pushed T all the way into the floor prop.
    - Adjusting nut (B) has to be tightened into contact with the fastening clamp.



To protect the surface of the form-facing, we recommend using a vibrator with a protective rubber cap.

NOTICE

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As well as the instructions given here, you must follow the instructions in the section headed 'Reshoring props, concrete technology and stripping out'.

- Check the concrete strength.
- Take the load off the floor props of the tables, and lower them approx. 5 cm.



Remove the standard strips and closures (see the section headed 'Adaptation to building layout').



- Position the DoKart plus beneath the middle of the table.
- Extend the lifting tower until the table is supported on the distribution beams of the DoKart plus.

Push the floor props all the way in and, with the DoKart plus, lower the table until it is 10 cm clear of the ground.



- a ... max. 10 cm ground clearance
- Reposition the table (see the sections headed 'Horizontal repositioning / travelling', 'Vertical repositioning with transport forks' and 'Table Lifting System TLS').

## Reshoring



#### NOTICE

As well as the instructions given here, you must follow the instructions in the section headed 'Reshoring props, concrete technology and stripping out'.

Before pouring the next floor-slab (i.e. above the one that has just been stripped), put up reshoring props.

## Adaptation to building layout

The formwork system can be adapted to the building layout in the following ways:

- combining different sizes of table
- grid logic (arranging the tables lengthways and crossways)
- closure zones with fitting-boards



- a ... 4.0 m / 5.0 m
- A e.g. Dokamatic table 2.00 x 4.00m or 2.50 x 5.00m
- B Typical zone (standard strip)
- C Wall junction (standard strip)
- **D** Closure zone (fitting-board)

# in the direction of the secondary beams

The sheet-covered area is 10 cm less than the system dimension on both long sides of the table. The projecting secondary beam acts as a support for the strips of formwork sheeting.



Dimensions in cm

a ... System width of the table (200 cm or 250 cm)

- b ... a 20 cm (180 cm or 230 cm)
- A Support for strip of formwork sheeting
- B Sheet-covered area
- C Dokamatic secondary beam 1.95m or 2.45m

## Typical zone

Between the tables and at wall junctions, it is always standard strips that are inserted.

## Standard strip (20 cm) between the tables



### Standard strip (9.7 cm) at wall junctions



## **Closure zone**

Instead of the standard strips, a fitting-board of variable width is inserted between the tables.

#### Note:

The width of the fitting-board needed is always 20 cm larger than the actual closure dimension 'x'.

## Fitting-board (x + 20 cm) between the tables



s ... Width of fitting-board (x + 20 cm)

x ... Actual closure dimension

The type of closure is selected depending on the slab thickness and on the necessary closure width 'x' (see the section headed 'Structural design').

#### **Option 1: fitting-board only**



# Option 2: fitting-board with insertion beam, with no additional propping



# Option 3: fitting-board with insertion beam and additional propping



# Forming and stripping closures with insertion beams

#### Location of insertion beams:



- a ... max. spacing of secondary beams of the Dokamatic table
- A Insertion beam 1.95m (on 2.00m wide tables)
- Insertion beam 2.45m (on 2.50m wide tables)
- B Dokamatic table
- C Fitting-board
- D Joint where the fitting-boards abut

#### Note:

At the ends of the tables, the insertion beams are placed as close as possible to the edge.

#### Joint where the fitting-boards abut (D) :

- in the direction of the primary beams: an additional insertion beam is necessary.
- in the direction of the secondary beams: over the raised support surface (E) of the insertion beam. If this is not possible, fit the insertion beam with its raised support surface facing downwards, and wedge it up on the table waling.





#### CAUTION Before stepping onto the tables, observe the following points:

- Horizontal stability must be ensured (e.g. by back-tying the edge tables, by fixing the tables to the structure, by joining them into one continuous forming area).
- If no fall protection is in place (e.g. during formwork set-up or stripping), a personal fall-arrest system (PFAS) must be used (e.g. safety harness).

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The FreeFalcon mobile fall protection mast permits a secure attachment point to be created for the safety harness.

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User instruction prior to use of the FreeFalcon is mandatory.

Follow the directions in the 'FreeFalcon' Operating Instructions.

Use a mobile scaffold tower (e.g. Working scaffold Modul) or a platform stairway for setting up and stripping the formwork.

## NOTICE

When using the **Platform stairway 0.97m** for vertical access, note the following:

Minimum distance **a** from drop-off edge: 2.00 m



## Setting up the formwork:

Push insertion beams into the tableforms alongside the closure zone, flush with the secondary beams.



A Insertion beam

> Put up tables opposite the closure zone.



**B** Dokamatic table

Pull each insertion beam across the closure zone (1) and turn it into the upright (2).



Place fitting-boards over the closure zone, and nail where needed.



Stripping and repositioning the formwork:



#### A Risk of insertion beams falling out

- Do not leave insertion beams with a length of 1.95m inside 2.50m wide tables when these are repositioned!
- Take the load off the floor props of the tables, and lower the tables approx. 5 cm on one side of the closure zone.



Turn the insertion beams on their sides (1) and push them into the tableform (2).



- Take off the fitting-boards.
- ► Lower the remaining tables.
- Reposition the tables together with the insertion beams.

The insertion beams are available for use again straight away at the new location.

## in the direction of the primary beams

Typical zone



### A Dokamatic table

## **Closure zone**

#### Note:

The closure zone should be supported by a centrally placed floor prop - this has no implications regarding the dimensioning of the table. Otherwise, statical verification is required.



m ... max. 10 cm

- A Adjustable waling extension FF20/50
- B Beam clamp Top50
- C Dokamatic table waling
- **D** Connecting pin 10cm + Spring cotter 5mm
- E Supporting head H20 DF



## NOTICE

Fix the waling extension in the table waling with just one connecting pin (this is a tension link only). Otherwise there is a risk of overload.

Secure the connecting pin with a **Spring cot**ter 5mm!

## Combining tables in the direction of the secondary beams and of the primary beams



- A Doka beam H20
- B Nailing board (site-provided)

#### Note:

- The beam (A) must be pre-mounted!
- When screw-on brackets for formwork sheets are used, installation of this beam (A) is not possible! Consult your Doka technician!

## Inter-table connections

## in the direction of the secondary beams

The tables can be connected by e.g. Tie rod 15.0 and nut.

#### Note:

Only tighten the nut gently!



- **D** Tie rod 15.0
- E Nut, complete, Art.n° 500340002

## in the direction of the primary beams

For each joint between table walings, the elements can be connected with a Formwork element connector FF20/50Z and Connecting pins 10cm.



- A Formwork element connector FF20/50 Z
- B Connecting pin 10cm + Spring cotter 5mm
- **C** Dokamatic table waling 12

#### Note:

Use an Adjustable waling extension FF20/50 to deal with any closures or tolerances.



## NOTICE

Fix the waling extension in the table waling with just one connecting pin (this is a tension link only). Otherwise there is a risk of overload.

Secure the connecting pin with a **Spring cot**ter 5mm!

# Height adjustment

# Slab heights up to 5.80 m (standard tables)

For these heights, the Dokamatic table is fitted with Doka floor props Eurex 20 top or LW or Eurex 30 top.



- a ... Extension length of the Doka floor prop Eurex
- b ... 32.8 cm
- c ... Form-facing 21 or 27mm d ... 8.9 cm
- e ... Height of the table construction without form-facing: 40.9 cm

## Mounting the floor props

Open the wedge of the Dokamatic swivel head and insert the prop.



> Tighten the wedge with the hammer.



## NOTICE

- Having the outer tube at the top increases stability
- To make it easier to get at the adjusting nut, it is also possible to have the outer tube at the bottom.
- Long floor props can also be fitted with the Dokamatic swivel head tilted back.
- Where the floor-slab height is 3.50 m and upward, secure the wedge with a spring cotter 5mm, as at this height and above it is difficult to do a sight-check.
- The fastening clamp (A) has to be pushed all the way into the floor prop.
  - Adjusting nut **(B)** has to be tightened into contact with the fastening clamp.



## Slab heights up to approx. 7.30 m

The **Dokamatic table frame** extends the Dokamatic tables' range to include slab heights of up to approx. 7.30 m.

- Quickly adds 1.50 m to the height.
- Can be mounted to the Dokamatic table with the Dokamatic scaffold connection.
- Props connected in same way as with Dokamatic swivel head 40.
- Integral latch-type peg for connecting diagonal crosses from the Doka load-bearing tower system Staxo.
- Centring plates for the Transport fork DM 1.5t.

The flexurally rigid link with the tableform superstructure increases the load-bearing capacity of the floor props:

- permitted capacity of Eurex 20 top:
  - when completely extended: 30 kN
  - when inserted by min. 30 cm: 36.7 kN
- permitted capacity of Eurex 30 top: 41.2 kN
- permitted capacity of Eurex 20 LW: 30 kN



Follow the directions in the 'Floor props Eurex top' or 'Floor props Eurex 20 LW' User Information booklet.



## NOTICE

When using the DoKart plus to move these tables, observe the following points:

- Length of the distribution beams (Doka beams H20): 3.90 m instead of the standard length of 2.65 m.
- Use an Extension set for DoKart plus.

## Items needed

	I	Numb	ames			
	2	2	3	3	<u> </u>	1
		Len	gth of	table	(m)	
	4	5	4	5	4	5
Diagonal cross 9.150	—	—	_	—	9	—
Diagonal crosses 9.200 or 12.200		—		6	_	—
Diagonal cross 9.250	3	—		—	_	—
Diagonal cross 9.300	—	3	-	—		—
Diagonal cross 12.150	—	—	_	—	_	9
Diagonal cross 18.100	—	—	6	—		—
Dokamatic table frame 1.50m	2	2	3	3	4	4
Dokamatic scaffold connection	4	4	6	6	8	8
Spring locked connecting pin 16mm	4	4	6	6	8	8
Floor prop Eurex top or Floor prop Eurex 20 LW	4	4	6	6	8	8
Connecting pin 10cm	6	6	8	8	10	10
Spring cotter 5mm	6	6	8	8	10	10

## Inter-frame spacing



Diagonal cross	b [cm]
9.150	103.0
9.200	167.7
9.250	225.0
9.300	279.4
12.150	127.7
12.200	183.9
18.100	146.2

## Assembly



- a ... 1.50 m
- b ... Variable (as statically required)
- A Dokamatic table frame 1.50 m
- B Dokamatic scaffold connection
- **C** Spring locked connecting pin 16mm (not included in scope of supply)
- D Diagonal cross as per table

- > Mount diagonal crosses in both the vertical and the horizontal, and secure them with the safety catch as soon as they have been slotted onto the latch-type peg.
- Push Dokamatic scaffold connections into the Dokamatic table frame and secure them with Spring locked connecting pins 16mm.

#### Close-up of scaffold connection:



- B Dokamatic scaffold connection
- C Spring locked connecting pin 16mm

#### Attaching the tableform superstructure:

- Using two Dokamatic lifting straps 13.00m and the crane, lift the superstructure onto the pre-assembled load-bearing tower.
- Insert Connecting pins 10cm to connect the table deck to the table frame and secure the connecting pins with Spring cotters 5mm. (The second connecting pin on each longitudinal connection prevents any displacement of the superstructure.)



G Table superstructure

#### Mounting the floor props

Raise the entire unit by crane and – working from a mobile scaffold tower (e.g. the Working scaffold Modul) - mount the floor props (these are attached in the same way as on standard tables).



#### 9767-251-01

- The fastening clamp (A) has to be pushed all the way into the floor prop.
- Adjusting nut (B) has to be tightened into contact with the fastening clamp.



## Slab heights over 7.30 m

The Dokamatic table is mounted to the Load-bearing tower Staxo, Staxo 40, Staxo 100 or d2, using the Dokamatic scaffold connection or the Dokamatic table Staxo spindle connector.

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Follow the directions in the User Information booklet of the Doka load-bearing tower system that is being used!

## Adapting to different slab thicknesses

The tables can be adapted to take account of the required slab thickness by:

- relocating the edge props (Dokamatic swivel heads 40)
- installing extra intermediate props
- with the Dokamatic swivel head 40
  - with the Dokamatic prop connection

## Note:

If the slab thicknesses vary, intermediate props can also be installed temporarily.

## Positioning the floor props

The markings on the Dokamatic table waling 12 make it easy to ensure correct positioning.

## Markings on the Dokamatic table waling 12



## Spacing in cm

	а	b	С	d
Dokamatic table waling 12 4.00m	211	138	107	104
Dokamatic table waling 12 5.00m	279	177	128	140

## Dokamatic swivel head 40

## Assembly

Bolt the Dokamatic swivel head into the Dokamatic table waling using the connecting pins provided, and secure with Spring cotters 5mm.





- A Dokamatic swivel head 40
- B Connecting pin
- C Spring cotter 5mm
- D Dokamatic table waling 12



If the swivel function is not needed, the swivel head can be locked by fitting an extra connecting pin in position 1.

- The fastening clamp (A) has to be pushed all the way into the floor prop.
  - Adjusting nut (B) has to be tightened into contact with the fastening clamp.





- Mount all the swivel heads on each table so that they point in the same direction.
- Always set up the tables so that the leverlatch of the swivel head points towards the edges of the floor-slabs (in the direction in which the tables will later be removed).



## **Dokamatic prop connection**

The Dokamatic prop connection makes it very easy to attach intermediate props to the table waling. Another application is for shoring edge-beams, i.e. for connecting props to Multi-purpose walings WS10 or WU12.



## Note:

Position intermediate props as near as possible to the respective markings.



### NOTICE

- An increase in the load-bearing capacity of the floor prop, and moment transfer such as with the Dokamatic swivel head 40, are not possible here!
- The main props of the table (at least 4 of them) must always be attached with a Dokamatic swivel head 40!

## Assembly

- Push the Dokamatic prop connection onto the floor prop and secure it with a Spring locked connecting pin 16mm.
- Unscrew the spindle of the prop connection as far as it will go.

With the aid of the floor prop, introduce the prop connection into the table waling, then turn it 90° and pull it downward.



- A Dokamatic prop connection
- **B** Spring locked connecting pin 16mm
- **C** Dokamatic table waling 12

> Turn the floor prop to fasten it to the table waling.



- The fastening clamp (A) has to be pushed all the way into the floor prop.
  - Adjusting nut **(B)** has to be tightened into contact with the fastening clamp.



# Structural design

### Note:

In accordance with EN 12812, a service load of 0.75 kN/m<sup>2</sup> and a variable load of 10% of a massive concrete floor-slab, totalling at least 0.75 kN/m<sup>2</sup>, but no more than 1.75 kN/m<sup>2</sup>, are allowed for (assuming a fresh-concrete density of 2500 kg/m<sup>3</sup>). Mid-span deflection has been limited to I/500.

The tables can be fitted with different formwork sheets. Closure widths and closure options have different effects on the table. The structural design is therefore split in two parts:

- Supporting construction with floor props
- Form-facing and closure options

## Supporting construction with floor props

Table format	see sior
Number of floor props per table waling	see ent
Form-facing and clo-	to b

the section headed 'System dimen-าธ'

the section headed 'Adapting to differ-

slab thicknesses' e selected depending on the slab thicks (see 'Form-facing and closure

options' in the 'Structural design' section)

NOTICE

Table applies only for use with Dokamatic swivel-head 40!

		Max. s		Max. c	losure '	x' [cm]				
at	d	Numb	er of floor	props		Form-facing and				
Ē	2 2	pe	r table wal	ing	H	closure options				
Table for	Type of I	2	3	4		Opt. 1	Opt. 2	Opt. 3		
		32	47	62	11	0 (= s	tandard	strip)		
	0 2)	29	43	57	11	20	20	40		
	5	28	41	55	1	30	30	60		
	ê	26	40	53	1	40	40	80		
		24	37	49	1	60	60	_		
	_	22	34	46	1	60	80	_		
		38	56	75		0 (= s	tandard	strip)		
8	<del>,</del> 20	35	52	69		20	20	40		
Ŀ.	X E	34	50	66	1	30	30	60		
ô	30c	32	48	63	1	40	40	80		
5	ЩŰ	30	44	59	1	60	60	_		
		28	42	55		60	80	_		
		45	65	88		0 (= s	tandard	strip)		
	8	41	60	80		20	20	40		
	×	40	58	77		30	30	60		
	rre	38	56	74		40	40	80		
	ш	36	52	69		60	60			
		33	49	64		60	80			
		41	62	80		0 (= s	tandard	strip)		
	0 2	37	57	74		20	20	40		
	5	36	55	71		30	30	60		
	e Se	34	53	68		40	40	80		
8	5	32	49	63		60	60			
4		30	46	59		60	80	—		
20		49	75	94		0 (= s	tandard	strip)		
2	)1)	45	69	88		20	20	40		
	XE	43	66	85		30	30	60		
	ure 30c	42	64	81		40	40	80		
	ШŸ	39	59	76		60	60			
		36	55	69		60	80	—		

		Max. s	lab thickr [cm]	Max. c	losure '	x' [cm]			
mat	orop	Numb per	er of floor table wal	props ina	For	Form-facing and closure options			
lo	ξb								
Table	Type o	2	3	4	Opt. 1	Opt. 2	Opt. 3		
		57	88	95	0 (= s	tandard	strip)		
8	00	53	81	95	20	20	40		
4	×	51	77	95	30	30	60		
lô	lle	49	74	95	40	40	80		
5	ш	45	69	89	60	60	—		
		42	65	78	60	80	_		
		41	59	79	0 (= s	tandard	strip)		
	0 2	37	54	71	20	20	40		
	50	35	51	67	30	30	60		
	e.	33	49	64	40	40	80		
	L I	30	45	59	60	60	_		
		28	41	55	60	80	_		
		49	72	94	0 (= s	tandard	strip)		
8	Q (	44	64	85	20	20	40		
LO.	XÊ	42	61	81	30	30	60		
lĝ	2.00x Eure	40	59	78	40	40	80		
10		37	54	71	60	60	_		
		34	50	66	60	80	_		
		57	84	95	0 (= s	tandard	strip)		
	00	52	75	95	20	20	40		
	×	49	72	95	30	30	60		
	lle	47	68	91	40	40	80		
	ш	43	63	84	60	60	_		
		40	58	77	60	80	_		
	~	52	79	95	0 (= s	tandard	strip)		
	0 2	47	71	93	20	20	40		
	50	44	68	88	30	30	60		
	e X	42	65	84	40	40	80		
	l II	39	59	77	60	60	_		
		36	55	71	60	80	_		
		62	94	95	0 (= s	tandard	strip)		
8	<del>,</del>	56	85	95	20	20	40		
4	× E	53	81	95	30	30	60		
lĝ	20c	51	78	95	40	40	80		
5.0	ШŸ	47	72	83	60	60	_		
		43	66	75	60	80			
		73	95	95	0 (= s	tandard	strip)		
	30	66	95	95	20	20	40		
	×	63	95	95	30	30	60		
	llre	60	92	95	40	40	80		
	ш	55	84	89	60	60	_		
		51	77	78	60	80	_		

1) inserted by min. 30 cm

2) Values also apply for intermediate props Eurex 30 with Dokamatic prop connection

## Form-facing and closure options

#### Note:

For detailed information on the formwork sheet and closure options, see the section headed 'Adaptation to building layout'.

#### Notes on dimension (x):

- The influence of the closure on the table will vary depending on which closure option (1 to 3) has been selected.
- The relevant table and the number of floor props needed is selected from the table 'Supporting construction with floor props', with reference to the values 'x' and the slab thickness 'd'.
- The width of the fitting-board needed is always 20 cm larger than the actual closure dimension 'x'.

## Formwork sheet with no closure (standard strip)

Max. slab thickness 'd' [cm]				Max. closure 'x' [cm]			
		Formwork sheet					
9767-272-01	3-SO 21mm	3-SO 27mm	Dokaplex 18mm	Dokaplex 21mm	DokaPly eco 18mm	DokaPly eco 21mm	Standard strip
1	50	85	70	95	35	50	0

## Formwork sheet + closure option 1

Max. slab thickness 'd' [cm]						Max. closure 'x' [cm]	
Formwork sheet							
	3-SO 21mm	3-SO 27mm	Dokaplex 18mm	Dokaplex 21mm	DokaPly eco 18mm	DokaPly eco 21mm	Fitting-board only (Opt. 1)
X	35	65	60	90	30	45	5
	25	50	55	75	25	40	10
	20	40	50	65	25	35	15
	—	35	45	60	20	30	20
	—	25	40	55	_	25	25
9767-221-01	—	20	35	45	_	20	30
	—	-	30	40	_	20	35
	—	_	25	35	_	—	40
	—	_	25	35		—	45
	—	—	20	30	_	—	50
	—	_	_	25	_	—	55
	—	_	—	25		—	60

#### Formwork sheet + closure option 2

Max. slab thickness 'd' [cm]					Max. closure 'x' [cm]		
× • 9767-224-01	3-SO 21mm	3-SO 27mm	Dokaplex 18mm	Dokaplex 21mm	DokaPly eco 18mm	DokaPly eco 21mm	Fitting-board with inser- tion beam, with no addi- tional propping (Opt. 2)
	60	95	60	95	40	70	20
	60	95	60	95	40	70	30
	50 / 35 <sup>1)</sup>	85 / 65 <sup>1)</sup>	60	95	25	45	40
	35	65 / 40 <sup>1)</sup>	60	85	20	45	50
	25	50 / 25 <sup>1)</sup>	55	70	—	40	60
	—	40	50	55	—	35	70
	—	35	45	45	_	30	80

Values apply only for tables covered with same-size sheeting 'wall-to-wall' (e.g. 60 cm wide) or with uniformly divided sheets (e.g. 30+30 cm) with the insertion beam set in the middle.

<sup>1)</sup> Value for sheets not uniformly divided (e.g. 50+10 cm).

## Formwork sheet + closure option 3



Values apply only for tables covered with same-size sheeting 'wall-to-wall' (e.g. 60 cm wide) or with uniformly divided sheets (e.g. 30+30 cm) with the insertion beam set in the middle.

<sup>1)</sup> Value for sheets not uniformly divided (e.g. 50+10 cm).

# Tables around edges of slab

Dokamatic tables for the edge zones can have attachments such as table platforms, sideguards, stop-end formwork, and downstand beams already integrated into the tables.



If possible, pre-mount the attachments to the table elements on the floor, while these are still on the stack.





**Risk of edge tables toppling over!** (due to cantilevering platforms, edge props that have been relocated towards the inside, stopend formworks, downstand beams)

- Secure all edge tables by tying back (A) every primary beam in the inner cantilever zone of the table.
- Do not release the table from the shifting device until tie-backs are fixed to prevent tipover.
- Also applies when setting down tables or putting them into temporary storage.



For details of the tie-back, see the section headed 'Tie-back solutions'.

## NOTICE

Always set up the edge tables so that the lever-latch of the swivel head points towards the edges of the floor-slabs (in the direction in which the tables will later be removed).



# Tie-back solutions



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- NOTICE
- When calculating the leg loads, allow for the additional forces imposed by the bracing!
- Attach the back-stay in such a way that the tableform is held in both directions and secured against twisting.
- Direction of pull of the back-stay (A) always 90° to the tableform. Oblique pull is not permitted!



# with Lashing strap 5.00m and Doka express anchor 16x125mm

Permitted tensile force per lashing strap: 10 kN

Follow the directions in the 'Lashing strap 5.00m' User Information booklet.

# Tie-back attached to the Dokamatic swivel head

 Hook in the Lashing strap 5.00m directly to the Dokamatic swivel head.



# Tie-back attached to the Dokamatic table frame

Pass the Lashing strap 5.00m around the bottom profile of the Dokamatic table frame.



- A Lashing strap 5.00m
- C Dokamatic table frame

Permitted tensile force for tie-back at the Dokamatic table frame: 5  $\ensuremath{\mathsf{kN}}$ 



- H ... Horizontal force
- V ... Resulting vertical force from H
- A ... Tie-back force

## Tie-backs for high tableforms

If necessary, two Lashing straps 5.00m can be joined together to form a longer back-stay.



## NOTICE

Only Lashing straps 5.00m with springloaded locking flap may be used!



**A** Lashing strap 5.00m (with spring-loaded locking flap)

## Anchoring in the ground

Prepare an anchorage point in the ground with the Doka express anchor – hook in the lashing strap and tension it.



Using plumbing struts, Dokamatic tables can be fixed so that they are resistant to either tensile or compressive forces.



- A Fixing in the direction of the primary beams
- B Fixing in the direction of the secondary beams

by means of:

- Plumbing strut 340 IB or 540 IB
- Prop head EB
- Doka express anchor



A Lashing strap 5.00m

B Doka express anchor

# The **Doka express anchor** can be re-used many times over.

Permitted load where $f_{ck,cube,current} \ge 10 \text{ N/mm}^2$ :	
<b>F</b> <sub>perm.</sub> = 10.0 kN (R <sub>d</sub> = 15.0 kN)	
(values apply to uncracked concrete)	

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Follow the Fitting Instructions!

Always perform a static check if other-make heavyduty dowels are used to fabricate anchorages in the floor slab.

Follow the manufacturers' applicable fitting instructions.

## Edge table with platform



## **Dokamatic table platform**

A pre-assembled, foldable, ready-to-use platform, 1.00 m wide, for convenient and safe working.

- 2 lengths of platform are available:
  - 2.45m for 2.50m wide Dokamatic tables
  - 1.95m for 2.00m wide Dokamatic tables
- High safety for edge tables
- Easy to mount a hammer is the only tool needed
- Integral connectors for system stop-end formwork
- 0.50m wide platform extension (system component)
- Fold-down railing to facilitate moving edge-tables into the inside of the building



- a ... 1.00m b ... 0.50m
- A Dokamatic table platform
- **B** Dokamatic platform profile 1.00m
- **C** Dokamatic platform extension

## Permitted service load without Dokamatic platform extension: 200 kg/m<sup>2</sup>

Load Class 3 to EN 12811-1:2003

Permitted service load with Dokamatic platform extension: 150 kg/m<sup>2</sup>

Load Class 2 to EN 12811-1:2003

## Assembly

### Preparing the Dokamatic table platform:

> Tilt up the guard rails and lock them in position.



#### Lifting the Dokamatic table platform:

Attach a four-part lifting tackle (e.g. Doka 4-part chain 3.20mm) to the Dokamatic table platform.



#### Fastening the platform to the Dokamatic table

- Mount Dokamatic platform profiles to the table with 2 Connecting pins 10cm for each platform profile, and secure them with spring cotters.
- Place the Dokamatic table platform onto the platform profiles, and secure it with Connecting pins 10cm and spring cotters.



a ... 1.00m

- B Dokamatic platform profile 1.00m
- D Connecting pin 10cm + Spring cotter 5mm

#### Example with Dokamatic platform extension

- Mount the Dokamatic platform profiles as described above.
- Place the Dokamatic table platform on the platform profiles - on the outermost holes - and secure with Connecting pins 10cm and spring cotters.
- Place the platform extension onto the platform profiles and secure it with Connecting pins 10cm and spring cotters.



- c ... Overall width 1.50m
- B Dokamatic platform profile 1.00m
- **C** Dokamatic platform extension
- D Connecting pin 10cm + Spring cotter 5mm

# Alternative fixing method using Splice plate Top50 Z

If no platform extension is needed, **Splice plates Top50 Z** can be used instead of the Dokamatic platform profiles.



a ... 1.00m

D Connecting pin 10cm + Spring cotter 5mm

E Splice plate Top50 Z

# Alternative fixing method using Formwork element connector FF20/50 Z

If no platform extension is needed, **Formwork element connectors FF20/50 Z** can be used instead of the Dokamatic platform profiles.



#### a ... 1.00m

**D** Connecting pin 10cm + Spring cotter 5mm

F Formwork element connector FF20/50 Z



✓ With this fixing method, the Formwork element connectors FF20/50/50 Z must be used with the slanted corner facing upwards, for structural design reasons.

## Transporting, stacking and storing



#### **Dimensions** [cm]

		Dokamatic table platform				
		1.00/2.50m	1.00/2.00m			
	а	245.0	195.0			
Γ	b	253.0	203.0			
Γ	С	23	9.0			
	d	122.0 25.5				
	е					

## Sideguards on exposed platform-ends

On platforms that do not completely encircle the structure, suitable sideguards must be placed across exposed end-of-platform zones.

#### Note:

The plank and board thicknesses given here comply with the C24 category of EN 338. Observe all national regulations applying to deckboards and guard-rail boards.

### Side handrail clamping unit T



- A Side handrail clamping unit T
- B Clamping component
- C Integrated telescopic railing
- D Guard-rail board min. 15x3 cm (site-provided)
- E Dokamatic table platform

#### How to mount:

- Fasten the clamping component to the floor planking of the pouring scaffold, using the wedge (clamping range 4 to 6 cm).
- Slot in the railing.
- Extend the telescopic railing to the desired length and secure it.
- Insert toeboard (guard-rail board).

## Edge table without platform

The floor prop **(A)** is located further towards the inside than on the standard table.

This leaves a sufficiently large area of table free to work on beyond the stop-end.

Safety railings can be erected using e.g. the Handrail post T 1.80m or Xsafe edge protection XP.



B Handrail post T 1.80m or Xsafe edge protection XP

## Handrail post T 1.80m



a ... 1.0 cm

Detail shown without platform decking and guard-rail boards

- A Connecting pin 110 + Spring cotter d3 (included in scope of supply)
- B Connecting pin 10cm + Spring cotter 5mm (not included in scope of supply)

## How to mount:

- Pin the Handrail post T 1.80m into the Dokamatic table waling and secure it.
- Fit on a Protective grating XP or guard-rail boards, and fix them in place.

## Xsafe edge protection XP

Follow the directions in the 'Xsafe edge protection XP' User Information booklet.

## Insertion adapter XP

The **Insertion adapter XP** is used in combination with the Handrail post XP, for erecting safety barriers in the direction of the secondary beams.

- Suitable for all sizes of table.
- Suitable for railing-heights of 1.20 m and 1.80 m.



- A Insertion adapter XP
- B Handrail post XP
- **C** Protective grating or guard-rail boards (site-provided)
- D Dokamatic table waling 12

## How to mount:

- Attach the Insertion adapter XP to the Dokamatic table waling with 2 Connecting pins 10cm and secure these with a Spring cotter 5mm.
- Working from below, push the Toeboard holder XP 0.60m onto the Handrail post XP 1.80m (not needed when using the Protective grating XP).
- Push the Handrail post XP into the post-holding fixture on the Insertion adapter XP until the locking mechanism engages.

 $\overline{}$  The locking mechanism must engage.

Fit on a Protective grating XP or guard-rail boards, and fix them in place.

## Dokamatic adapter XP



The Dokamatic adapter XP makes it possible to attach a Handrail post XP to a Dokamatic table.

- Suitable for all sizes of table.
- Integrated lowering function:
  - Tables can be stacked and stored without having to dismount the Dokamatic adapters XP.
  - Tables can be placed next to one another even if there are Dokamatic adapters XP mounted along abutting edges.
- Suitable for railing heights of 1.20 m and 1.80 m.
- When bolted in place, they are suitable for both lengthways and sideways safety barriers.

#### Note:

Mount the sideguards while the table elements (to which the Dokamatic table platforms have previously been mounted) are still on the stack.

#### Assembly

#### Possible positions on the Dokamatic table waling



The positions B and C shown here only apply to standard tables. On tables with 2 or 4 intermediate props, positions B and C may be changed as needed.

- A Standard upright for lengthways or sideways safety barrier
- B Extra upright for lengthways safety barrier
- C Extra upright for lengthways AND sideways safety barrier
- Bolt the Dokamatic adapter XP to the desired position on the Dokamatic table waling with 2 connecting pins and secure these with spring cotters.



A Dokamatic adapter XP

Use a hammer to pull out the recessed adapterpiece until the locking mechanism engages.



Push the Handrail post XP into the adapter until the locking mechanism engages ('Easy-Click' function).



- The locking mechanism must engage. The Handrail-post plates must be facing towards the inside of the barrier.
- Fit on a Protective grating XP or guardrail boards, and fix them in place.

#### Dismantling

Slightly lift the Handrail post XP and press in the bottom locking mechanism.



- > Lower the Handrail post XP. This deactivates the Easy-Click function.
- Then pull out the Handrail post XP straight upwards.

#### with Protective gratings XP

#### **Recommended lengths of grating**

	Dokamatic table			
	2.00x4.00m	2.00x5.00m	2.50x4.00m	2.50x5.00m
Sideways	2.00m	2.00m	2.50m	2.50m
Lengthways	2.00 + 2.50m <sup>1)</sup>	2.50 + 2.70m <sup>1)</sup>	2.00 + 2.50m <sup>1)</sup>	2.50 + 2.70m <sup>1)</sup>

<sup>1)</sup> only 1 Handrail post XP required in middle

#### **Practical examples**







- C Extra upright for lengthways AND sideways safety barrier

### Note:

The safety barrier can also be erected with guard-rail boards or scaffold tubes.
#### Structural design

#### used in combination with Handrail post XP 1.20m

		Permissible influence width 'e' [m]								
, Peak velocity pressure q [kN/m²]	Protective gratings XP 2.70x1.20m	2.5 x 12.5 cm <sup>1)</sup>	2.4 x 15cm	3 x 15cm	4 x 15cm	spreod 3 x 20cm	4 x 20cm	5 x 20cm	Scaffold tubes 48.3mm <sup>2)</sup>	Gap-free boarding
0.2		1.8	1.9	2.7	3.6	2.9	3.4	3.4	5.0	1.8
0.6	25	1.8	1.9	2.7	3.3	2.4	2.4	2.4	5.0	1.3
1.1	2.5	1.8	1.8	1.8	1.8	1.3	1.3	1.3	5.0	0.7
1.3		1.8	1.5	1.5	1.5	1.1	1.1	1.1	4.4	0.6

 $^{1)}$  with toeboard 3 x 20 cm, 4 x 20 cm or 5 x 20 cm

<sup>2)</sup> with toeboard 5 x 20 cm

# used in combination with Handrail post XP 1.20m and 0.60m or Handrail post XP 1.80m

		Permissible influence width 'e' [m]								
Peak velocity pressure q	Protective gratings XP 2.70x1.20m and 2.70x0.60m	2.5 x 12.5 cm <sup>1)</sup>	2.4 x 15cm	3 x 15cm	4 x 15cm	3 x 20cm	4 x 20cm	5 x 20cm	Scaffold tubes 48.3mm <sup>2)</sup>	Gap-free boarding
0.2		1.8	1.9	2.7	3.6	2.9	3.3	3.3	5.0	1.5
0.6	25	1.8	1.9	2.7	2.8	2.1	2.1	2.1	5.0	0.9
1.1	2.0	1.8	1.5	1.5	1.5	1.1	1.1	1.1	3.7	0.5
1.3		1.6	1.3	1.3	1.3	1.0	1.0	1.0	3.2	0.4

<sup>1)</sup> with toeboard 3 x 20 cm, 4 x 20 cm or 5 x 20 cm

<sup>2)</sup> with toeboard 5 x 20 cm

### Edge table in the corner zone

Safe corner solutions with integrated columns are possible at the slab-edge, using the Dokamatic table and standard components.

- High safety only a small number of separate parts needed at the slab-edge.
- Max. slab thickness: 30 cm



- A Formwork sheet 3-SO (closure zone)
- **B** Additional propping (Multi-purpose waling WU12 Top50 and Doka floor props)
- **C** Additional Doka beam H20
- D Railing clamp XP 40cm
- **E** Board, 25x25x5cm (screwed onto the Doka beam H20)
- F Handrail post XP 1.80m
- G Protective grating or guard-rail boards (site-provided)

#### Note:

For constructing edge tables in corner zones, consult your Doka technician!

### Slab stop-ends

### with Framax universal corner waling





b ... Adjusting range from 57 cm c ... 6 to 16 cm

d ... slab thickness max.40 cm

# Variant: Universal corner waling mounted on table platform



- A Framax panel
- B Framax universal corner waling
- C Dokamatic edge clamp
- **D** Super-plate 15.0
- E Tie rod 15.0 approx. 25 cm long

#### Note:

After having erected the formwork and made the last fine adjustments, firmly tighten the Super-plate 15.0 once again (to pre-tension it).



Use a 20 mm diameter bit to drill the hole through the form-ply.

Unneeded clamping holes should be closed off on the site with Universal plugs R20/25.



Wherever possible, use tables in the same way every time, e.g. always as edge tables this prevents holes being drilled in the tables unnecessary.

### with Dokamatic end-shutter unit





- b ... Adjusting range from 10 cm to 58 cm d ... Slab thickness: See data-table
- A Framax framed formwork panel
- B Dokamatic end-shutter unit 50cm
- **C** Framax clamping bolt 4-8cm
- D Super-plate 15.0

Connecting devices between Dokamatic table platform and table	Platform width [m]	Max. thickness of slab 'd' [cm]
Dokamatic platform profile 1.00m	1.00	50
Splice plate Top50 Z	1.00	40
Formwork element connector FF20/50 Z	1.00	40

Max. loading of the Dokamatic table platform during pouring: 150 kg/m<sup>2</sup> (applies to all variants where the stop-end formwork is supported on the platform). Load Class 2 to EN 12811-1:2003

# with Universal end-shutter support 30cm





	Max. influence width: a for slab thickness of [cm]			
How fastened:	Configuration	20	25	30
4 nails 3.1x80	A	90	50	30
4 Spax screws 4x40 (fully threaded)	В	220	190	160

#### fastened with nails (configuration A)



- d ... slab thickness max.30 cm
- A Universal end-shutter support 30cm
- B Nail 3.1x80
- **C** Doka formwork sheet 3-SO



#### Tip for striking formwork:

> Take out the nails on the stop-end side.

- Put the claw of a hammer under the corner (put a piece of wood under it to protect the formwork sheeting)
- Lever up the end-shutter support



#### fastened with Spax screws (configuration B)



- d ... slab thickness max.30 cm
- A Universal end-shutter support 30cm
- C Doka formwork sheet 3-SO
- **D** Spax screws 4x40 (fully threaded)
- E Doka beam H20

# Edge table with downstand beam

#### With Dokamatic drop beam plate 60cm



- For downstand beams of between 20 and 60 cm, in 5 cm increments (intermediate dimensions possible by means of project-specific adaptation)
- Quick and easy to mount (Connecting pin 10cm)
- Support for side Doka beams H20
- Minimal planning costs/times
- Extra anchoring for custom constructions

### with Bridge edge beam clamp T 0.40m



Suitable for stop-end heights of up to 65 cm



b ... dependent on the length of the multi-purpose waling (J) and on the load-bearing capacity of the floor prop placed beneath it (N) .

- A Dokamatic table (standard version)
- **B** Dokamatic drop beam plate 60cm
- **C** Dokamatic front wood strip 4x8cm 2.60m
- D Formwork sheet
- E Doka beam H20 top
- **F** Framax panel (size as needed)
- J Multi-purpose waling WS10 Top50
- K Insertion adapter XP
- L Handrail post XP
- (optionally with Toeboard holder XP)
- M Connecting pin 10cm
- N Spring cotter 5mm
- O Floor prop Eurex top
- **P** Dokamatic prop connection
- **Q** Spring locked connecting pin 16mm
- R Bridge edge beam clamp T 0.40m

#### Note:

After erecting the formwork and final adjustments have been made, tighten the clamping wedge of the Bridge edge beam clamp T until the hammer rebounds from the clamping wedge.

Influence width [m]	Stop-end height d [cm]
1.25	65.0
1.75	55.0

#### NOTICE

Secure the deck-boards with strips of formwork sheeting so that they cannot tip over (screw them on with e.g. Torx 6x60). Any cut-outs in the platform decking around the bridge edge beam clamps can be covered with nailed-on strips of formwork sheeting where necessary.



#### Section A-A



- **Q** Bridge edge beam clamp T 0.40m
- **R** Strip of formwork sheeting (to prevent deck-boards tipping)
- **S** Strip of formwork sheeting (to cover cut-outs)

#### Note:

Always locate the strip of formwork sheeting **(R)** on the outside U-section of the multi-purpose waling. Always locate the Bridge edge beam clamp T 0.40m on the inside U-section of the multi-purpose waling.

### with spindle strut

Suitable for stop-end heights of up to 90 cm.



On larger downstand beams, this option makes it necessary to use Multi-purpose walings WU12. Revised static calculation is required here.



b ... dependent on the length of the multi-purpose waling and on the load-bearing capacity of the floor prop

- d ... max. 90 cm
- A Dokamatic table (standard version)
- **B** Dokamatic drop beam plate 60cm
- **C** Dokamatic front wood strip 4x8cm 2.60m
- D Formwork sheet
- E Doka beam H20 top
- F Frami panel (size as needed)
- G Multi-purpose waling WS10 Top50
- H Spindle strut T7 75/110cm
- I Corner plate FF20 G
- J Insertion adapter XP
- K Handrail post XP (with Toeboard holder XP)
- L Connecting pin 10cm
- M Spring cotter 5mm
- N Floor prop Eurex top
- O Dokamatic prop connection
- P Spring locked connecting pin 16mm
- **Q** Framax universal fixing bolt 10-16cm + Super plate 15.0

### NOTICE

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Secure the deck-boards so that they cannot tip over, and cover any gaps in the platform decking, in the same way as shown for the 'Variant with Bridge edge beam clamp T 0.40m'.



# Repositioning

## **General instructions on repositioning**



1

### WARNING

- > 'Passenger transportation' is forbidden!
- Before repositioning the tableform, remove all loose items (e.g. fitting boards) from it.
- Check the connections between the floor props and the tableform before repositioning it.

#### NOTICE

# Observe the following points when repositioning / travelling tableforms horizontally:

- There must be a flat, firm (e.g. concrete), adequately dimensioned floor that is capable of supporting the load.
- Max. permitted inclination of trackway: 3 %
- Min. height of tables: 2.00 m.
- Take particular care with:
  - height offsets
  - steps
  - floor holes and wall openings
  - tight spaces
  - strong winds
- It is forbidden to use any other mechanical assistance for the travelling operation!
- For longer breaks between operations, or when the shifting device is permanently parked, it must not be carrying any formwork.

#### NOTICE

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### When tableforms are left free-standing (short-term intermediate storage), the following conditions must be met:

- There must be a firm horizontal surface.
- No attachments such as table platforms, safety barriers, downstand beams, etc.
- Max. height of tables: 4.0 m (with Dokamatic table frame max. 5.0 m).
- Max. wind speed: 72 km/h.

If these conditions are not met, the tables must be secured with a suitable **tie-back** (see the section headed 'Tie-back solutions')!

#### NOTICE

• The table must not be loaded - not even temporarily with e.g. a stack of panels - until it has been completely erected according to plan (i.e. with all intermediate props).

## Horizontal repositioning / travelling

### **DoKart plus**

The DoKart plus is a battery-powered lifting appliance that allows Doka tableforms to be travelled by just one man.

The battery is designed to allow 1 whole day's operation before being recharged on mains electricity overnight.

The tableforms are lifted and lowered hydraulically.



Max. travel speed: 5 km/h (walking pace)

Max. load, where load is applied centrally:

- without Stacking frame DF: 1950 kg
- with one Stacking frame DF: 1868 kg
- with two Stacking frames DF: 1786 kg
- with three Stacking frames DF: 1704 kg

Follow the directions in the Operating Instructions!

#### Intended use

1

The DoKart plus and the stacking frames may only be used for repositioning Dokaflex, Dokamatic and DokaXdek tables.

### Height adjustment

The **Stacking frame DF** is used for increasing the height range.



- A DoKart plus carrying frame
- B Stacking frame DF
- **C** Distribution beam (Doka beam H20 2.65m)
- D Brace stirrup 8

#### Height ranges incl. distribution beams

Number of Stacking frames DF	h min. [cm]	h max. [cm]
0	174.0	344.0
1	249.0	419.0
2	324.0	494.0
3	399.0	569.0

#### Assembly instructions for Stacking frame DF:

Bolt the stacking frame to the carrying frame of the DoKart plus with M12 threaded fasteners (4 of), or to another stacking frame already bolted into position.



Nuts, bolts etc. are included in the scope of supply of the Stacking frame  $\ensuremath{\mathsf{DF}}$  .

- A Carrying frame of DoKart plus, or another Stacking frame DF
- B Stacking frame DF
- E Hexagon bolt M12x40
- F Hexagon nut M12
- G Washer A13
- H Spring washer A12

### **Distribution beams**

# NOTICE Before ta

Before tableforms can be repositioned, 2 extra distribution beams must be installed.



### WARNING

A Risk of injury when the DoKart plus with projecting distribution beams is moved!

Use distribution beams 1.80m long on the DoKart plus without stacking frame!

#### Selecting the right distribution beams:

	Length of distribution beams
	(Doka beams H20)
	L = 1.80m
without stacking frames	9767-344-01
	L <sub>min</sub> = 2.65m
with stacking frames	9767-343-01
	L <sub>min</sub> = a + 1.0m
<b>with</b> Dokamatic table frames	9767-342-01 C A

A Distribution beam (Doka beam H20)

**B** DoKart plus carrying frame

- C Stacking frame DF
- D Dokamatic table frame 1.50m

#### Fitting the distribution beams:

Attach both (Doka beams H20) to the carrying frame of the DoKart plus, or to the Stacking frame DF, with two Brace stirrups 8 in each case.

Arrange the distribution beams symmetrically, spaced max. 900 mm apart.



c ... max. 900 mm

A Distribution beam (Doka beam H20)

- **C** Brace stirrup 8 (four of these are supplied with the DoKart plus)
- D Carrying frame of DoKart plus or Stacking frame DF

### Additional measure for tableforms with 3 or 4 floor props per table waling

#### NOTICE

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# Collision of additional swivel heads with the carrying frame of the DoKart plus!

- For repositioning tableforms with 3 or 4 floor props per table waling, double up by laying squared timbers on top of the distribution beams!
- Secure each squared timber to its distribution beam with Spax screws 5x80 set every 0.5 m.
- Secure each distribution beam and squared timber to the carrying frame of the DoKart plus with Brace stirrups 8.



- A Distribution beam (Doka beam H20)
- **B** Squared timber 5x8 cm (length = length of distribution beam)
- **C** Brace stirrup 8
- D Carrying frame of DoKart plus or Stacking frame DF
- E Dokamatic swivel head 40

# Additional measure for tableforms with Dokamatic table frames

### !

NOTICE Before it can be used for 5.80 m to 7.30 m high tableforms with Dokamatic table

frames, the DoKart plus must first be fitted with an **Extension set for DoKart plus**.





Follow the directions in the Operating Instructions!



- h ... 5.80 m to max. 7.30 m
- A Extension set for DoKart plus
- B DoKart plus
- C Dokamatic table with Dokamatic table frame 1.50m

## Positioning under the tableform

### NOTICE

 Bolt on the fastening clamps (A) of the floor props from the inside to the outside, so that they are facing outward and do not obstruct the DoKart plus when it moves in under the table.



 The outriggers of the DoKart plus extension set (if fitted) must also be completely pushed in.

Depending on the size of the table and the situation on the site, the DoKart plus is travelled under the table either from one end or one side of the table.



The carrying frame of the DoKart plus and the Stacking frame DF come with centre markings (red arrows).

These make it easier for them to be positioned centrally beneath the tables.

### NOTICE

# Points to remember with unsymmetrical tables:

'Central positioning' means 'central' in terms of the load centre.

Take particular care with unsymmetrical tables (edge tables, tables with stop-ends).

Max. permitted eccentric position for the load centre: a = max. 200 mm b = max. 100 mm.



### Travelling the tableform



9767-348-01

b ... max. 10 cm

# Setting down and positioning the tableform

Before setting down the table, push the fastening clamps (A) of the floor props through from the inside to the outside so that they are not an obstruction when the DoKart plus is moved out from under the table.



- The fastening clamp (A) has to be pushed all the way into the floor prop.
- Adjusting nut **(B)** has to be tightened into contact with the fastening clamp.



- The outriggers of the DoKart plus extension set (if fitted) must be completely pushed in.
- Check the wedge-clamped joins between the floor props.

# Vertical repositioning with transport forks

The transport fork can be used to move tableforms out from under the cast floor-slab and to reposition them.

#### Note:

- Ensure correct centre-of-gravity position!
  - Required minimum width of the forks:  $1/_3$  of the width of the table
  - Required minimum length of the forks: 2/3 of the length of the table
- For additional measures for repositioning tables carried at right angles to the forks or repositioning custom tables (downstand beams, 2 connected tables, ) consult your Data technician!
  - ...) consult your Doka technician!

### Transport fork 1.3t adjustable

- Adjustable fork width and fork length
- Integrated tag-lines
- Three attachment possibilities for 2-part lifting chains for optimum (horizontal) transport of the table
- Attaching/detaching the 2-part lifting chain is easy in the parking position (bracket tilts down when lowered to the ground
- Additional table fixing part (art. n° 586260000) for securing tableforms at right angles to the direction of the fork



I ... 275, 324, 373 or 422 cm h ... 385 cm



 Table along the forks
 Table at right angles to the forks (e.g. balcony table)

 Image: the forks of the forks (e.g. balcony table)
 Image: the forks (e.g. balcony table)

 Image: the forks of the forks (e.g. balcony table)
 Image: the forks (e.g. balcony table)

I ... Fork length (min. 2/3 table length)

x ... Length of table

A Transport-fork table-fixing part 1.3t adj. (optional)

### Transport fork DM 1.5t (adjustable)

- Adjustable fork width
- Integrated tag-lines
- Fork marks for optimum (horizontal) transport of the table
- Attaching/detaching the 2-part lifting chain is easy in the parking position (bracket tilts down when lowered to the ground
- Additional vertical extension (art. n° 586235000) for repositioning tableforms over two storeys



h ... 421 cm

i

Max. working load limit: 1500 kg (3300 lbs)

Follow the Operating Instructions!



Table at right angles to the forks



a ... Beam length of extension (max. 1.80 m)

 $b \dots max. \ 3 \ x \ beam \ length \ of extension (otherwise table has to be secured)$ 

c ... max. 300 mm

- A Extension clamp H20 for fork
- E Dokamatic table
- F Doka beam H20

When lifting a table at right angles to the forks, secure Doka beams H20 to the fork profiles at right angles to the fork axis.



#### WARNING Tableform falling-hazard!

Using the Doka beams H20 in this way deactivates the lever-latch so that it no longer acts as an anti-slide-off guard.

Do not use the transport fork for regular lifting operations if Doka beams H20 are mounted to it!

#### Lifting tables over two storeys

The Lifting extension bracket of the transport fork is lengthened with the Vertical extension DM 3.30m.



a ... 7500mm

F Vertical extension DM 3.30m

#### Repositioning 2 tables jointly

If required, the Transport fork DM 1.5t adjustable can be used to reposition 2 Dokamatic tables jointly.



# Repositioning edge tables with downstand beams

On tableforms with downstand beams, the space left empty between the transport fork and the table can be bridged with e.g. a timber construction consisting of an Extension profile H20, Extension clamp H20 and Doka beams H20.



a ... 2250 mm

- b ... max. 600 mm
- A Extension clamp H20 for fork
- I Extension profile H20 for fork
- E Edge table with downstand beam
- F Doka beam H20 2.65m

# Loading platform

Where necessary, a loading platform can be assembled from Doka standard components.

Using the Dokamatic lifting straps 13.00m, the Dokamatic tables are lifted off the loading platform and up to the next level.



#### Note:

For assembling a loading platform, consult your Doka technician!

# **Repositioning operation**

# 

The fastening clamp of the floor prop can work

loose during transport and possibly drop out.
 Use the adjusting nut (B) to hold the fastening clamp (A) in place at the top or bottom end of the slot (depending on whether the outer tube (C) is at the bottom or the top).



Wheel the table to the pick-up point with the DoKart plus, making sure that the lever-latch of the swivel head always points in the direction in which the table is to be removed.



- A Lever-latch of the swivel head
- > Set the table down.
- Wheel out the DoKart plus from under the table (the next table can now be prepared for repositioning).
- > Manoeuvre the transport fork under the table.



- > Pick up the table with the transport fork.
- Push up the lever-latch on the swivel head (this can be done with a plank of wood if the latch is too high to reach by hand).

► Tilt up the prop.



Snap the swivel head into the 75° or 90° position.



> Lift the table out, and up to next storey.



- Slightly raise the floor prop.
- Lift the lever-latch on the swivel head.



- Swing the floor prop down into its operational position and latch it in place.
  - Check that the swivel head is properly engaged - the lever-latch of the swivel head must be pointing parallel to the table waling!



> Set the table down at its new location.





!

### NOTICE

Before setting down the table, push the fastening clamps (A) of the floor props through from the inside to the outside so that they are not an obstruction when the DoKart plus is moved out from under the table.



- The fastening clamp (A) has to be pushed all the way into the floor prop.
  - Adjusting nut (B) has to be tightened into contact with the fastening clamp.



#### NOTICE

- The outriggers of the DoKart plus extension set (if fitted) must be completely pushed in.
- Check the wedge-clamped joins between the floor props.

# Lining-and-levelling the Dokamatic tables

### I NOTICE

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- Before lining-and-levelling, check whether all the floor props are under load. Only props that are actually standing on the ground can be lined-and-levelled.
- Check the wedge-clamped joins on the swivel heads.
- The fastening clamp (A) has to be pushed all the way into the floor prop.
- Adjusting nut **(B)** has to be tightened into contact with the fastening clamp.



### NOTICE

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Follow the directions in the section headed 'Setting down and positioning the tableform'!

#### Plastic mallet 4kg:

- For fine-positioning a tableform quickly without using any shifting devices.
- Integrated base makes it easy to put the mallet on 'stand-by'.
- The mallet has been designed with just the right weight and with plastic of the right hardness to prevent damage.





### WARNING

#### **Risk of tableform tipping over!**

Striking the floor props too hard causes accidental loosening of the fastening clamp or of the swivel latch of the swivel head.

- Use only moderate force when striking with the plastic mallet. Max. mallet backswing distance 50 cm!
- Give just one knock to each floor prop at a time, then move on to the next prop!
- Strike only the bottom part of the floor prop.

# **Table Lifting System TLS**

### Doka Table Lifting System TLS - for vertical lifting of Doka tableforms with no need for a crane

The Doka Table Lifting System TLS is used for moving Doka tableforms up to the next floor.

It is also suitable for transporting Doka equipment between floors, in suitable multi-trip packaging containers (always comply with the loading data and loading rules for the Table Lifting System).

#### NOTICE

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'Passenger transportation' with the Table Lifting System TLS is forbidden. (Exception: for carrying out site-assembly and maintenance work)

A comprehensive system of safety features makes for fast, safe working, both when operating the Table Lifting System itself and when cycling tables.

With the Doka Table Lifting System TLS you can even carry on cycling tables safely during strong winds (up to max. 72 km/h).

#### NOTICE

All work in connection with assembly & erection, dismantling, and the first time of putting into service, must be supervised by certified Doka specialists.

- The crew who are going to operate the Doka Table Lifting System TLS need special skills and knowledge which can only be passed on by certified Doka specialists.
- As proof that they have received such special instruction, a certificate is issued to persons who have undergone this training.
- Persons who do not have this certificate are not allowed to start up or use the Doka Table Lifting System TLS.



# **Product description**



#### A Basic unit TLS

- **B** Lifting platform TLS centre 3.00x1.60m
- C Lifting platform TLS back 3.00x1.60m
- D Protective grating TLS 1.80m
- E Protecting metal sheet TLS
- F Lifting mast TLS 1.50m
- **G** Supporting profile TLS 5.15m
- H Pressure strut TLS 3.70m
- I Floor support TLS 0.40m
- J Adjusting device TLS
- K Beam for landing level safety gate TLS 0.40m
- L Landing level safety gate TLS with handle
- ${\bf M}\,$  Landing level safety gate TLS w. limit switch
- N Switch box TLS ground control
- **O** Switch box TLS landing level safety gate
- P Lifting cross-bar TLS
- **Q** Lifting beam TLS 67kN (in 'parked' position)

### **Bottom to top-floor height**

- standing on ground and working from ground level: max. 100 m
- when suspended from floor-slab: max. 15 m

### Lifting platform TLS

Max. load: when lifting: 1650 kg during loading: 2650 kg

- Loading area:
  - Entrance width: 2.70 m
  - (3.20 m between lifting masts)
  - Length: 4.93 m



- Integral railings
- Integral loading gates
- Integral loading ramp
- Protective grating TLS 1.80m may also be mounted if desired

### Landing level safety gates

- For safeguarding the loading and offloading points
- Landing level safety gates for every floor
- Integral control for every floor

### **Drive mechanism**

The Table Lifting System is driven electromechanically.

Required supply voltage: 400V/50Hz (fuse protection min. 3 x 32A, slow-blow)

### Lifting speed

- Starting speed: 5 m/min.
- Lifting speed: 10 m/min.

## Loading data

# Anchoring forces per suspension point





A Temporary reshore (locate as statically required)

# Floor support TLS 0.40m for max. 7 lifting mast sections (max. bottom to top-floor height 10.5 m)

Inter-floor dis- tance	Vertical reac- tion force	Tension	Forces on dowel	Horizontal shoring force	
	F <sub>Z(1)B,k</sub>	F <sub>Z(1)A,k</sub>	F <sub>Y(1),k</sub> (90° to Fx)	F <sub>X(1),k</sub>	F <sub>X(0),k</sub>
2.65 m	73 kN	26 kN	4 kN	32 kN	37 kN
3.00 m	73 kN	26 kN	4 kN	28 kN	33 kN
4.50 m	73 kN	26 kN	4 kN	18 kN	22 kN

#### Floor support TLS 0.40m for max. 10 lifting mast sections (max. bottom to top-floor height 15 m)

Inter-floor dis-	Vertical reac- tion force	Tension	Forces on dowel	Horizontal shoring force	
tanoc	F <sub>Z(1)B,k</sub>	F <sub>Z(1)A,k</sub>	F <sub>Y(1),k</sub> (90° to Fx)	F <sub>X(1),k</sub>	F <sub>X(0),k</sub>
2.65 m	79 kN	28 kN	5 kN	34 kN	39 kN
3.00 m	79 kN	28 kN	5 kN	30 kN	35 kN
4.50 m	79 kN	28 kN	5 kN	20 kN	25 kN

#### Lifting mast anchoring TLS cross bar 0.40m

Inter floor die	Vertical reac-	Forces on dowel				
tance	tion force	Shear				
tanoo	F <sub>Z(2),k</sub>	F <sub>Y(2),k</sub> (90° to Fx)	F <sub>X(2),k</sub>			
2.65 m	2 kN	16 kN	16 kN			
3.00 m	2 kN	16 kN	14 kN			
4.50 m	2 kN	16 kN	11 kN			
7.00 m	2 kN	8 kN	10 kN			

#### Lifting mast anchoring TLS wall

Inter-floor dis-	Vertical reac- tion force	Forces on dowel Shear			
tanoc	F <sub>Z(2),k</sub>	F <sub>Y(2),k</sub> (90° to Fx)	F <sub>X(2),k</sub>		
2.65 m	2 kN	4 kN	20 kN		
3.00 m	2 kN	4 kN	20 kN		
4.50 m	2 kN	4 kN	20 kN		
7.00 m	2 kN	3 kN	17 kN		

# Subgrade reaction when stood on ground

Bottom to top-floor height	10 m	20 m	30 m	40 m	50 m	60 m	70 m	80 m	90 m	100 m
Total weight per mast- side	3551 kg	4166 kg	4701 kg	5316 kg	5956 kg	6491 kg	7106 kg	7721 kg	8281 kg	8896 kg
Subgrade reaction	143 kN/m <sup>2</sup>	167 kN/m <sup>2</sup>	189 kN/m <sup>2</sup>	213 kN/m <sup>2</sup>	239 kN/m <sup>2</sup>	260 kN/m <sup>2</sup>	285 kN/m <sup>2</sup>	309 kN/m <sup>2</sup>	332 kN/m²	356 kN/m²

# Areas of use, possible configurations



Follow the directions in the 'Doka Table Lifting System TLS' Operating Instructions!

#### Note:

Check the Doka Table Lifting System TLS after assembly and every time before start-up, as described in the Operating Instructions.

# Standing on ground and working from ground level

#### System dimensions:



- a ... 1.35 m (landing level safety gates mounted to the floor supports) a ... 1.60 m (landing level safety gates mounted to the Beam for landing level safety gate)
- b ... max. 7.00 m (spacing between the anchorages) c ... max. 4.50 m
- (lifting height above the top lifting mast anchoring)
- d ... max. 100 m
- e ... min. 0.30 m
- A Switch box TLS landing level safety gate
- **B** Switch box TLS ground control
- C Cable reel

- D Safety barrier at edge of slab
- **E** Lifting mast anchoring TLS

#### Space required:



- f ... 4.60 m
- g ... 5.80 m h ... 1.90 m
- n ... 1.90 m
- E Lifting mast anchoring TLS
- ${\bf K}~$  Landing level safety gate TLS

#### Note:

If the bottom to top-floor height is between 40 m and 100 m, then the Cable-reel set TLS 100.00m must be used instead of the Cable reel TLS 40.0m (mounted to the Basic unit TLS).

#### Note:

The Switch box TLS ground control and the Switch box TLS landing level safety gate each come with a 10 m control cable permanently attached.

If these switch boxes are too far (> 10 m) away from the Switch box for cable-reel, then Control cables TLS 20.0m will be needed as extension cables.

### Suspended from the floor-slab

#### System dimensions:



- a ... min. 2.65 4.50 m
- b ... max. 7.00 m (spacing between the anchorages) c ... max. 4.50 m
- (lifting height above the top lifting mast anchoring)
- d ... max. 14.80 m
- e ... min. 0.30 m
- f ... 4.95 m
- D Safety barrier at edge of slab
- E Lifting mast anchoring TLS
- F Floor support TLS 0.40m
- G Adjusting device TLS
- H Lifting cross-bar TLS
- I Supporting profile TLS 5.15m
- J Pressure strut TLS 3.70m

#### Space required:



K Landing level safety gate TLS

#### Note:

If the total lifting height does not exceed 4.50 m (1 storey), then no lifting mast anchoring is needed.

### Loading platform

The Doka Table Lifting System TLS can also be used as a loading platform.

Usage situation:

 After the top floor has been completed, the Doka tableforms are craned off the building using Dokamatic lifting straps 13.00m or Transport forks.

# Repositioning and aligning the Table Lifting System



Follow the directions in the 'Doka Table Lifting System TLS' Operating Instructions!

#### Note:

Only position the Table Lifting System in slab-edge zones that have no projecting parts.

A Lifting cross-bar TLS must be mounted to each of the Lifting masts TLS (with the lugs on the side nearest the motor) before the Table Lifting System can itself be lifted and repositioned).



A Lifting cross-bar TLS 10.50m

B Lifting cross-bar TLS 15.00m

Later, the Lifting beam TLS 67kN (which is guided by the crane hook) will be attached to these Lifting cross-bars TLS.



A Lifting cross-bar TLS

B Lifting beam TLS 67kN

After the crane-lifting operation, the Lifting beam TLS 67kN is replaced in the holding fixture on the Lifting platform TLS.



B Lifting beam TLS 67kN

C Lifting platform TLS back 3.00x1.60m



In order to shorten the distances travelled when setting up and striking the formwork, it may be helpful to reposition the Table Lifting System several times on one floor.

Follow the directions in the 'Lifting beam TLS 67kN' Operating Instructions!

### Aligning the Table Lifting System

Depending on how far the slab-edges are out of true in the vertical, there are two possible alignment methods:

- Spindles in the Floor supports TLS
- Fitting wedges between the Supporting profiles and the floor-slab, or setting the distance with the Adjusting device TLS



- A Adjusting device TLS
- B Doka Express anchor 16x125mm

# **Repositioning Doka tableforms**

With the DoKart plus, only one person is needed on each storey to manoeuvre the Doka tableforms. During the automatic lifting operation, the next Doka tableform is readied for lifting, while on the floor above, the previous tableform is moved to its proper location.



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Follow the directions in the 'DoKart plus' Operating Instructions!

### **General instructions on repositioning**

#### NOTICE

- Tables must be stood stably, and able to withstand wind loads, in every phase of the construction work.
- Max. wind speed during resetting: 72 km/h.
- No persons or unsecured objects are allowed to be on the table or the Table Lifting System TLS during lifting and travelling.

### **Repositioning operation**

#### **Floor below**

- > Send the Lifting platform TLS to the floor in question.
- > Open the landing level safety gates.
- Lower the loading ramp and open the gates of the lifting platform.



- Set down the table on the lifting platform. The person operating the DoKart plus must always be on the building side.
- > Move out the DoKart plus from under the table.
- Secure and tie down the table if necessary (required for edge tables with an integral downstand beam, platforms, ...).

There are crane eyes on the lifting platform for tying back the Doka tables if necessary.

 Close the gates of the Lifting platform and tilt up the loading ramp. Close the landing level safety gates.



Raise the table to the next floor on the lifting platform.

#### Floor above:

- > Open the landing level safety gates.
- Lower the loading ramp and open the gates of the lifting platform.
- > Wheel the table off the platform.



- Close the gates of the Lifting platform and tilt up the loading ramp.
- Close the landing level safety gates.
- Send the Lifting platform TLS back down to the floor below.



After the last table has been repositioned, the DoKart plus can then be moved up to the next floor by the Table Lifting System.

# Anchoring on the structure

# ! | M

NOTICE

The system is typically anchored to the structure using the **Tie rod system 15.0**.



#### **Risk of confusion!**

When the system is combined with Doka automatic climbing systems, the **Tie rod** system 20.0 must be used throughout the entire project.

This also applies to combinations with guided climbing systems (e.g. Guided climbing form-work Xclimb 60).

# Positioning point and suspension point



- A Universal climbing cone 15.0
- **B** Sealing sleeve K 15.0 (expendable anchoring component)
- C Cone screw B 7cm
- **D** Stop anchor 15.0 (expendable anchoring component)
- F Depth mark

#### • Universal climbing cone 15.0

- The positioning point and the suspension point are both prepared using this one single type of cone
- Stop anchor 15.0
  - Expendable anchoring component for anchoring the universal climbing cone (and thus the climbing unit) in the concrete from one side.

#### Cone screw B 7cm

- On the positioning point for fastening the universal climbing cone.
- On the suspension point for safe fastening of the floor support, of the beam for landing level safety gate, and of the lifting mast anchoring.

#### Stop anchor



	Stop anchor 15.0			
	11.5cm	16cm	40cm	
а	11.5 cm	16.0 cm	40.0 cm	
b	17.0 cm	22.0 cm	46.0 cm	
	Where the concrete cover 'd' = 2 cm			
0	19.0 cm	24.0 cm	48.0 cm	
C	Where the concrete cover 'd' = 3 cm			
	20.0 cm	25.0 cm	49.0 cm	
<i>e</i> 1				

a ... tie-rod length

b ... installation depth

c ... minimum slab thickness

d ... concrete cover

#### Note:

Stop anchors of different lengths should not be mixed in the same project.



#### WARNING

- The short **Stop anchor 15.0 11.5cm 90** has a much lower load-bearing capacity than the Stop anchor 15.0 16cm 55.
  - For this reason, the short stop anchor is only allowed to be used on systems with low tensile loads at the anchoring location, such as on climbing systems inside shafts.
  - If the geometry means that it is only possible to install the short stop anchor, then revised static calculation, with extra reinforcement steel, is required in cases where larger tensile loads may occur.
  - The Stop anchor 15.0 11.5cm is only permitted for slab thicknesses < 24 cm. For slab thicknesses ≥ 24 cm, the Stop anchor 15.0 16cm (or larger) must be used.</p>



### WARNING

- The **Stop anchor 15.0 11.5cm 90** may accidentally come unscrewed from the universal climbing cone while low-viscosity concrete is being poured.
  - Take additional precautions to prevent the Stop anchor 15.0 11.5cm 90 from being turned.

The following components are fastened to the Universal climbing cone by means of the Cone screw B 7cm.

#### Floor support TLS 0.40m

- For safe suspension of the table lifting system in all phases of the work.



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- Beam for landing level safety gate 0.40m
  - For fixing the landing level safety gates.



- Lifting mast anchoring TLS cross bar 0.40m
  - For back-staying the Lifting masts TLS to the structure.



- Lifting mast anchoring TLS wall
  - As an alternative to the Lifting mast anchoring TLS cross bar 0.40m, for back-staying the Lifting masts TLS to the structure.



### Dimensioning the suspension point

The required **cube compressive strength** of the concrete at the time of loading must be **specified** separately for each project **by the structural designer**. It will depend on the following factors:

- load actually occurring
- length of the stop anchor
- reinforcement / extra reinforcement steel
- distance from edge

The introduction of the forces, the transfer of these forces into the structure, and the stability of the overall construction, must all be verified by the structural designer.

The required cube compressive strength  $f_{ck,cube,current}$  must be at least 10  $N/mm^2,\ however.$ 

# Preparing the positioning point

The instructions given below for preparing the positioning point apply, analogously, to all components that are fastened to the Universal climbing cone using the Cone screw B 7cm.

#### WARNING

Always screw the stop anchor into the universal climbing cone until it fully engages (up to the depth mark). Not screwing the stop anchor sufficiently far

into the cone may subsequently lead to reduced load-bearing capacity and to the failure of the suspension point – resulting in injury and damage.

Use only the Cone screw B 7cm for the positioning point and suspension point (head of screw is red)!

#### WARNING

Sensitive anchoring, suspension and connector components!

- Never weld or heat these components.
- Any components that are damaged or have been weakened by corrosion or wear must be withdrawn from use.

#### NOTICE

!

- The axis of the universal climbing cone must be at right angles to the surface of the concrete – maximum angle of deviation: 2°.
- The universal climbing cone must be embedded so that it is flush with the concrete surface.
- Do not exceed the tolerances for the locations of the positioning point and suspension point.
- Protect the thread from soiling.
- Universal climbing cones are supplied with Sealing sleeves K. Every time the cones are re-used, fit them with new sealing sleeves first.

#### Table Lifting System TLS

#### Tools needed:

- Reversible ratchet 3/4"
- Universal cone spanner 15.0/20.0 (for universal climbing cone)
- Extension 20cm 3/4"
- Box nut 50 3/4" (for Cone screw B 7cm)
- These tools are all included in the Tool box TLS.
- Push the sealing sleeve all the way onto the universal climbing cone.
- Screw the stop anchor into the universal climbing cone, until it engages (up to the depth mark).
- Fasten the universal climbing cone to the installation template with a Cone screw B 7cm.

-))-

The installation template ensures that the positioning point is correctly located.



Fix the installation template to the stop-end formwork.



### NOTICE

- The positioning point must align with the suspension point beneath it (± 10 mm in the horizontal).
- Tie the stop anchor tightly to the reinforcements with binding wire.



- a ... 3270 mm (± 20 mm)
- b ... 400 mm (± 10 mm)

# Pouring

- Before pouring, check all positioning points and suspension points once again.
  - The axis of the universal climbing cone must be at right-angles to the surface of the concrete – maximum angle of deviation: 2°.
    - The universal climbing cone must be embedded so that it is flush with the concrete surface.
    - Do not exceed the tolerances for the locations of the positioning point and suspension point.
    - The sealing sleeve must be completely pushed onto the Universal climbing cone.
    - The depth mark on the stop anchor must be right up against the Universal climbing cone = must be screwed in to the full depth.
    - Protect the thread from soiling.
- > Do not touch positioning points with the vibrator.
- Do not place concrete directly above the positioning points.

## Preparing the suspension point

The instructions given below for preparing the suspension point apply, analogously, to all components that are fastened to the Universal climbing cone using the Cone screw B 7cm.

Fix the Floor support TLS in the Universal climbing cone 15.0 with a Cone screw B 7cm. A tightening torque of 100 Nm (20 kg, assuming a ratchet-length of approx. 50 cm) is sufficient.



- A Universal climbing cone
- C Cone screw B 7cm
- D Floor support TLS

Forcibly tightening the Cone screw B 7cm any more than this may cause damage and even cause the form tie to break!

The Reversible ratchet 3/4" must be used for screwing in and fixing the Cone screw B 7cm into the universal climbing cone.



## Possible ways of connecting the landing level safety gates



- A Landing level safety gate TLS with handle
- **B** Landing level safety gate TLS with limit switch
- C Switchbox TLS
- D Floor support TLS 0.40m

Push the corner post of the landing level safety gate down onto the mounting fixture (E) and secure with the eyebolt (F).



# **Computation of quantities for Lifting masts TLS 1.50m**

### Standing on ground and working from ground level

# Ċ g 2 9767-333-01

- a ... Operational height b ... 2.40 m
- c ... min. 1.30 m

n number 1) =	Operational height(a) - 2.40 m(b) + 1.30 m (c)
	1.50 m

<sup>1)</sup> Round up the result to a whole number.

Total number of Lifting masts TLS 1.50m = 2 x n



Suspended from the floor-slab

d Lifting height	Total number of Lifting masts TLS 1.50m
Up to 2.80m	4
Up to 4.30m	6
Up to 5.80m	8
Up to 7.30m	10
Up to 8.80m	12
Up to 10.30m	14
Up to 11.80m	16
Up to 13.30m	18
Up to 14.80m	20

# Automatic climbing unit TLS

The Automatic climbing unit TLS is a lifting appliance that is used for automatic, fast and safe raising of the Table Lifting System TLS in construction operations, without crane assistance.



Follow the directions in the 'Automatic climbing unit TLS' Operating Instructions!

#### General

# General

# Combining with other Doka systems

# Combining with Dokaflex tables



B Dokaflex table

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#### NOTICE

The Dokamatic table and the Dokaflex table have different overall heights.

When selecting the props, allow for the difference  $\mathbf{d}$  of 8.2 cm!

Follow the directions in the 'Dokaflex tables' User Information!

### Combining with Dokaflex or Doka Xtra



#### Close-up of extra beam:



- A Doka beam H20
- B Nailing board (provided at site)
- C Dokamatic table
- D Dokaflex or Doka Xtra

#### Note:

The beam (A) must be pre-mounted!



Follow the directions in the 'Dokaflex' and 'Doka Xtra' User Information booklets!

Examples of enhanced requirements:

- Architectural requirements
- Special requirements regarding planeness of the concrete surface



For more information on the topic of fair-faced concrete, please refer to the 'Practical Information' brochure entitled 'Forming fair-faced concrete'.

# H20 screw-on bracket for formwork sheets

The H20 screw-on bracket for formwork sheets makes it possible to fix formwork sheets to Doka beams from the underside.



- A H20 screw-on bracket for formwork sheets
- B Doka beam H20
- **C** Formwork sheet

#### Advantages:

- High-grade concrete surfaces can be formed, without any screw imprints.
- Less finishing-work needs to be done on the concrete surfaces.
- The surfaces of the formwork sheets can easily be cleaned.
- Can be used with various different thicknesses of formwork sheet, from 18 to 27 mm.
- Can be dismounted quickly, leaving no damage.

#### NOTICE

- On 18 mm thick sheets, the brackets can only be used together with an extra 3 mm thick packing strip (otherwise the screws might protrude on the other side of the sheet).
- While being screwed onto the H20 screw-on brackets for formwork sheets, the formwork sheet must be secured against being lifted off the beams.

Approx. five H20 screw-on brackets for formwork sheets per  $m^2$  of superstructure are needed for attaching the formwork sheeting.

#### Note:

If a Dokamatic lifting strap 13.00m with integrated strap shoes is used, the screw-on brackets must be set back approx. 10 cm from the ends of the beams!

# Number of screws needed per H20 screw-on bracket

	Screw-on bracket fixing points		
Formwork sheet	on formwork sheet Framax screw 7x22	on beam Universal screw coun- tersunk head Torx TG 5x50	
Multi-ply formwork sheet (Dokaplex or equivalent)	2	2	
3-ply sheet (3-SO or equiva- lent)	4		

#### Permitted pull-out forces per screw

	-		
Formwork sheet	Screw-in depth	Permitted pull-out force 1)	
Multi-ply formwork sheet (e.g. Dokaplex 18 or 21mm)	15 mm	0.5 kN	
3-ply sheet (e.g. 3-SO 21 or 27mm)	18 mm	0.2 kN	

<sup>1)</sup> Values obtained when sheet was in moisture-penetrated state

#### **Fixing options**



D Framax screw 6.7x20.6

E Universal screw countersunk head Torx TG 5x50

# Ladder system

General



#### Note:

The Ladder system XS must be implemented in such a way that all national regulations are complied with.

#### WARNING

 The Ladders XS may only be used as part of the XS system, and must NOT be used separately (as 'lean-to' ladders).

### **Pre-assembly**

Pre-assemble each ladder unit on the ground (placed on two timber supports or on Doka beams).



- A System ladder XS 4.40m
- B Ladder cage exit XS
- C Securing barrier XS



 Only pre-assemble max. 2 ladder segments at a time. (Total length max. 6.7 m).

### Mounting the connector to the table

# Option 1: attached in direction of primary beams (to the Dokamatic table waling 12)

- Push the Connector XS DM/SL-1 into the table waling.
- Bolt the Connector XS DM/SL-1 in place with 2 Connecting pins 10cm, and secure these with Spring cotters.



- A Connector XS DM/SL-1
- B Connecting pin 10cm + Spring cotter 5mm
- **C** Dokamatic table waling 12

# Option 2: attached in direction of secondary beams (additional multi-purpose waling)

Push the Multi-purpose waling WS10 in between the secondary beams, and fix it to the table walings with a tie rod and 2 super plates.



- D Multi-purpose waling WS10 Top50
- **E** Tie rod 15.0 (length = 0.40 m)
- F Super plate 15.0
- Push the Connector XS DM/SL-1 into the multi-purpose waling.
- Bolt the Connector XS DM/SL-1 in place with 2 Connecting pins 10cm, and secure these with Spring cotters.



- A Connector XS DM/SL-1
- B Connecting pin 10cm + Spring cotter 5mm
- D Multi-purpose waling WS10 Top50

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### **Fixing the ladder**

Lift the pre-assembled ladder unit to the connector by crane and fix it in place.

#### to the Connector XS (at top)

- Pull out the push-in bolt, and pivot the two safety hooks out of the way.
- Close the safety hooks.
- Insert the push-in bolt into whichever rung of the ladder is suitable for the height of the table, and secure it with a linch pin.



- in the front position (a)
- A Push-in bolt
- B Safety hook
- C System ladder XS 4.40m
- D Mobile scaffold tower (e.g. Working scaffold Modul)

#### to the Ladder adapter XS (at bottom)

- Fasten the Ladder adapter XS to the ground.
- Fix the bottom of the ladder to the Ladder adapter XS.



E Ladder adapter XS

### **Items needed**

Commentary Lladden	Top edge of table		
Connectors + ladder	2.70- 3.75 m	>3.75- 5.85 m	
Connector XS DM/SL-1	1	1	
Connecting pin 10cm	2	2	
Spring cotter 5mm	2	2	
System ladder XS 4.40m	1	1	
Ladder extension XS 2.30m	0	1	
Ladder adapter XS	1	1	
For fixing onto timber: Square bolt M8 (length dep. on thickness of plank)	4	4	
For fixing onto concrete: Doka express anchor 16x125mm	1	1	
Tie rod 15.0 galvanised m (length = 40 cm) <sup>1)</sup>	2	2	
Super plate 15.0 <sup>1)</sup>	4	4	

<sup>1)</sup>when fixed in direction of secondary beams

	Top edge of table				
Ladder cage	2.70-	>3.15-	>4.05-	>5.40-	
	3.15 m	4.05 m	5.40 m	6.60 m	
Ladder cage exit XS	1	1	1	1	
Securing barrier XS	1	1	1	1	
Ladder cage XS 1.00m	0	1	2	3	

#### General

## Guardrail systems on the structure

## Handrail post XP 1.20m

- Attached with screw-on shoe, railing clamp, handrail-post shoe or Step bracket XP
- Protective grating XP, guardrail boards or scaffold tubes can be used as the safety barrier



### a ... > 1.00 m



Follow the directions in the 'Xsafe edge protection XP' User Information booklet.

### Handrail clamp S

- Attached with integral clamp
- Guard-rail boards or scaffold tubes can be used as the safety barrier



### a ... > 1.00 m



Follow the directions in the "Handrail clamp S" User information!

### Handrail post 1.10m

- Fixed in a Screw sleeve 20.0 or Attachable sleeve 24mm
- Guard-rail boards or scaffold tubes can be used as the safety barrier





Follow the directions in the 'Handrail post 1.10m' User Information!

### Doka floor end-shutter clamp

Slab stop-ends and fall-arrest barriers in one system





Follow the directions in the 'Doka floor endshutter clamp' User Information booklet!

### Floor end-shutter profile XP

Slab stop-ends and safety barriers in one system





Follow the directions in the 'Xsafe edge protection XP' User Information booklet.

## Transporting, stacking and storing

Thanks to their compact design, up to 6 Dokamatic tables can be loaded onto a truck on top of one another - making for improved logistics and reduced shipping costs.



### Stacking and delivery condition

### NOTICE

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- Stack max. 6 elements on top of one another!
- Never climb onto the stack of table elements.
- Before being transported by truck, the table elements must be strapped down securely.



Dimensions in cm	Dokamatic table 27mm	Dokamatic table 21mm
a (6 elements)	262.6	258.0
b (5 elements)	218.0	215.0
С	43.6	43.0
d	8.9	8.9

### Intermediate storage of tables

### NOTICE

Observe the following regarding intermediate storage of completely assembled tables:

- Only set down tables on level, firm surfaces.
- Never place finished tables on top of one another - not even with their floor props tilted back at 90°.
- In exposed locations, secure against wind pressure.

### Lifting by crane

The Dokamatic lifting strap 13.00m is a lifting accessory that is only suitable for lifting Doka tableforms and stacked Doka panels.

2 Dokamatic lifting straps are needed for each unit to be lifted.



Max. working load limit: 2000 kg / Dokamatic lifting strap 13.00m

- Strap shoes for safe lifting of stacked tableform superstructures.
- Anti-dropout safeguard for strap shoes
- Moveable, 8 m long protective sleeve makes it possible to lift in a horizontal position, and protects the strap fabric.



Follow the directions in the Operating Instructions!

### Lifting of stacks

To lift **stacked tableform superstructures**, the Dokamatic lifting strap 13.00m is used **with integrated strap shoes**.



### Lifting single tables

The integrated **strap shoes** are **not** pushed onto the secondary beams. This makes it possible to operate the Lifting strap 13.00m when working from ground level.

The strap shoes can either remain on the strap, or be detached from it as needed.



B Strap shoes



## Utilise the benefits of Doka multi-trip packaging on your site.

Multi-trip packaging such as containers, stacking pallets and skeleton transport boxes keep everything in place on the site, minimise time wasted searching for parts, and streamline the storage and transport of system components, small items and accessories.

# Dokamatic table-frame pallet 2.15x1.60m



Storage unit and transport device for Dokamatic table frames 1.50m

- durable
- stackable

Suitable transport appliances:

- crane
- pallet stacking truck
- forklift truck

Max. load: 1450 kg Permitted imposed load: 4600 kg

- Optimised for container and truck-based shipments.
- Entry direction for transport appliances: possible from all sides.

#### Stacking the Dokamatic table frames 1.50m



h ... 172 cm (max. 24 frames)

#### NOTICE

- Type plate must be in place and clearly legible
- Ensure that the Dokamatic table frames are centrally placed!

### Loading the transport device

Lay the first Dokamatic table frame 1.50m onto the defined points of the Dokamatic table-frame pallet (see close-ups).



- A Dokamatic table-frame pallet 2.15x1.60m
- B Dokamatic table frame 1.50m
- **C** Distance piece
- D Support profile
- Stack all the other Dokamatic table frames 1.50m, with an alternating axis offset (always 3 frames sideby-side).



- **B** Dokamatic table frame 1.50m
- E Spacer wedge

This way the Dokamatic table frames 1.50m are secured against slippage.

# Dokamatic table-frame pallet 2.15x1.60m as a storage unit

## Stacking and storing filled Dokamatic table-frame pallets 2.15x1.60m



### NOTICE

- The Dokamatic table-frame pallets 2.15x1.60m at the bottom of the stack must be completely and uniformly filled.
- There must be a flat, firm (e.g. concrete) base that is capable of supporting the load.

	Max. q'ty	Max. inclination of floor
Stacked on site	2	3%
Stacked in warehouse	3	1%



- A Dokamatic table-frame pallet 2.15x1.60m
- B Dokamatic table frame 1.50m
- F Entry direction

### NOTICE

When filled Dokamatic table-frame pallets 2.15x1.60m are being stacked, there is only one possible entry direction **(F)** for transport appliances.

## Stacking and storing empty Dokamatic table-frame pallets 2.15x1.60m



A Dokamatic table-frame pallet 2.15x1.60m

# Dokamatic table-frame pallet 2.15x1.60m as a transport device

General

#### Lifting by crane

### WARNING

Do not attach the lifting chain to the table frames!

Attach the lifting chain to the 4 crane hoisting points on the Dokamatic table-frame pallet 2.15x1.60m only.

### NOTICE

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- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m).
   Do not exceed the permitted working load limit.
- Sling angle β max. 30°!





- A Dokamatic table-frame pallet 2.15x1.60m
- B Dokamatic table frame 1.50m
- G Doka 4-part chain 3.20m
- H Crane hoisting point

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## Repositioning by forklift truck or pallet stacking truck

### NOTICE

• Push the forks of the forklift truck as far apart as possible.

# Doka skeleton transport box 1.70x0.80m

Storage and transport device for small items



Max. load-bearing capacity: 700 kg (1540 lbs) Permitted imposed load: 3150 kg (6950 lbs)

To make the Doka skeleton transport box easier to load and unload, one of its sidewalls can be opened.

# Using Doka skeleton transport boxes 1.70x0.80m as storage units

### Max. n° of units on top of one another

Outdoors (on the site)	Indoors
Floor gradients up to 3%	Floor gradients up to 1%
2	5
It is not allowed to stack empty pallets on top of one another!	

### NOTICE

Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

# Using Doka skeleton transport boxes 1.70x0.80m as transport devices

### Lifting by crane

### NOTICE

- Multi-trip packaging items may only be lifted one at a time.
- Only lift the boxes when their sidewalls are closed!
- Use a suitable crane suspension tackle (e.g. Doka 4-part chain 3.20m).
   Do not exceed the permitted working load limit.
- Sling angle β max. 30°!



## Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

### Doka multi-trip transport box

Storage and transport device for small items

### Doka multi-trip transport box 1.20x0.80m



Max. carrying capacity: 1500 kg (3300 lbs) Permitted imposed load: 7850 kg (17300 lbs)

# Different items in the Doka multi-trip transport box can be kept separate with the **Multi-trip transport box par-titions 1.20m or 0.80m**.



A Slide-bolt for fixing the partition

### Possible ways of dividing the box

Multi-trip transport box partition	in the longitudinal direction	in the transverse direction
1.20m	max. 3 partitions	-
0.80m	-	max. 3 partitions
	9206-204-02	9206-204-03

# Doka multi-trip transport box 1.20x0.80mx0.41m



Max. carrying capacity: 750 kg (1650 lbs) Permitted imposed load: 7200 kg (15870 lbs)

# Using Doka multi-trip transport boxes as storage units

### Max. n° of units on top of one another

Outdoors	s (on the site)	In	doors	
Floor gradients up to 3%		Floor gradients up to 1%		
Doka multi-trip transport box		Doka multi-	trip transport box	
1.20x0.80m   1.20x0.80x0.41m		1.20x0.80m	1.20x0.80x0.41m	
3 5		6	10	
It is not allowed to stack empty pallets on top of one another!				

### NOTICE

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Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.

# Using Doka multi-trip transport boxes as transport devices

#### Lifting by crane

#### NOTICE

- Multi-trip packaging items must be lifted individually.
- Use a suitable crane lifting tackle (e.g. Doka 4-part chain 3.20m).
   Do not exceed the permitted working load limit.
- Sling angle β max. 30°!



# Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

# Doka stacking pallet 1.55x0.85m and 1.20x0.80m

Storage and transport devices for long items.



Max. carrying capacity: 1100 kg (2420 lbs) Permitted imposed load: 5900 kg (12980 lbs)

### Using Doka stacking pallets as storage units

### Max. n° of units on top of one another

Outdoors (on the site)	Indoors
Floor gradients up to 3%	Floor gradients up to 1%
2	6
It is not allowed to stack empty pallets on top of one another!	

### NOTICE

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- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- How to use with Bolt-on castor set B:
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on castor set mounted to it.

# Using Doka stacking pallets as transport devices

### Lifting by crane

### NOTICE

- Multi-trip packaging items must be lifted individually.
- Use a suitable crane lifting tackle (e.g. Doka 4-part chain 3.20m).
   Do not exceed the permitted working load limit.
- Load the items centrically.
- Fasten the load to the stacking pallet (e.g. with strapping tape or lashing strap) so that it cannot slide or tip out.
- Sling angle β max. 30°!



Doka stacking pallet 1.55x0.85m max. 4	.5 m
Doka stacking pallet 1.20x0.80m max. 3	.0 m

Repositioning by forklift truck or pallet stacking truck



- Load the items centrically.
- Fasten the load to the stacking pallet (e.g. with strapping tape or lashing strap) so that it cannot slide or tip out.

### Doka accessory box

#### Storage and transport device for small items



Max. carrying capacity: 1000 kg (2200 lbs) Permitted imposed load: 5530 kg (12191 lbs)

### Doka accessory boxes as storage units

#### Max. n° of units on top of one another

Outdoors (on the site)	Indoors
Floor gradients up to 3%	Floor gradients up to 1%
3	6
It is not allowed to stack empty pallets on top of one another!	

#### NOTICE

!

- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- How to use with Bolt-on castor set B:
  - Always apply the fixing brake when the container is 'parked'.
  - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on caster set mounted to it.

### Doka accessory box as transport devices

#### Lifting by crane

### NOTICE

- Multi-trip packaging items must be lifted individually.
- Use a suitable crane lifting tackle (e.g. Doka 4-part chain 3.20m).
   Do not exceed the permitted working load limit.
- When lifting accessory boxes to which Bolton castor sets B have been attached, you must also follow the 'Bolt-on castor set B' User Information booklet!
- Sling angle β max. 30°!



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## Repositioning by forklift truck or pallet stacking truck

The forks can be inserted under either the broadside or the narrowside of the containers.

### Bolt-on castor set B

The Bolt-on castor set B turns multi-trip packaging items into fast and manoeuvrable transport devices. Suitable for drive-through access openings > 90 cm.



The Bolt-on castor set B can be mounted to the following multi-trip packaging items:

- Doka accessory box
- Doka stacking pallets
- Protective barrier Z pallets



Follow the directions in the 'Bolt-on castor set B' User Information booklet!

### Reshoring props, concrete technology and stripping out



Follow the directions in the Calculation Guide entitled 'Stripping out formwork from floors in building construction', and/or ask your Doka technician.

# When is the best time to strip out the formwork?

The concrete strength needed before the formwork can be stripped out will depend upon the load factor  $\alpha$ . This can be read off from the following table.

### Load factor a

This is calculated by:

$$\alpha = \frac{DL_{concrete} + LL_{construction state}}{DL_{concrete} + DL_{finishing} + LL_{final}}_{state}$$

Slab De	Dead load		Load factor α LL <sub>final state</sub>			
d [m]		[kN/m <sup>2</sup> ]	2.00 kN/m <sup>2</sup>	3.00 kN/m <sup>2</sup>	4.00 kN/m <sup>2</sup>	5.00 kN/m <sup>2</sup>
	0.14	3.50	0.67	0.59	0.53	0.48
	0.16	4.00	0.69	0.61	0.55	0.50
	0.18	4.50	0.71	0.63	0.57	0.52
	0.20	5.00	0.72	0.65	0.59	0.54
	0.22	5.50	0.74	0.67	0.61	0.56
	0.25	6.25	0.76	0.69	0.63	0.58
	0.30	7.50	0.78	0.72	0.67	0.62
	0.35	8.75	0.80	0.75	0.69	0.65

Valid for a finishing-load  $DL_{finishing}$  = 2.00 kN/m² and a live load in the early-stripped state of LL\_construction state = 1.50 kN/m²

 $DL_{concrete}$ : calculated with  $\gamma_{concrete}$  = 25 kN/m<sup>3</sup> DL<sub>finishing</sub>: load for floor finish, etc.

Example: Slab thickness 0.20 m with a final live load of 5.00 kN/m<sup>2</sup> results in a load factor  $\alpha$  of 0.54.

This means that formwork removal / stress-release can take place once the concrete has reached 54% of its 28-day strength. The load-bearing capacity will then correspond to that of the finished structure.



### NOTICE

If the floor props are not stress-relieved, meaning that the slab has not been activated, then the props will remain loaded with the dead weight of the floor-slab.

# When the floor above is concreted, this may lead to a doubling of the load that is being applied to the floor props.

The floor props are not designed to cope with such an overload, and the result may be damage to the formwork, the floor props and the structure.

# Why put up reshoring props after stripping out the formwork?

After the formwork has been stripped and the slab has been stress-relieved or dismantled, the slab is able to bear its dead load and live loads resulting from the construction state, but not the concreting loads from subsequent floor-slabs.

The temporary reshoring serves to support the floorslab and distribute the concreting loads across several floors.

# Positioning the reshoring props correctly

Reshoring props have the job of spreading loads between the new floor-slab and the floor beneath it. This load distribution will depend on the relationship between the rigidities of these two floor-slabs.



#### NOTICE Ask an expert!

As a rule, the question of using reshoring props should be referred to the responsible experts, regardless of the information given above.

Observe all local standards and regulations!

# Strength development in the new concrete

Rough reference values can be found in DIN 1045-3:2008, Table 2. The length of time until 50 percent of the final (28-day) strength is reached can be read off from this Table as a function of the temperature and the type of concrete.

The values are only valid if the concrete is given correct, appropriate curing throughout the entire period. For a concrete with medium strength development, the following inferred diagram may thus be used.

#### Concrete-strength development - medium



Hardening (curing) duration [days]

**A**  $\vartheta \ge 15^{\circ}$  **B**  $\vartheta \ge 10^{\circ}$ **C**  $\vartheta \ge 5^{\circ}$ 

### Deflection of the new concrete

The concrete's modulus of elasticity develops faster than compressive strength. At 60 % of its compressive strength  $f_{ck}$ , the concrete has already reached approximately 90% of its modulus of elasticity  $E_{c(28)}$ .

The increase in the elastic deformation taking place in the new concrete is thus only negligible.

The creep deformation, which only finally ceases after several years, is several times more than the elastic deformation.

Early striking – e.g. after 3 days instead of 28 – thus only leads to an increase in the total deformation of less than 5%.

The part of this deformation accounted for by creep deformation, however, may be anything between 50% and 100% of the standard value, due to such variable influences as the strength of the aggregates, and the atmospheric humidity. This means that the total deflection of the floor-slab is practically independent of the time at which the formwork was struck.

### Cracks in new concrete

The bonding strength between the reinforcement steel and the concrete develops more rapidly in the new concrete than does its compressive strength. This means that early stripping does not have any negative influence upon the size and distribution of cracks on the tension side of reinforced concrete constructions.

Other cracking phenomena can be countered effectively by appropriate curing methods.

### Curing of new concrete

New site-placed concrete is exposed to influences which may cause cracking and slow down its strength development:

- premature drying
- over-rapid cooling in the first few days
- excessively low temperatures or frost
- mechanical damage to the surface of the concrete
- hydration heat
- etc.

The simplest precaution is to leave the formwork on the concrete surface for longer. As well as the familiar extra curing measures, this measure should be carried out in any case.

### Removing the load from the formwork from wide-spanned floor-slabs with support centres of over 7.5m

In the case of thin, wide-spanned concrete floor-slabs (e.g. in multistorey car parks), the following points must be remembered:

- When the formwork beneath these floor-slab spans is released (i.e. when the load is taken off the floor props), the floor props that are still in place are briefly subjected to additional loads. This may lead to overloading, and to the floor props being damaged.
- Please consult your Doka technician.

### I NOTICE

As a basic rule:

 Stress-release should always be carried out working from one side towards the other, or from the middle of the floor slab (midspan) towards the slab-edges.

For wide spans, this procedure MUST be followed!

Stress-release must NEVER be carried out from both sides towards the middle!





I ... Effective floor-slab spans of 7.50 m and over

A Load redistribution

	[kg]	Article N°	[k	J]	Article N°
Dokamatic table 2.50x4.00m 21mm	515.0	586200000	Doka floor prop Eurex 20 top 150 8	.0	586096000
Dokamatic table 2.00x3.00m 21mm Dokamatic table 2.00x5.00m 21mm	480.0	586202000 586202000	Doka floor prop Eurex 20 top 250         12           Length: 148 - 250 cm         12	2.7	586086400
Dokamatic-Tisch			Doka floor prop Eurex 20 top 300         14           Lendth : 173 - 300 cm         14	.3	586087400
			Doka floor prop Eurex 20 top 350         17           Lendth 198 - 350 cm         17	.4	586088400
			Doka floor prop Eurex 20 top 40021Lendth: 223 - 400 cm	.6	586089400
			Doka floor prop Eurex 20 top 550         32           Lendth: 298 - 550 cm         32	.3	586090400
			Doka-Deckenstütze Eurex 20 top Galvanised		
Dokamatic table 2.50x4.00m 21mm MS-R Dokamatic table 2.50x5.00m 21mm MS-R	581.0 739.0	586244000 586245000			
Dokamatic table 2.00x4.00m 21mm MS-R Dokamatic table 2.00x5.00m 21mm MS-R	536.0 674.0	586246000 586247000			
Dokamatic-Tisch					
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Dokamatic table 2.50x4.00m 27mm	560.0	586204000			
Dokamatic table 2.50x5.00m 27mm Dokamatic table 2.00x4.00m 27mm Dokamatic table 2.00x5.00m 27mm	685.0 522.0	586205000 586206000	Doka floor prop Eurex 20 eco 250         11           Length: 148 - 250 cm         11	.5	586270000
Dokamatic-Tisch	025.0	566207000	Doka floor prop Eurex 20 eco 300         14           Length: 173 - 300 cm         14	.0	586271000
			Doka floor prop Eurex 20 eco 350 16 Length: 198 - 350 cm	i.9	586272000
			Doka floor prop Eurex 20 eco 40020Length: 223 - 400 cm20	.5	586273000
			Doka floor prop Eurex 20 eco 450         24           Length: 248 - 450 cm         24	.1	586275000
			Doka floor prop Eurex 20 eco 55032Length: 298 - 550 cm	0	586276000
Dokamatic table grille 2.50x4.00m Dokamatic table grille 2.50x5.00m	418.0 536.0	586208000 586209000	Doka-Deckenstütze Eurex 20 eco Galvanised		
Dokamatic table grille 2.00x4.00m Dokamatic table grille 2.00x5.00m	402.0 508.0	586210000 586211000			
Dokamatic-Tischrost					
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Dekemetie table grille W 2 50x4 00m	422.0	596209500			
Dokamatic table grille W 2.50x5.00m Dokamatic table grille W 2.00x5.00m	433.0 554.0 443.0	586209500 586209500 586210500		_	
Dokamatic table grille W 2.00x5.00m Dokamatic-Tischrost	526.0	586211500	Doka floor prop Eurex 20 250         12           Length: 152 - 250 cm         12	.9	586086000
			Doka floor prop Eurex 20 30015Length: 172 - 300 cm15	.3	586087000
Dokamatic cross beam 2.45m Dokamatic cross beam 1.95m	13.0 10.3	189715000 189716000	Doka floor prop Eurex 20 35017Length: 197 - 350 cm17	.8	586088000
Dokamatic-Querträger 2,45m Varnished yellow			Doka floor prop Eurex 20 40022Length: 227 - 400 cm22	2	586089000
			Length: 297 - 550 cm	÷.6	586090000
			Galvanised		
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			J.		

[kg]	Article N°	[kg]	Article N°
Doka floor prop Eurex 20 LW 300 11.5 Length: 173 - 300 cm	586876000	Dokamatic table waling 12 4.00m 122.5 Dokamatic table waling 12 5.00m 154.0	586212000 586213000
Doka floor prop Eurex 20 LW 350         13.9           Length: 198 - 350 cm         13.9	586877000	Dokamatic-Tischriegel Painted blue	000210000
Doka-Deckenstütze Eurex 20 LW Galvanised			
		Dokamatic swivel head 40 17.1	586214000
		Dokamatic-Schwenkkopf 40 Galvanised	
		Length: 60 cm	
Doka floor prop Euroy 30 top 250 12 8	586092400	250	
Length: 148 - 250 cm Doka floor prop Eurex 30 top 300 16 4	586093400	<i></i>	
Length: 173 - 300 cm Doka floor prop Eurex 30 top 350 20 7	586094400	Supporting head H20 DF         0.77           Haltekopf H20 DF         0.77	586179000
Length: 198 - 350 cm Doka floor prop Eurex 30 top 400 24.6	586095400	Galvanised Length: 19 cm	
Length: 223 - 400 cm Doka floor prop Eurex 30 top 450 29.1	586119400	Width: 11 cm Height: 8 cm	
Length: 248 - 450 cm Doka floor prop Eurex 30 top 550 38.6	586129000	Spring locked connecting pin 16mm 0.25	582528000
Length: 303 - 550 cm Doka-Deckenstütze Eurex 30 top		Galvanised	
Galvanised		Lengin: 15 cm	
		Dokamatic table platform 1.00/2.00m 92.0	586218000
T.		Dokamatic table platform 1.00/2.50m 103.0 Dokamatic-Tischbühne	586217000
		Steel parts gaivanised Timber parts varnished yellow	
		Derivery condition. Torded closed	
Doka floor prop Eurex 30 250         14.8           Length: 152 - 250 cm         14.8	586092000	A.	
Doka floor prop Eurex 30 300         16.7           Length: 172 - 300 cm         16.7	586093000	Dokamatic platform bracket 1.00m 19.5	586227000
Doka floor prop Eurex 30 350         20.5           Length: 197 - 350 cm	586094000	Dokamatic-Bühnenkonsole 1,00m Galvanised	
Length: 227 - 400 cm     24.9	586095000	Length: 112 cm Height: 124 cm	
Doka moor prop Eurex 30 450         29.2           Length: 248 - 450 cm         Doka-Dockenstütze Eurex 30	586119000	<b>2</b> 1	
Galvanised			
9			
		Dokamatic platform extension 0.50/2.00m31.0Dokamatic platform extension 0.50/2.50m34.3	586220000 586219000
		Dokamatic-Bühnenverbreiterung Steel parts galvanised	
		Timber parts varnished yellow	
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	[kg]	Article N°		[kg]	Article N°
Corner connecting plate 90/50 Winkellasche 90/50 Painted blue Length: 51 cm Width: 40 cm	13.8	580603000	Super plate 15.0 Superplatte 15,0 Galvanised Height: 6 cm Diameter: 12 cm Width-across: 27 m	<b>1.1</b>	581966000 DIN 18216
Spindle strut T7 75/110cm Spindelstrebe T7 75/110cm Galvanised	13.2	584308000	Universal end-shutter support 30cm Universal-Abschalwinkel 30cm Galvanised Height: 21 cm	1.0	586232000
South and a little of the second s			Lashing strap 5.00m Zurrgurt 5,00m Yellow	2.8	586018000
Framax clamping bolt 4-8cm Framax-Klemmschraube 4-8cm Galvanised Length: 19 cm	0.39	588107000	Doka express anchor 16x125mm Doka-Expressanker 16x125mm Galvanised Length: 18 cm	0.31	588631000
Framax universal corner waling Framax-Eckklemmschiene Painted blue Leg length: 60 cm	12.8	588151000	Doka coil 16mm Doka-Coil 16mm	0.009	588633000
Dokamatic edge clamp 0.70m Dokamatic-Randklemme 0,70m Galvanised	3.9	586222000	Galvanised Diameter: 1.6 cm Plumbing strut 340 IB Justierstütze 340 IB	16.7	588696000
			Galvanised Length: 190.8 - 34	1.8 cm	
Tie rod 15.0mm galvanised 0.50m Tie rod 15.0mm galvanised 0.75m Tie rod 15.0mm galvanised 1.00m Tie rod 15.0mm galvanised 1.25m Tie rod 15.0mm galvanised 1.50m Tie rod 15.0mm galvanised 1.75m Tie rod 15.0mm galvanised 2.00m Tie rod 15.0mm galvanised 2.50m Tie rod 15.0mm galvanised 2.50m	0.72 1.1 1.4 1.8 2.2 2.5 2.9 3.6	581821000 581822000 581823000 581826000 581827000 581828000 581829000 581829000 581852000	Plumbing strut 540 IP	30.7	589607000
Tie rod 15.0mm galvanisedm Tie rod 15.0mm non-treated 0.50m Tie rod 15.0mm non-treated 0.75m Tie rod 15.0mm non-treated 1.20m Tie rod 15.0mm non-treated 1.25m Tie rod 15.0mm non-treated 1.50m Tie rod 15.0mm non-treated 2.00m Tie rod 15.0mm non-treated 2.00m Tie rod 15.0mm non-treated 3.00m Tie rod 15.0mm non-treated 3.00m Tie rod 15.0mm non-treated 3.50m Tie rod 15.0mm non-treated 4.00m Tie rod 15.0mm non-treated 4.00m Tie rod 15.0mm non-treated 5.00m Tie rod 15.0mm non-treated 5.00m Tie rod 15.0mm non-treated 6.00m Tie rod 15.0mm non-treated 7.50m Tie rod 15.0mm non-treated 7.50m Tie rod 15.0mm	1.4 0.73 1.1 1.4 2.5 2.9 3.6 4.3 5.0 5.7 7.2 8.6 10.7 1.4	581824000 581870000 581874000 581874000 581876000 581876000 581875000 581877000 581877000 58187000 58188000 58188000 581881000 581881000 581882000	Plumbing strut 540 IB Justierstütze 540 IB Galvanised Length: 310.5 - 549	<b>30.7</b> 9.2 cm	588697000
A DANA DANA DANA DANA		<b>DIN</b> 18216	Prop head EB Stützenkopf EB Galvanised Length: 40.8 cm Width: 11.8 cm Height: 17.6 cm	3.1	588244500







	[kg]	Article N°		[kg]	Article N°
Ladder adapter XS Leiternfuß XS	5.0 Galvanised Height: 50 cm	588673000	Fall arrester FreeFalcon 6.0 Höhensicherungsgerät FreeFalco	00m 3.3 on 6,00m Follow the directions in the "Opera- ting Instructions"!	583039000
					CE
FreeFalcon			Case for safety accessories Koffer Sicherheitszubehör FreeFa	s FreeFalcon 1.5 alcon	583037000
FreeFalcon FreeFalcon	450.0 Red Length: 225 cm Width: 208 cm Height: 235 cm Follow the directions in the "Opera- ting Instructions"!	583034000	FreeFalcons		
		CE	Shifting appliances f	or tables	
e e			DoKart plus DoKart plus included in scope of supply:	1448.0	586265500
Mast cover FreeFalcon Abdeckung Mast FreeFalcon	<b>3.8</b> Red	583027000	4 pcs. Galvanised Width: 19 cm Height: 46 cm Width-across: 30 mm	Yellow	002/01000
				Width: 132 cm Height: 154 - 327 cm Follow the directions in the "Opera- ting Instructions"!	CE
Abdeckung Sockelplatte FreeFalco	n 3.2 con Red	583026000			
Safety harness FreeFalcon Auffanggurt FreeFalcon	1.5	583036000	Extension set for DoKart pl Auslegersatz DoKart plus	us 50.0	586266500
X	Follow the directions in the "Opera- ting Instructions"!		42828050 42828050 42828050	Galvanised Length: 120 cm Follow the directions in the "Opera- ting Instructions"!	
		CE	DoKart DoKart included in scope of supply:	1580.0	586265000
			(A) Brace stirrup 8 4 pcs. Galvanised Width: 19 cm	2.7	582751000
Fall arrester FreeFalcon 9.0 Höhensicherungsgerät FreeFalco	<b>0m 3.8</b> n 9,00m	583035000	Height: 46 cm Width-across: 30 mm	Vallow	
	Follow the directions in the "Opera- ting Instructions"!	CE	Dokan conce	Length: 173 cm Width: 133 cm Height: 154 - 324 cm Follow the directions in the "Opera- ting Instructions"!	CE









	[kg]	Article N°	[kg	Article N°
Torque wrench 3/4" 75-400Nm Drehmomentschlüssel 3/4" 75-400Nm Galvanised Length: 69 cm	2.3	586374000	Maintenance toolbox TLS6.Wartungs-Werkzeugbox TLS consisting of:0.4(A) Grease cartridge TLS0.9(C) Thickness gauge set 0.05-1.00mm0.0(D) Pliers for external circlips 40-100mm0.3(E) Water pump nut pliers 250mm0.3(F) Screw dr. f. recessed-head scr. PZ 20.1(G) Combination wrench 140.0	586369000 586368000 586367000 586350000 586348000 586347000 586351000 586351000
Brake-disc pull-off tool TLS D200	4.3	586370000	(H) Digital multimeter TLS 0.2	2 586353000
Scheibenabzieher TLS D200 Height: 27 cm Width-across: 22 mm			(i) Dummy plug TLS 4 poles 0.0	1 586352000
Tool box TLS Werkzeugbox TLS consisting of: (A) Combination wrench 8 (B) Combination wrench 10 (C) Combination wrench 13 (D) Combination wrench 16 (E) Combination wrench 17 (E) Combination wrench 18	19.6 0.03 0.04 0.06 0.18 0.16 0.17	586337000 586343000 586342000 586341000 580645000 586340000	© 0 0 0 0 0 0 0 0 0 0 0 0 0	
<ul> <li>(F) Combination Wrench 18</li> <li>(G) Combination wrench 19</li> <li>(H) Combination wrench 22</li> <li>(I) Combination wrench 24</li> <li>(J) Combination wrench 30</li> <li>(K) Reversible ratchet 3/4" Galvanised</li> <li>(L) Universal cone spanner 15.0/20.0 Galvanised</li> </ul>	0.17 0.14 0.20 0.25 0.43 1.5 0.90	582837000 582837000 582839000 582840000 580894000 581448000	Dokamatic table-frame pallet 2.15x1.60m     85.       Dokamatic-Tischrahmenpalette 2,15x1,60m     Galvanised	) 586225000
Width-across: 50 mm				
<ul> <li>(M) Sarety Ruler SK Length: 18 cm</li> <li>(N) Extension 20cm 3/4"</li> <li>(O) Slot-screw screwdriver 0.6x3.5</li> <li>(P) Slot-screw screwdriver 1x5.5</li> <li>(Q) Set of ball-head hexagon-socket screw keys</li> <li>(R) Box spanners 1/2" set of 29</li> <li>(S) Box nut 18 3/4"</li> <li>(T) Box nut 19 3/4"</li> <li>(U) Box nut 24 3/4"</li> <li>(V) Box nut 24 3/4"</li> <li>(V) Box nut 24 1/2" L</li> <li>(W) Box nut 27 3/4"</li> <li>(X) Box nut 30 3/4"</li> <li>(Y) Box nut 50 3/4"</li> </ul>	0.02 0.68 0.20 0.20 0.60 5.6 0.22 0.20 0.21 0.30 0.27 0.33 0.81	581439000 580683000 586344000 586346000 586346000 586345000 58643000 586375000 586375000 586376000 586377000 586377000 581449000	Doka skeleton transport box 1.70x0.80m     87.       Doka-Gitterbox 1,70x0,80m     Galvanised       Height: 113 cm     9.	) 583012000
			Doka multi-trip transport box 1.20x0.80m Doka-Mehrwegcontainer 1,20x0,80m Galvanised Height: 78 cm	) 583011000
			Multi-trip transport box partition 0.80m 3. Multi-trip transport box partition 1.20m 5. Mehrwegcontainer Unterteilung Steel parts galvanised Timber parts varnished yellow	7 583018000 5 583017000

Article N°

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