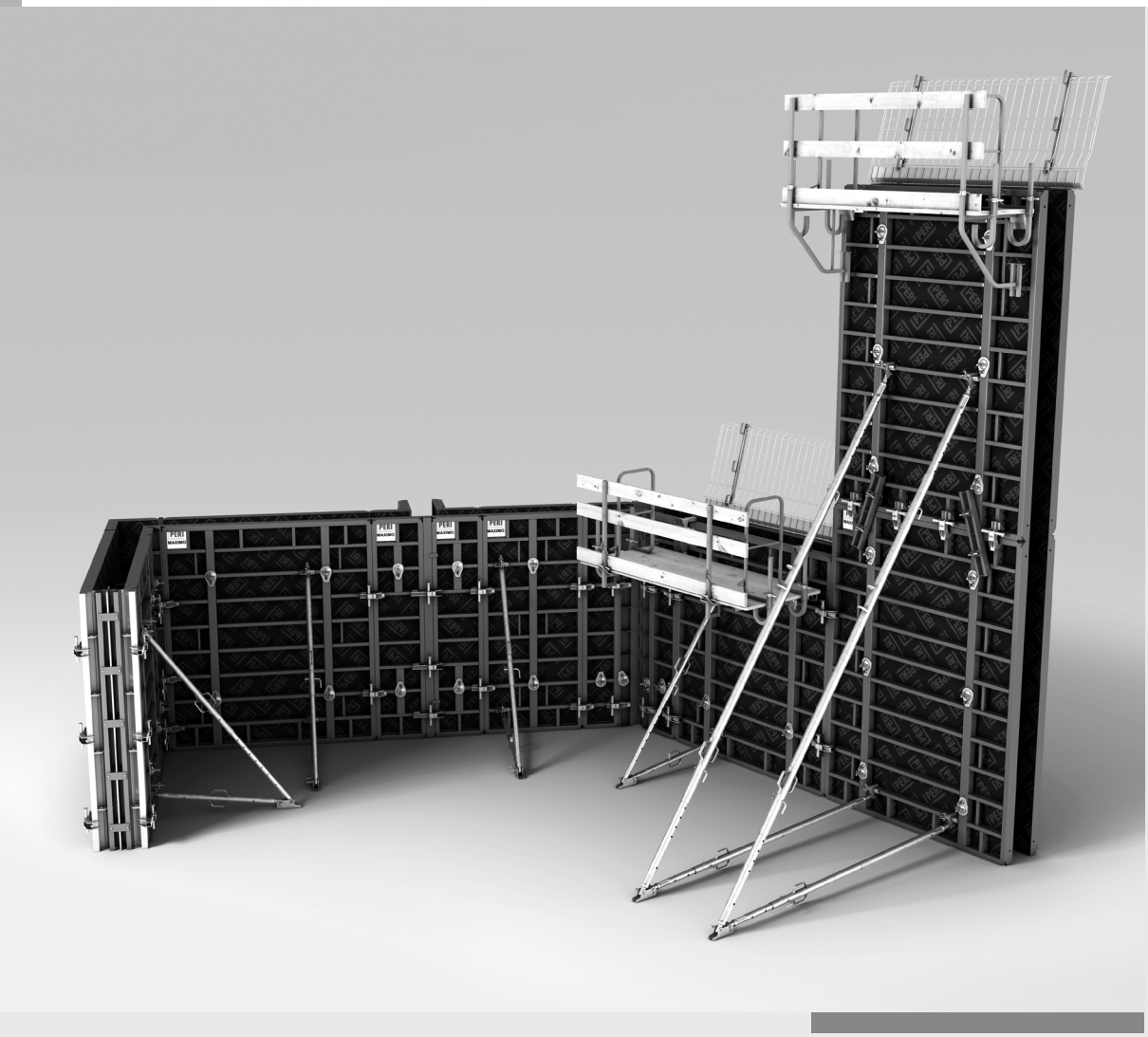
MAXIMO MX 18

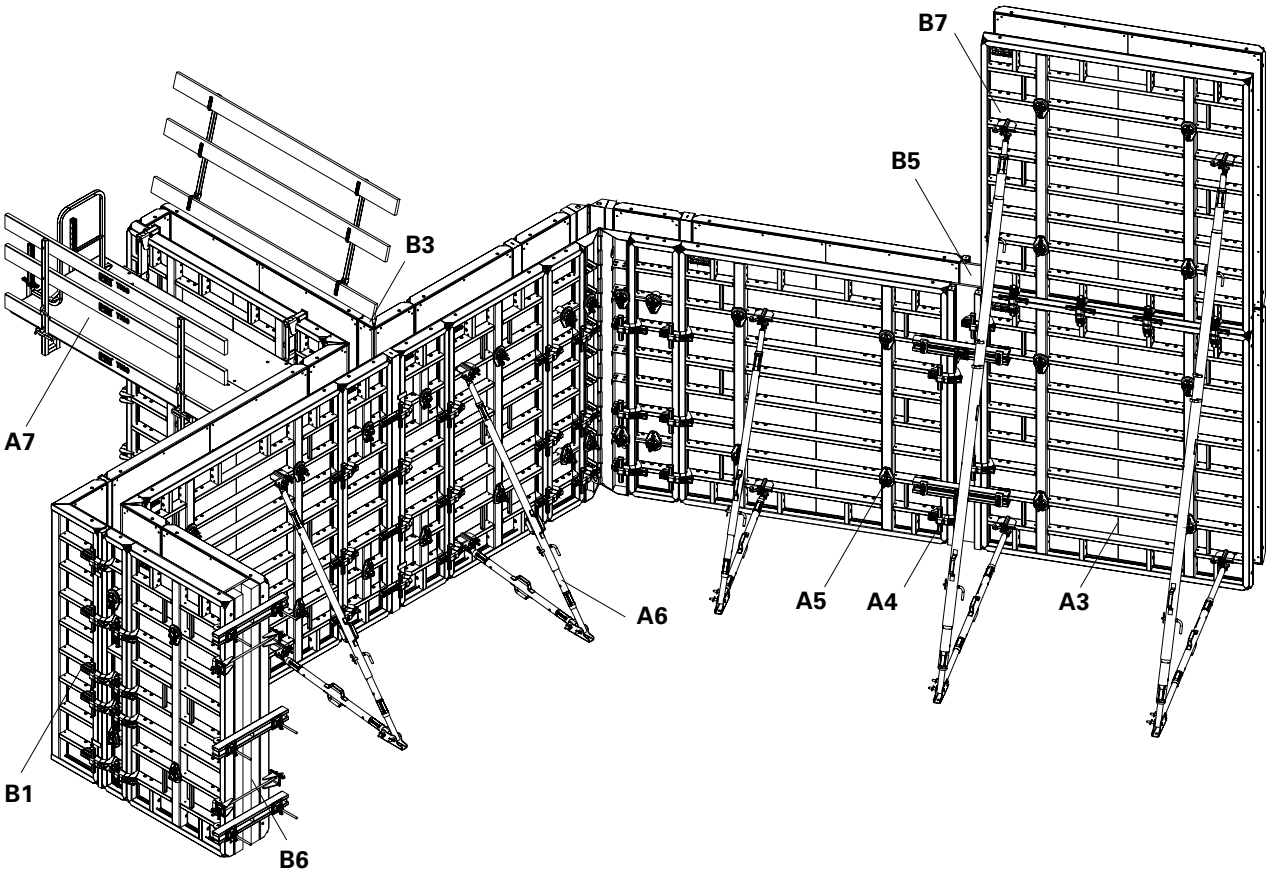
Panel Formwork 270 / 330

Instructions for Assembly and Use – Standard Configuration – Version 2.0



Overview

Main Components



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A4 Panel Connections
A5 Anchor Technology
A6 Push-Pull Props, Kickers
A7 Work and Concreting Scaffold
B1 90° Corners
B3 90° T-junctions
B5 Length Compensations
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Overview

Key

Pictogram | Definition


Safety instructions


Note


Visual check


Tip


Load-bearing point


Misapplication

Dimension specifications
Dimensions are usually given in cm. Other measurement units, e.g. m, are shown in the illustrations.

Conventions
- Instructions are numbered with: 1. ..... , 2. ..... , 3. .....
- The result of an instruction is shown by: → Position numbers are clearly provided for the individual components and are given in the drawing, e.g. 1, in the text in brackets, for example, (1). Multiple position numbers, i.e. alternative components, are represented with a slash, e.g. 1 / 2.

Presentational reference

The illustration on the front cover of these instructions is understood to be a system representation only. The assembly steps presented in these Instructions for Assembly and Use are shown in the form of examples with only one component size. They are valid accordingly for all component sizes contained in the standard configuration.

For a better understanding, detailed illustrations are partly incomplete. The safety installations which have possibly not been featured in these detailed drawings must nevertheless be available.

Introduction

Target Groups

Contractor
These Instructions for Assembly and Use are designed for contractors who use the formwork systems for
- assembling, modifications and dismantling or
- e.g. concreting or
- for other operations, e.g. carpentry or electrical work.

Construction site coordinator
The Safety and Health Protection Coordinator*
- is appointed by the client,
- must identify potential hazards during the planning phase,
- determines measures that provide protection against risks,
- creates a safety and health plan,
- coordinates the protective measures for the contractor and site personnel so that they do not endanger each other,
- monitors and ensures compliance with the protective measures.

Qualified and competent personnel
Due to the specialist knowledge gained from professional training, work experience and recent professional activity, the qualified person has a reliable understanding of safety-related issues and can correctly carry out tests. Depending on the complexity of the test to be undertaken, e.g. scope of testing, type of testing or the use of a certain measuring device, a range of specialist knowledge is necessary.

Qualified specialists
Formwork systems may only be assembled, modified or dismantled by personnel who are suitably qualified to do so. For the work to be carried out, the qualified workers must have received instructions** which contain at least the following points:
- An explanation of the plan for the assembly, modification or dismantling of the formwork system in an understandable form and in the language of the user.
- Description of measures in order to safely assemble, modify or dismantle the formwork system.
- Designation of the preventive measures to avoid the risk of persons and objects falling.
- Designation of the safety precautions in the event of changing weather conditions which could adversely affect the safety of the formwork system concerned as well as the personnel.
- Details regarding the permissible loads.
- Description of any other risks that are associated with the assembly, modification or dismantling procedures.

In other countries, ensure that the relevant national guidelines and regulations in the respective current version are complied with!

* Valid in Germany: Regulations for Occupational Health and Safety on Construction Sites 30 (RAB 30).

** Instructions are given by the contractor himself or a qualified and competent person selected by him.

Additional Technical Documentation

- Instructions for Use
  - Lifting Hook MAXIMO 1.5 t
  - Lifting Gear Combi MX
  - Lifting Gear MX
  - Pallets and Stacking Devices
  - Concrete Cones
  - PERI Bio Clean
- Data Sheet for Anchor Bolt 14/20 x 130
- PERI Design Tables – Formwork and Shoring
- MAXIMO Brochure

Intended Use

Product description
PERI products have been designed for exclusive use in the industrial and commercial sectors only by suitably trained personnel.
The MAXIMO wall formwork system is a flexible panel formwork made of steel for residential and industrial construction projects.
With MAXIMO, concrete components can be produced, e.g. walls and foundations.
MAXIMO has the following features:

- Neat tie and joint arrangement.
- Centrally-positioned tie pointfor different tie systems. One-sided tie technology with spacing adjustment.
- Panel connections with BFD Alignment Coupler – also possible in area of ties.
- Rigid external corners for wall thicknesses from 20 – 60 cm.
- Formlining panels are riveted.
- Compatible with PERI TRIO.

Technical data

- Panel heights:
  330, 270, 120, 90, 60 and 30 cm.
- Panel widths:
  240, 120, 90, 60, 45 and 30 cm.
- Perm. load of platform and brackets:
  150 kg/m².

Permissible fresh concrete pressure according to DIN 18218
Evenness according to DIN 18202, Table 3, Line 7.

Fresh concrete pressure	Height	Tie System MX 18* / DW 20
Hydrostatic pressure Triangular load	2.70 m	67.5 kN/m²
	3.30 m	82.5 kN/m²
Constant load Uniformly distributed load	2.70 m	80.0 kN/m²
	3.30 m	80.0 kN/m²

* Tie System MX 18 is only valid for panel connections with wall thicknesses ≤ 60 cm. Tie System DW 20 is valid for all wall thicknesses.

Perm. fresh concrete pressure 80 kN/m² for 90° corners and 90° T-junctions for wall thicknesses > 40 cm: assembly only with Tie System DW 20 – Walers SRU and ties throughout – see Section D4.

Instructions for Use

The use in a way not intended, deviating from the standard configuration or the intended use according to the Instructions for Assembly and Use, represents a misapplication with a potential safety risk, e.g. risk of falling.

Only PERI original components may be used. The use of other products and spare parts is not allowed.

Changes to PERI components are not permitted.

Care and Maintenance Instructions

In order to maintain the value and operational readiness of the formwork materials over the long term, clean the elements after each use.
Some repair work may also be inevitable due to the tough working conditions.
The following points should help to keep care and maintenance costs as low as possible.

Spray the formwork on both sides with the concrete release agent before each use; this allows easier and faster cleaning of the formwork. Spray the concrete release agent very thinly and evenly!

Spray the rear side of the formwork with water immediately after concreting; this avoids any time-consuming and costly cleaning operations.

When used continuously, spray the panel formlining with the concrete release agent immediately after striking; then clean by means of a scraper, brush or rubber lip scraper. Important: do not clean formlining made of plywood with high-pressure equipment; this could result in the formlining being damaged.

Fix box-outs recesses and mounting parts with double-headed nails; as a result, the nails can be easily be subsequently removed, and damage to the formlining is largely avoided.

Close all unused anchor holes with plugs; this eliminates any subsequent cleaning or repair work. Anchor holes accidentally blocked with concrete are freed by means of a steel pin from the formlining side.

When placing bundles of reinforcement bars or other heavy objects on horizontally-stored formwork elements, suitable support, e.g. square timbers, is to be used; as a result, impressions and damage to the formlining are largely avoided.

Internal concrete vibrators should be fitted, if possible, with rubber caps; as a result, any damage to the formlining is reduced if the vibrator is accidentlly inserted between the reinforcement and formlining.

Never clean powder-coated components, e.g. elements and accessories, with a steel brush or hard metal scraper; this ensures that the powder-coating remains intact.

Use spacers for reinforcement with a large-sized supports or extensive areas of support; this largely avoids impressions being formed in the formlining when under load.

Mechanical components, e.g. spindles or gear mechanisms, must be cleaned of dirt or concrete residue before and after use, and then greased with a suitable lubricant.

Provide suitable support for the components during cleaning so that no unintentional change in their position is possible.

Do not clean components when suspended on a crane.

Cross-System

General
The contractor must ensure that the Instructions for Assembly and Use supplied by PERI are available at all times and are understood by the site personnel.

These Instructions for Assembly and Use can be used as the basis for creating a risk assessment. The risk assessment shall be compiled by the contractor. The Instructions for Assembly and Use do not replace the risk assessment!

Always take into consideration and comply with the safety instructions and permissible loads.

For the application and inspection of PERI products, the current safety regulations and guidelines must be observed in the respective countries where they are being used.

Materials and working areas are to be inspected on a regular basis especially before each use and assembly for:
- signs of damage,
- stability and
- functionality.

Damaged components must be exchanged immediately on site and may no longer be used.

Safety components are removed only when they are no longer required.

Components provided by the contractor must conform with the characteristics required in these Instructions for Assembly and Use as well as all valid construction guidelines and standards. Unless otherwise indicated, this applies in particular to:
- timber components: Strength Class C24 for Solid Wood according to EN 338,
- scaffold tubes: galvanised steel tubes with minimum dimensions of Ø 48.3 x 3.2 mm according to EN 12811-1:2003 4.2.1.2,
- scaffold tube couplings according to EN 74.

Deviations from the standard configuration are only permitted after a further risk assessment has been carried out by the contractor. On the basis of this risk assessment, determine appropriate measures for working and operational safety as well as stability.

Corresponding proof of stability can be provided by PERI on request if the risk assessment and resulting measures to be implemented are made available.

Before and after exceptional occurrences that may have an adverse effect on the safety of the formwork system, the contractor must immediately
- create another risk assessment, with appropriate measures for ensuring the stability of the formwork system being carried out based on the results,
- and arrange for an extraordinary inspection by a qualified and competent person. The aim of this inspection is to identify and rectify any damage in good time in order to guarantee the safe use of the formwork system.

Exceptional occurrences can include:
- accidents,
- longer periods of non-use,
- natural events, e.g. heavy rainfall, icing, heavy snowfall, storms or earthquakes.

Assembly, modification and dismantling work
Assembly, modification or dismantling of formwork systems may only be carried out by qualified personnel under the supervision of an authorized person. The qualified personnel must have received appropriate training for the work to be carried out with regard to specific risks and dangers.

On the basis of the risk assessment and Instructions for Assembly and Use, the contractor must create installation instructions in order to ensure safe assembly, modification and dismantling of the formwork system.

The contractor must ensure that the personal protective equipment required for the assembly, modification or dismantling of the system, e.g.
- safety helmet,
- safety shoes,
- safety gloves,
- safety glasses,

is available and used as intended.

If personal protective equipment (PPE) is required or specified in local regulations, the contractor must determine appropriate load-bearing points on the basis of the risk assessment.
The personal protective equipment to be used is determined by the contractor.

The contractor must
- provide safe working areas for site personnel which can be reached through the provision of safe access ways. Areas of risk must be cordoned off and clearly marked,
- ensure the stability during all stages of construction, in particular during assembly, modification and dismantling of the formwork,
- ensure and prove that all loads are safely transferred.

Utilization
Every contractor who uses or allows formwork systems or sections of the formwork to be used, has the responsibility to ensure that the equipment is in good condition.

If the formwork system is used successively or at the same time by several contractors, the health and safety coordinators must point out any possible mutual hazards and all work must be then coordinated.

System-Specific

Retract components only when the concrete has sufficiently hardened and the person in charge has given the go-ahead for striking to take place.

Anchoring is to take place only if the anchorage has sufficient concrete strength.

During striking, do not tear off the formwork elements with the crane.

If a storm warning is given, additional push-pull props are to be attached or other bracing measures are to be carried out along with implementing the bracing specified in the PERI design tables.

Storage and Transportation

Store and transport components ensuring that no unintentional change in their position is possible. Detach load-bearing devices and lifting gear from the components that have been set down only if they are in a stable position and no unintentional change is possible.

Do not drop the components.

Use PERI load-bearing devices and lifting gear as well as only those load-bearing points provided on the component.

During the moving procedure,
- ensure that components are picked up and set down so that unintentional falling over, falling apart, sliding, falling down or rolling is avoided,
- no persons are allowed to remain under the suspended load.

The access areas on the jobsite must be free of obstacles and tripping hazards as well as being slip-resistant.

For transportation, the surface must have sufficient load-bearing capacity.

Use original PERI storage and transport systems, e.g. crate pallets, pallets or stacking devices.

Transport

- **The panels should never be treated with a concrete release agent immediately before transport due to safety reasons.**
- **Manually-created transport units must be correctly stacked and secured!**
- **Instructions for Use for PERI Pallet and Stacking Devices must be followed at all times!**

PERI pallets and stacking devices are suitable for lifting by crane or forklift. They can also be moved with the PERI Pallet Lifting Trolley. All pallets and stacking devices can be lifted using both the longitudinal and front sides.

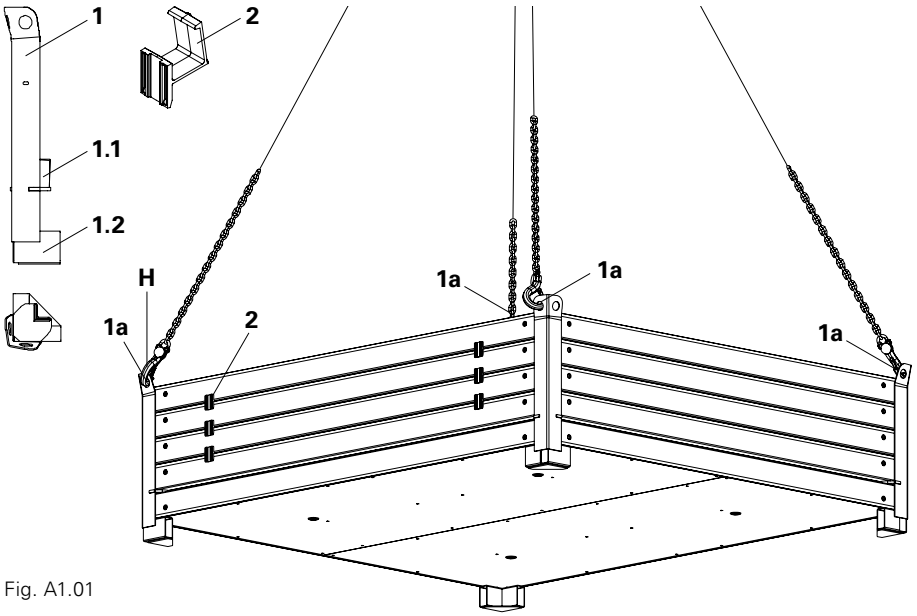


Fig. A1.01

Pos.	Aids	Item no.
1	Stacking Device MX	115058
2	Stacking Aid MX	113019

Stacking Device MX

- **Only panels of the same size are to be transported in one stack!**
- **Use 4-sling lifting gear. On each stacking device, attach a hook (H) to one load-bearing point (1a).**
  → Four load-bearing points
(Fig. A1.01)

Perm. load-bearing capacity
650 kg/device = 2.6 t/stack.

Number of panels per stack
2 – 5 MAXIMO panels of one size with all-round 6 cm edge profile.

Crane sling angle ≤ 45°
4-sling lifting gear L = 3.0 m.
(Fig. A1.01)

Stacking height
3 stacks, one on top of the other.

Putting loads into the stacking device
1. Place the first panel with the formlining facing downwards on the rectangular tube (1.2). (Fig. A1.02)
2. Place the second panel with the formlining facing upwards in the stacking device. (Fig. A1.03)
   → The vertical support plate (1.1) positions the panel and now allows safe transportation of the panels.
3. Position Stacking Aid MX (2) – 2 per longitudinal side.
   → Formlining is protected.
4. Place other panels with the formlining facing upwards.
5. Alternatively place stacking aids and panels until the maximum number of panels has been reached.

Panel removal
Remove panels individually with locking pins of the transport lifting gear.

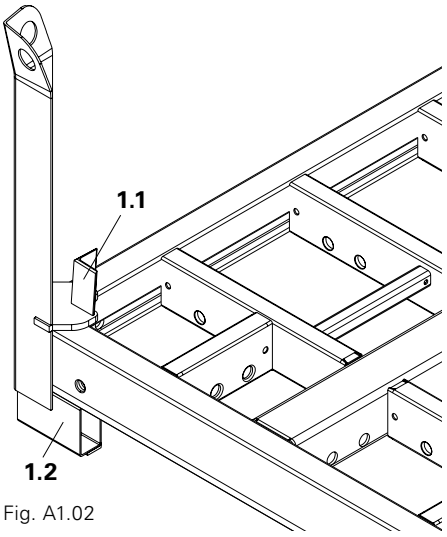


Fig. A1.02

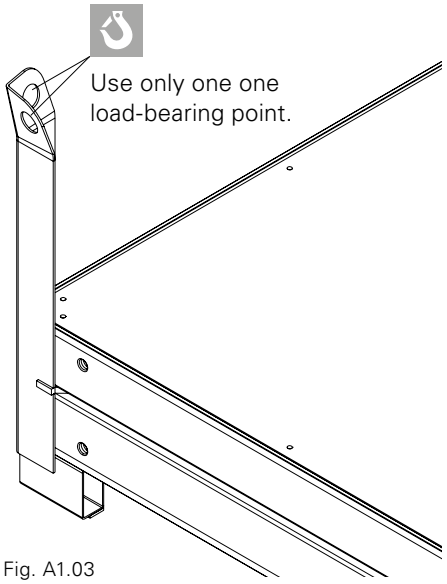


Fig. A1.03

Stacking Aids MXI, MXA, and MX Flat

Stacking aids
- **are not transport safety devices!**
- **are used as transport safety devices only in combination with transport belts.**

Pos.	Component	Item no.
3	Stacking Aid R MXI	118112
4	Stacking Aid L MXI	118110
5	Stacking Aid R MXA	118105
6	Stacking Aid L MXA	118103
7	Stacking Aid MX Flat	118100

Stacking Aid MXI

Take into account there are right and left versions.

Inside Corners MXI 18, height x 50/20
Stack with
- two shaft corners (not shown),
- four shaft corners: install stacking aids only on the corners. (Fig. A1.04a)

Inside Corners MXI 18, height x 60
Stack with
- two shaft corners, (Fig. A1.04b)
- four shaft corners: install stacking aids only on the corners. (not shown)

Stacking Aid MXA

Take into account there are right and left versions.

Outside Corners MXA height x 45 or MXA height x 35
(Fig. A1.05)

Stacking Aid MX Flat

For Shaft Corners MXSE 18 x height
Stack with
- two shaft corners: install stacking aids on the corners at the top and bottom, (Fig. A1.06a)
- four shaft corners: install Stacking Aids MX Flat (7) only on the corners at the bottom. (Fig. A1.06b + A1.06c)

Push back positioning waler for stacking, and secure. (Fig. A1.06c)

MXI

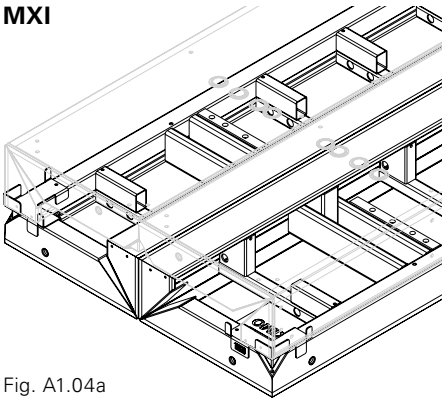


Fig. A1.04a

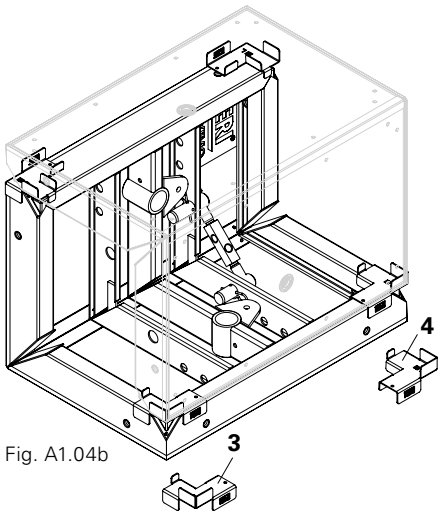


Fig. A1.04b

MXA

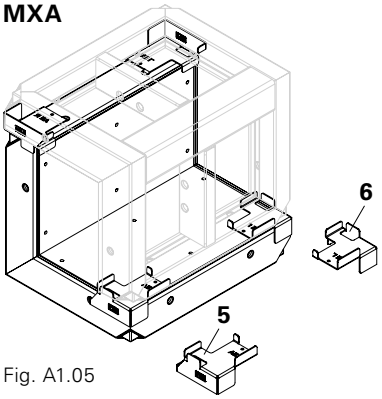


Fig. A1.05

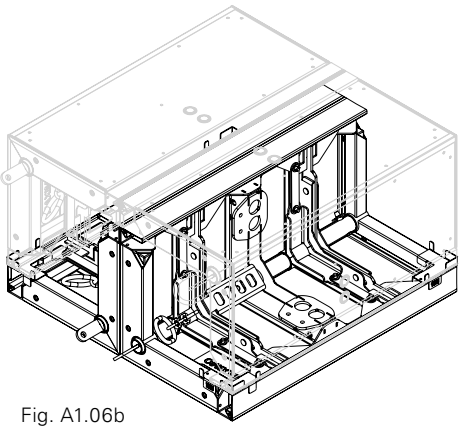


Fig. A1.06b

MX Flat

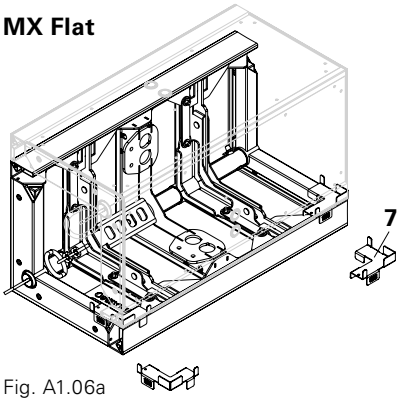
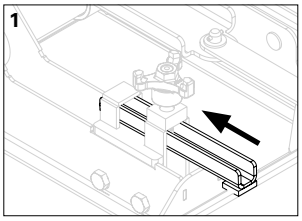
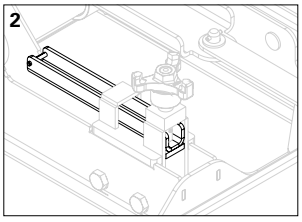


Fig. A1.06a





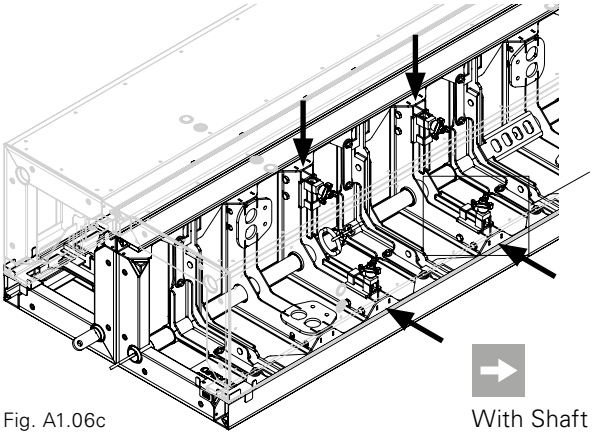


Fig. A1.06c

With Shaft Corners MXSE 18 height > 120, turn the top panel. (not shown)

Assemble placing formwork

- **Secure panels with push-pull props to prevent tipping over and counter wind forces!**
- **Secure push-pull props first, and then release crane lifting gear!**

1. Insert all swivel nuts in the tie points. (Fig. A2.01)
2. Tighten eyebolts of the swivel nuts.
3. Mount push-pull props, see Section A6.
   – On the first panel: 2 push-pull-props. (Fig. A2.02)
   – Second panel onwards: 1 push-pull prop. (Fig. A2.05)
4. Mount Lifting Hook MAXIMO 1.5 t.
5. Attach the 2-sling lifting gear.
6. Transport panel to place of operation by crane. (Fig. A2.03)
7. Secure push-pull prop, see Section A6.
8. Release crane lifting gear.

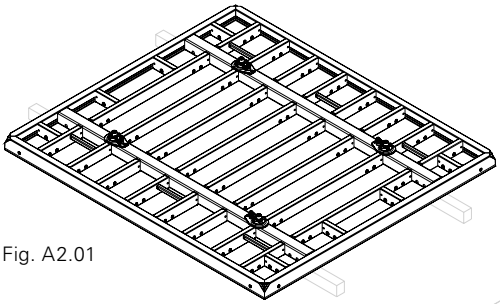


Fig. A2.01

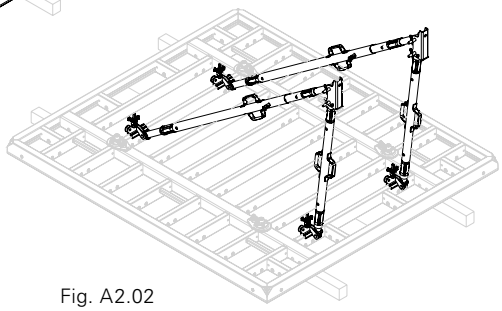


Fig. A2.02

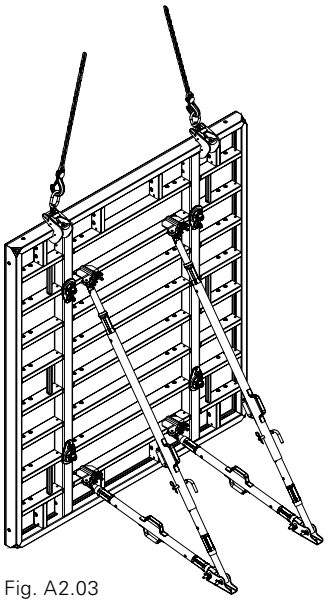


Fig. A2.03

Mount closing formwork
with work and concreting scaffold

Install top anchor first, and then release the crane lifting gear!

1. Mount the work and concreting scaffold on the horizontally-positioned panel, see Section A7.
2. Install decking and guardrails. (Fig. A2.04a + A2.04b)
3. Mount Lifting Hook MAXIMO 1.5 t.
4. Transport panel to place of operation by crane.
5. Install anchor, see Section A5.
6. Release crane lifting gear.

Forming from the external or internal corner in the direction of the compensation.

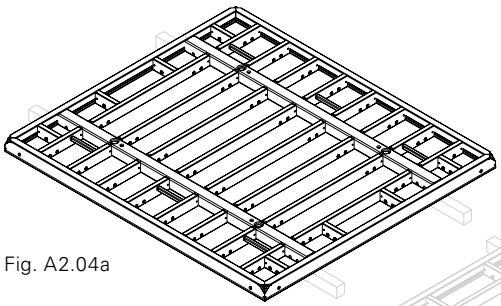


Fig. A2.04a

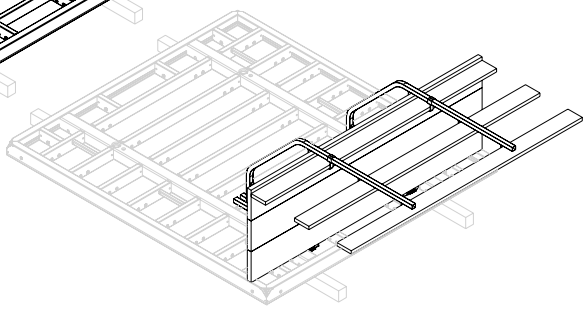


Fig. A2.04b

Concreting
From a secure working scaffold.
(Fig. A2.05)

Striking and moving
from the compensation to the corners.

- **Wear personal protective equipment (PPE) to prevent falling from a height.**
- **Before moving, dismantle the work and concreting scaffold!**
- **Concrete strength must be taken into account!**
- **Secure panels against tipping over and wind forces!**
- **Secure push-pull props first, and then release crane lifting gear!**

Releasing the closing formwork
1. Dismantle work and concreting scaffold.
2. Mount Lifting Hook MAXIMO 1.5 t on the panel and attach to crane lifting gear.
3. Remove ties.
4. Release panel connection.
5. Release panel from the concrete, e.g. with a stripping bar.
6. Carefully lay the panel down and clean.

Moving the primary formwork
1. Dismantle opposing guardrails.
2. Mount Lifting Hook on the panel and attach to the crane lifting gear.
3. Release panel connection.
4. Remove anchor bolts of the push-pull props.
5. Release panel from the concrete, e.g. with a stripping bar.
6. Carefully lay the panel down and clean.
7. Move panel to place of installation by crane.
8. Connect panel with the Alignment Coupler BFD, see Section A4.
9. Secure push-pull props, see Section A6.
10. Release crane lifting gear.

(Fig. A2.06)

Closing the formwork
1. Move panel of the closing formwork to the place of installation by crane.
2. Connect panels.
3. Install anchors.
4. Release crane lifting gear.
5. Mount work and concreting scaffold.

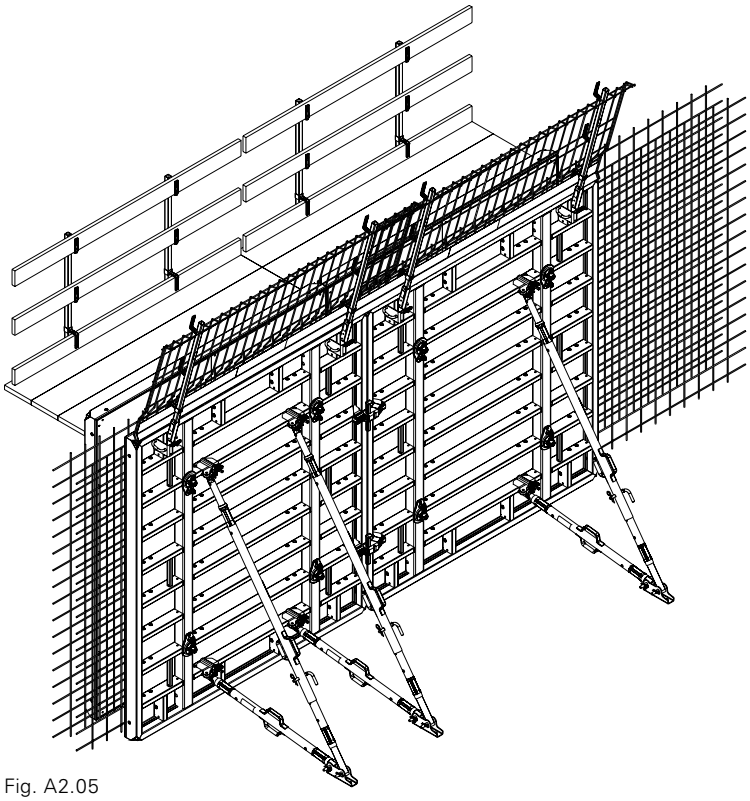


Fig. A2.05

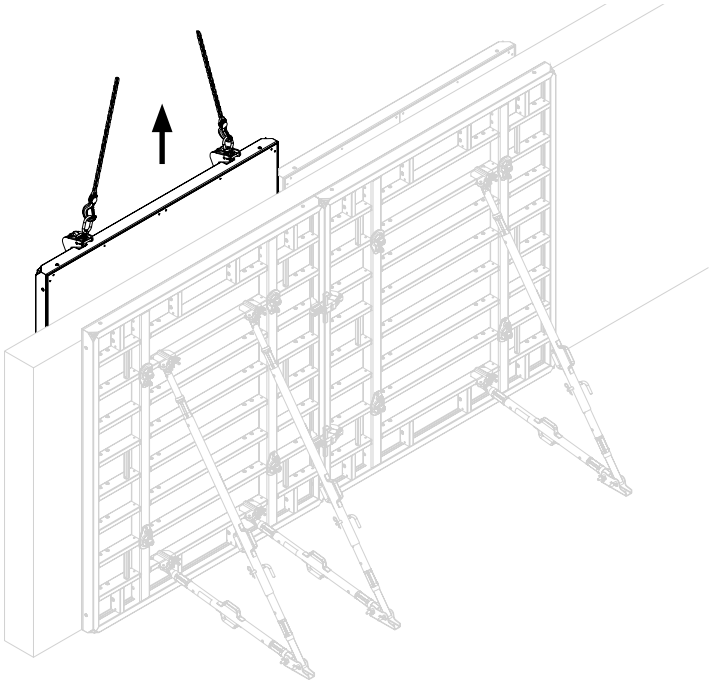
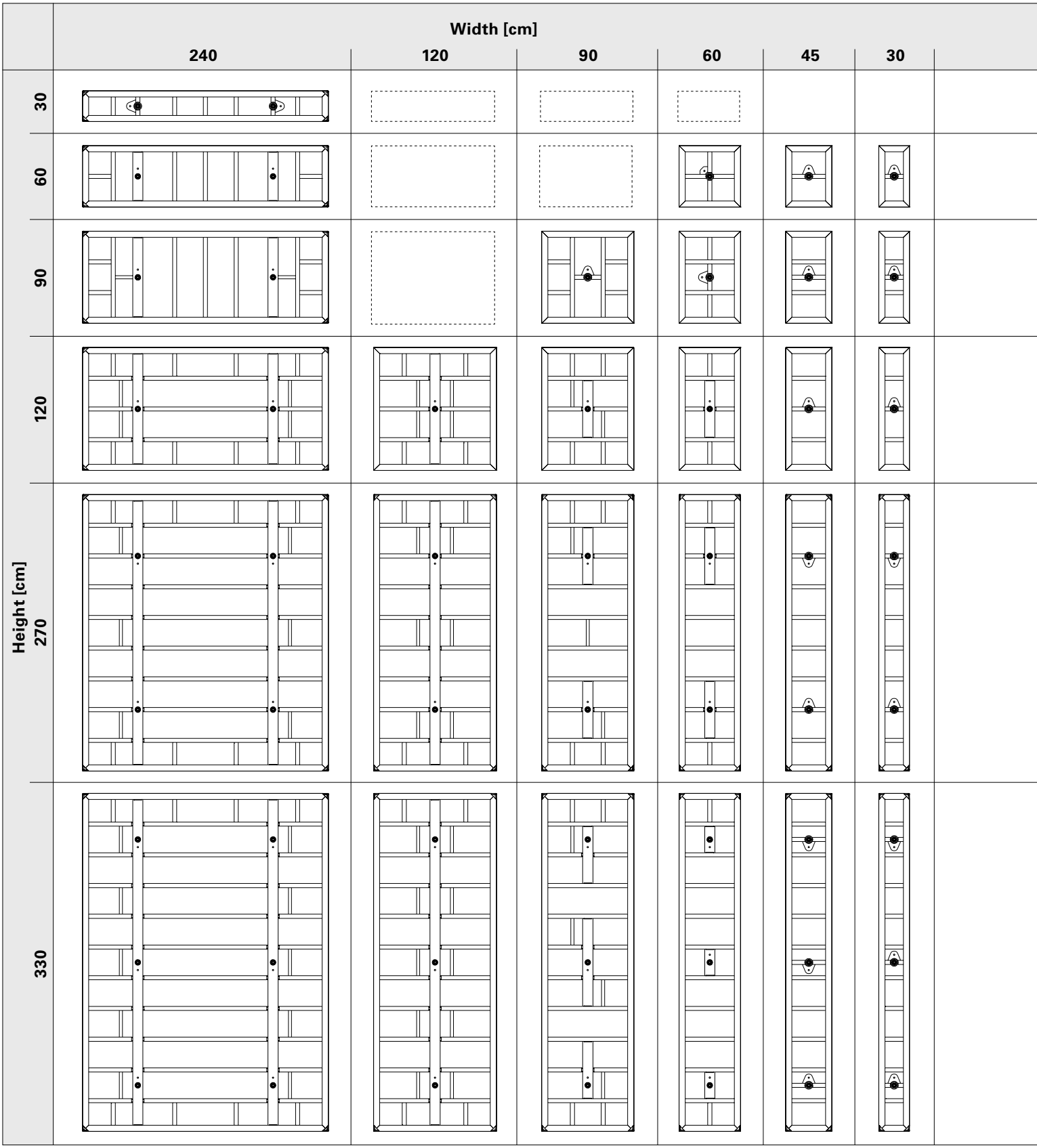


Fig. A2.06

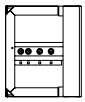
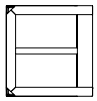
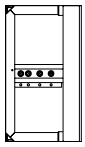
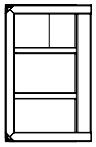
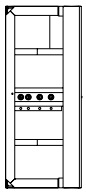
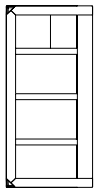
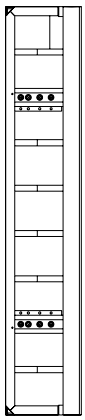
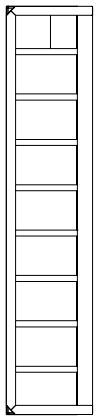
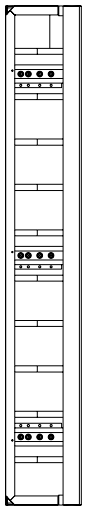
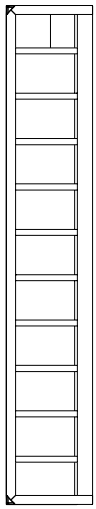
Cleaning
with PERI Bio Clean and release agent spraying equipment.

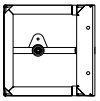
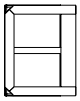
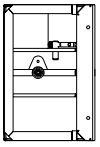
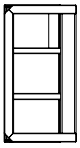
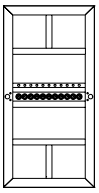
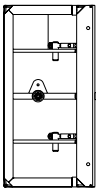
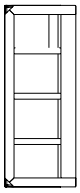
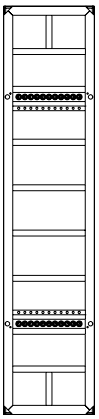
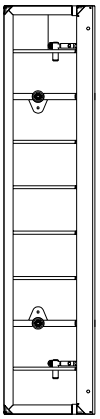
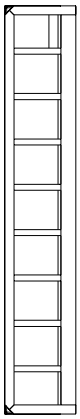
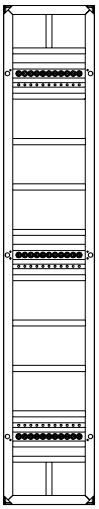
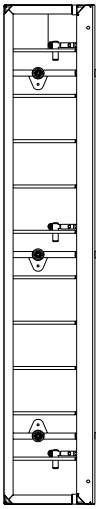
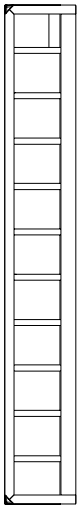
Consider PERI Bio Clean operating instructions!

A3 Panels

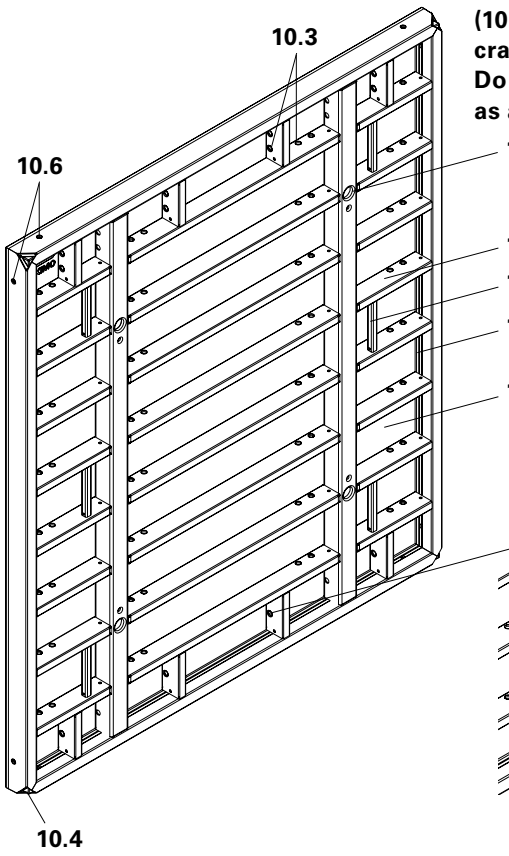


A3 Panels

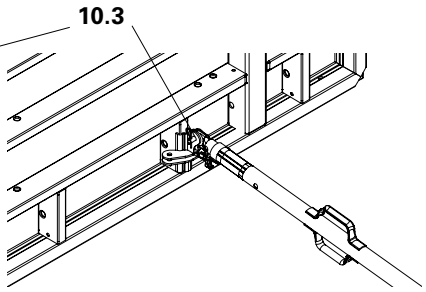
	Inside Corner MXI 18, 50/20	Outside Corner MXA 45
		
		
		
		
		

Multi-Purpose Panel MXM 18, 60	Inside Corner MXI 18, 60	Outside Corner MXA 35
		
		
		
		
		

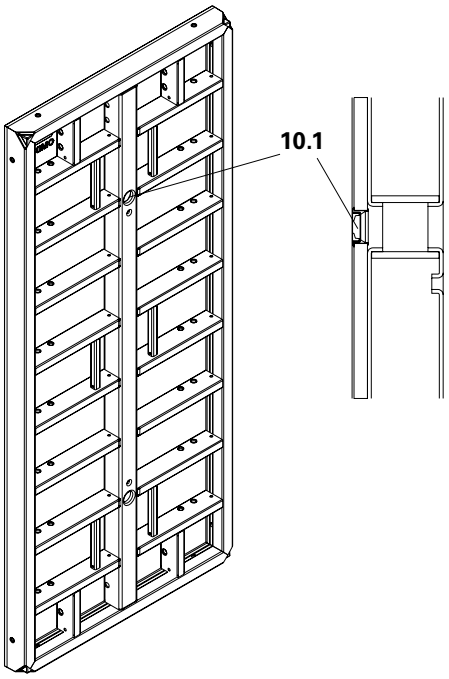
Panel Width 240 cm

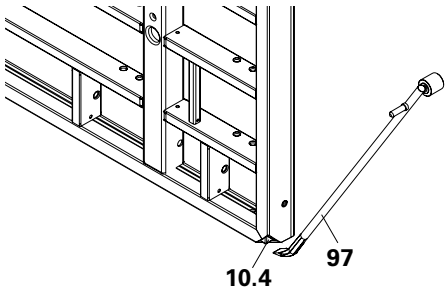


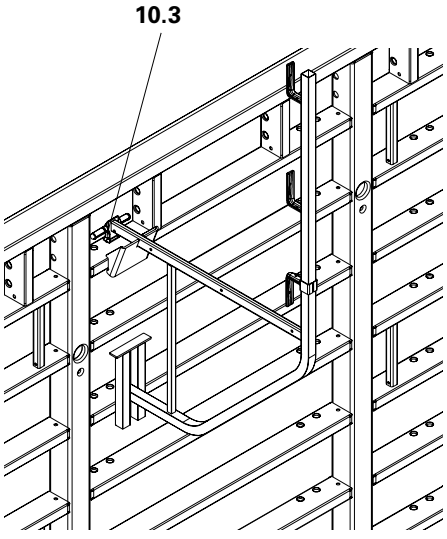
Do not use the positioning strut (10.5) for transporting with the crane!
Do not use the positioning strut as a climbing aid!

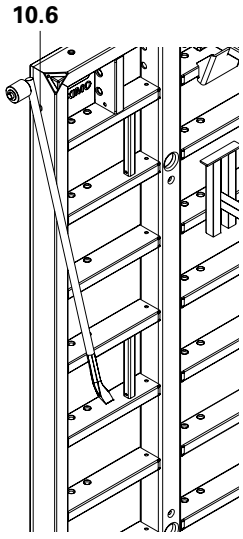


Panel Width 120 cm









(10.1) Tie point with sealing
(10.2) Panel strut
(10.3) Connecting hole possibilities for scaffold brackets, push-pull props and other accessories
(10.4) Levering corner
(10.5) Positioning strut for positioning the panel
(10.6) Transportation opening, e.g. for stripping lever
(10.7) Frame
(10.8) Formlining
(97) Stripping lever

Alignment Coupler BFD

Item No. 023500 (Fig. A4.01a)

Height (H)	BFD standard joint	MXI 18, H x 50/20	MXI 18, H x 60	Length compensations	Stopend Formwork	Extensions
		see Section				
270 cm	2 pieces	B1+B3	D2+D3	B5	B6	B7
330 cm	3 pieces	C1+C3	D2+D3	C6	C7	C8

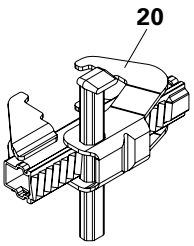


Fig. A4.01a

Assembly

1. Place wedge in upper end position.
2. Open sliding part. (Fig. A4.01b)
3. Place BFD on panel strut.
4. Close sliding part.
5. Secure wedge. (Fig. A4.02a)
   → The Alignment Coupler is now securely in position.

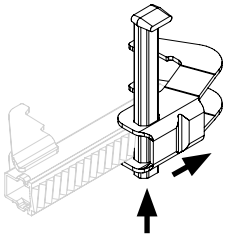


Fig. A4.01b

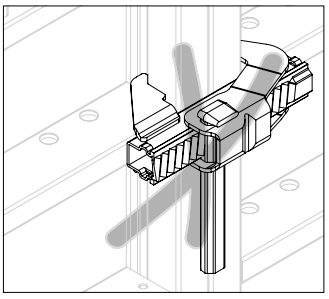


Fig. A4.02b

If the wedge head rests on the sliding part, there is no clamping effect! (Fig. A4.02b)
Then: release wedge, re-position the sliding part and secure once again with the hammer.

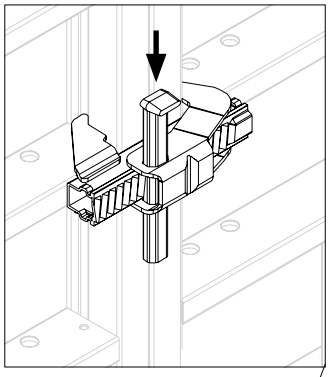


Fig. A4.02a

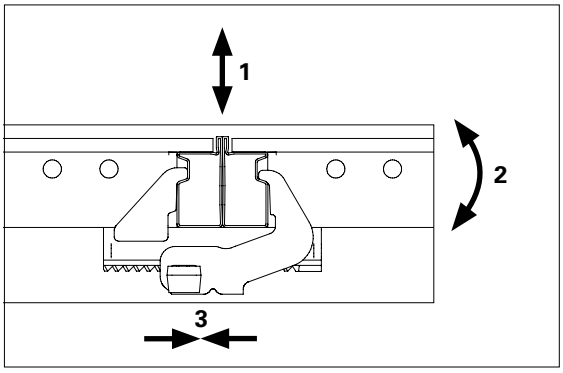


Fig. A4.03

When securing the wedge, the following effects occur due to the angle of the frame profile:
– **1** Panels are flush.
– **2** Panels are aligned.
– **3** Panels are tightly connected. (Fig. A4.03)

Arrangement of the Alignment Couplers

Height 270 cm, see Fig. A4.04a.
Height 330 cm, see Fig. A4.04b.

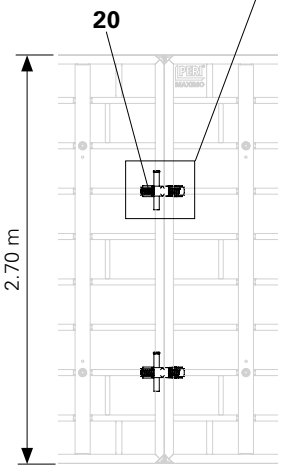


Fig. A4.04a

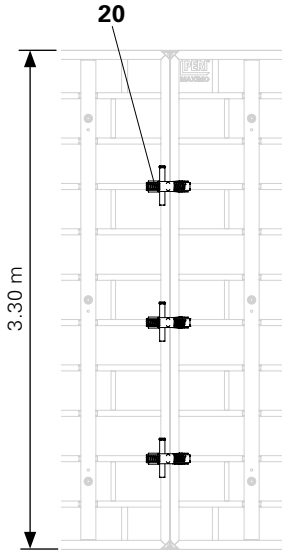


Fig. A4.04b

Compensation Walers

MAR 85 and MAR 170
(Fig. A4.05)

The Compensation Walers MAR have a triple function as panel connections: to brace, align, and transferring forces.

Areas of use:
– length compensation: see B5,
– corners with double Wall Thickness Compensator WDA,
– extensions at great heights: see B7,
– offset struts, see Fig. A4.06a.

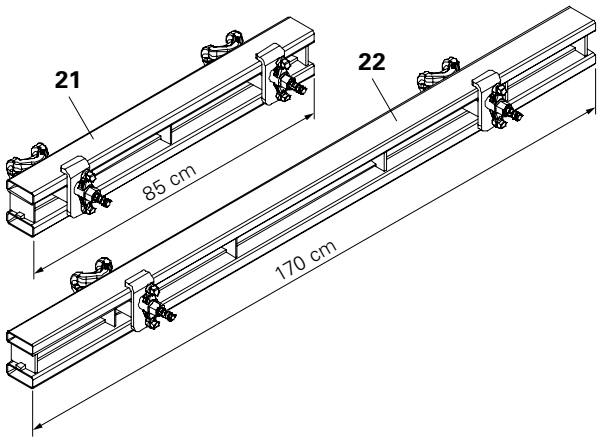


Fig. A4.05

Pos.	Component – alternative	Item no.
21	Compensation Waler MAR 85-3	124941
22	Compensation Waler MAR 170-3	124942

Assembly
1. Insert hook in the connecting holes of the panel.
2. Tighten nut.

(Fig. A4.06)

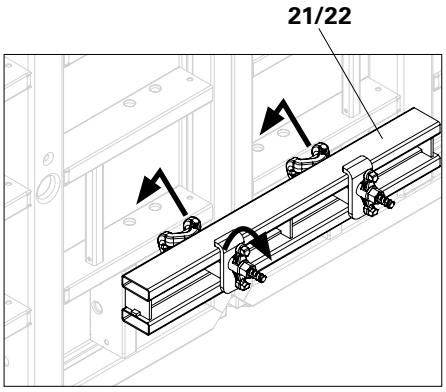


Fig. A4.06

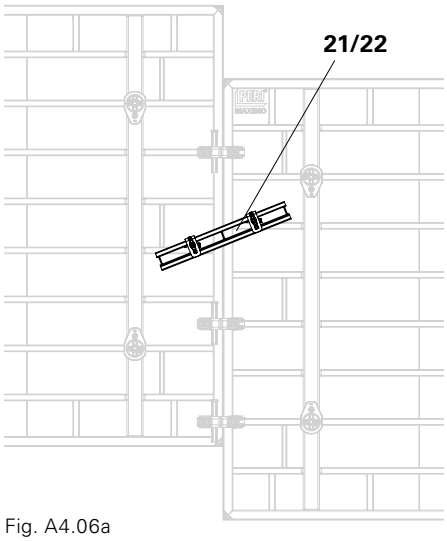


Fig. A4.06a

With T-junctions on the straight wall, install Compensation Waler MAR 170 (22) centrally to the outgoing wall. Attach the double hook of the compensation waler to the middle holes. (Fig. A4.07)
90° T-junctions, see Section D3.

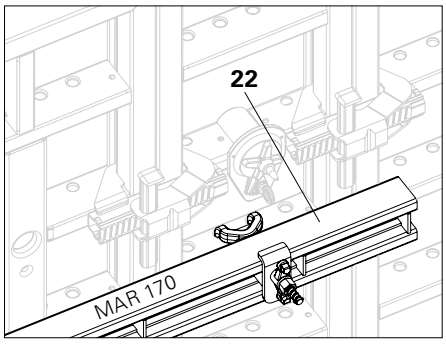


Fig. A4.07

Tie System MX 18

Perm. tensile force of the tie rods:
130 kN.

MX 18 Ties 15 – 25
Item no. 123901
Ties for wall thicknesses of
15, 17.5, 20, 22, 24 and 25 cm (30).
(Fig. A5.01)

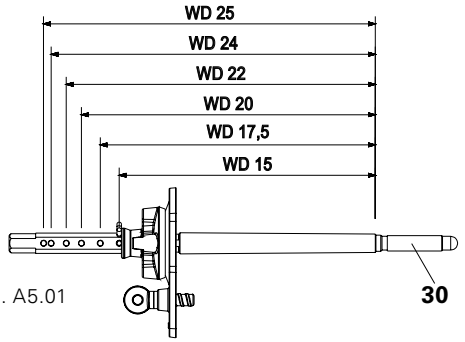


Fig. A5.01

MX 18 Ties 20 – 30
Item no. 123902
Ties for wall thicknesses of
20, 22, 24, 25 and 30 cm (31).
(Fig. A5.02)

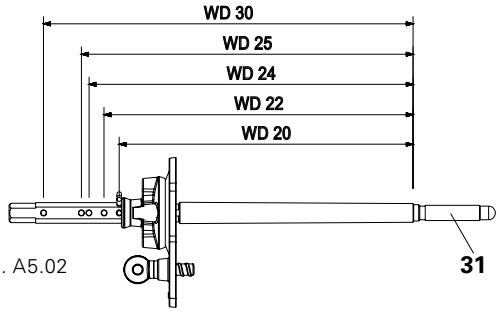


Fig. A5.02

MX 18 Ties 30 – 40
Item no. 123903
Ties for wall thicknesses of
30, 35, 36 and 40 cm (32).
(Fig. A5.03)

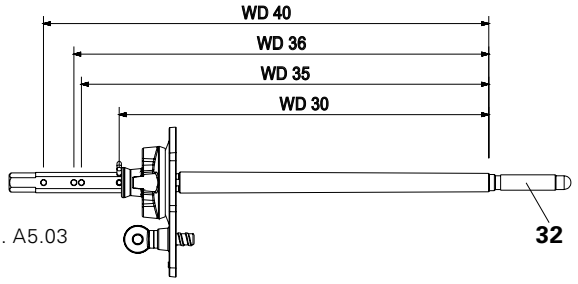


Fig. A5.03

MX 18 Ties 40 – 50
Item no. 123904
Ties for wall thicknesses of
40, 45 and 50 cm (33).
(Fig. A5.04)

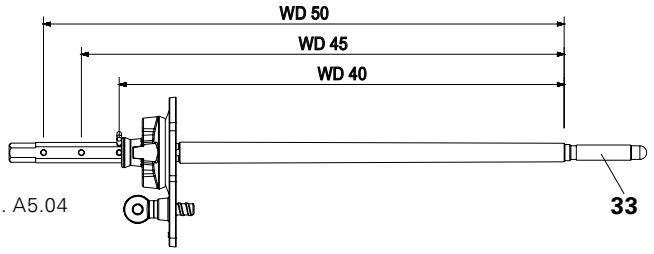


Fig. A5.04

MX 18 Ties 50 - 60
Item no. 123905
Ties for wall thicknesses of
50, 55 and 60 cm (34).
(Fig. A5.05)

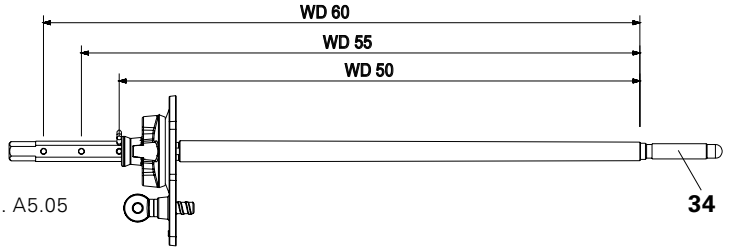


Fig. A5.05

Mount ties

Pos.	Components	Item no.
10	MAXIMO MX 18 Panel	acc. to size
31	MX 18 Tie	acc. to size*
35	Swivel Nut MX 18	123900
40	TRH Tie Rod Spanner	108719
57	Scaffold ratchet alternative: to Pos. 40	796061

* size of tie is determined by wall thickness.

Prepare primary formwork for initial use

1. Grease tie holes (10.1) in panel (10) and sleeve (35.1) of the Swivel Nut MX 18 (35).
   (Fig. A5.04a)
2. Fix Swivel Nut MX 18 to the primary formwork by means of the ring spanner (35.2). Use Tie Rod Spanner (40) or scaffold ratchet (57)!
   (Fig. A5.04b)

Prepare ties

1. Mark out wall thickness with cotter pin (31.1).
2. Turn nut (31.2) to the cotter pin.
   (Fig. A5.05)
3. Grease MX 18 Tie.

Closing formwork
Important: pay attention to the order!

1. Push MX 18 Tie (31) through the tie hole of the formwork and screw into Swivel Nut MX 18 (35).
2. Turn the plate with the ring spanner so that it can be fixed in position.
3. Screw in MX 18 Tie with the Tie Rod Spanner as far as possible.
   → The nut (31.2) is lying flush on the formwork.
4. Slightly tighten the ring bolt (31.3) by means of the Tie Rod Spanner or scaffold ratchet (57).

(Fig. A5.06)

Release ties.
Important: pay attention to the order!

1. Release ring bolt (31.3) using the Tie Rod Spanner or scaffold ratchet (57).
2. Screw out MX 18 Tie (31) with the Tie Rod Spanner.

(Fig. A5.07)

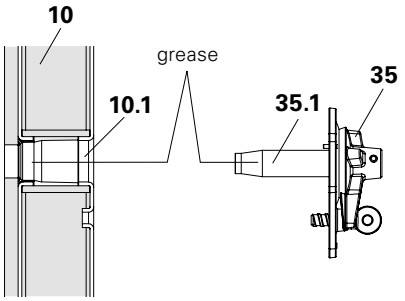


Fig. A5.04a

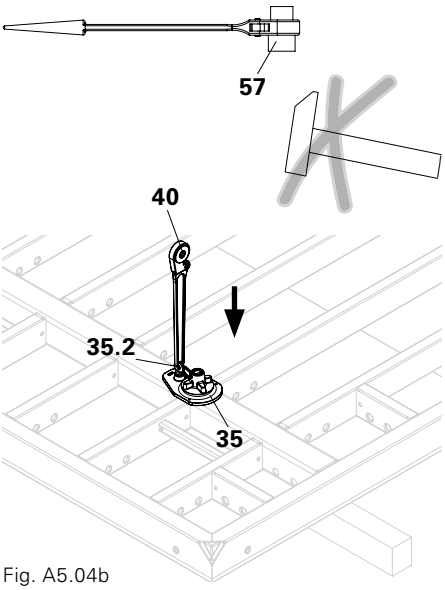


Fig. A5.04b

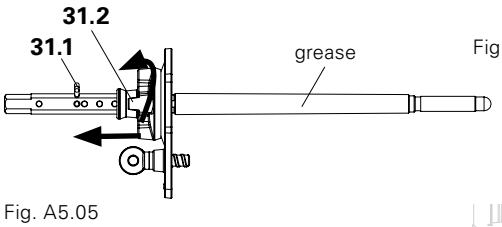


Fig. A5.05

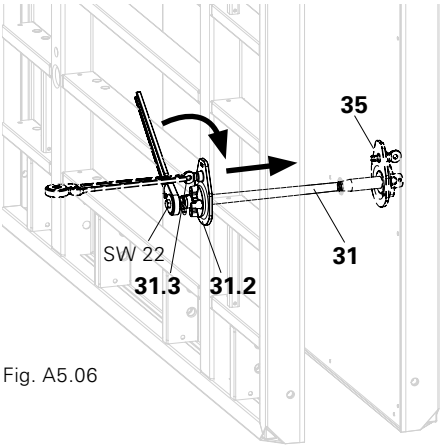


Fig. A5.06

Before moving each time, tighten Swivel Nut MX 18 with the ring bolt.

- Only use a Tie Rod Spanner (40) or scaffold ratchet (57).
- Do not attach any extensions – results in tie damage.
- Do not use any ties which are damaged.

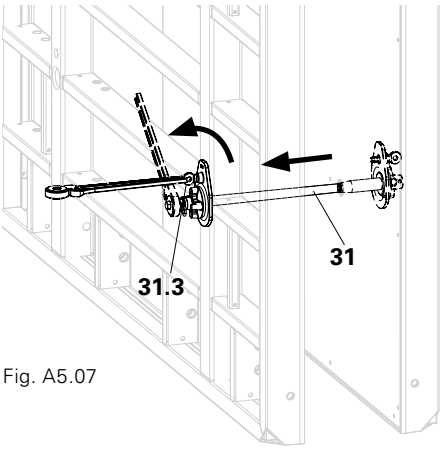


Fig. A5.07

Closures

Plug MXM 18, D = 26 mm
Item no. 125099
Closing of tie holes in the formlining, e.g. Multi-Purpose Panel MXM 18, height x 60, Inside Corner MXI 18, height x 50/20 and tie hole.
(Fig. A5.08 + A5.08a)



Fig. A5.08

Example:
Inside Corner MXI 18, height x 50/20

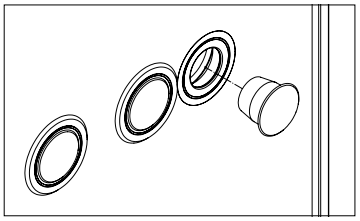


Fig. A5.08a

Plug MX Ø 24 – 28 mm
Item no. 125300
Visually-attractive closure of the tie point in the concrete. (Fig. A5.09)



Fig. A5.09

Miscellaneous
Tie Rod Wrench (41) for one-man tie point operations from one side of the formwork. (Fig. A5.10)

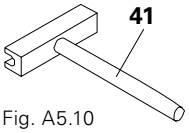


Fig. A5.10

Alternative tie system
Tie System DW

DW 20
For high formwork pressure.
Permissible load of the tie rod according to DIN 18216: 150 kN.
(Fig. A5.11)

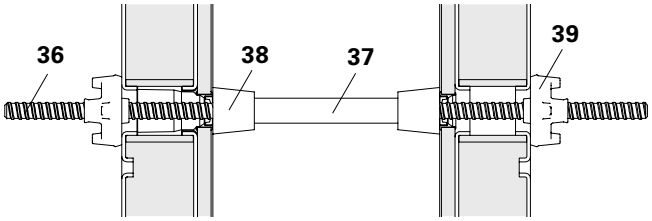


Fig. A5.11

Pos.	Components	Qty
36	Tie Rod DW 20	**1x**
37	Spacer Tube DR 28	**1x**
38	DK Sealing Cone	**2x**
39	Swivel Nut DW 20	**2x**

Inclined Ties

- The conical tie hole allows inclined anchoring of up to 4° on all sides. (Fig. A5.11 + A5.15)
- Inclined anchoring is possible with both vertically and horizontally-positioned panels.
- Secure panel against lifting!

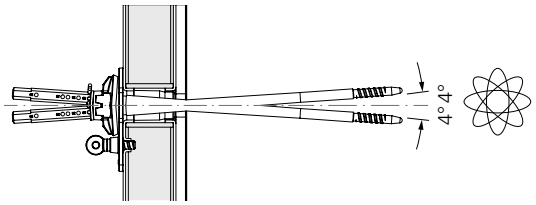


Fig. A5.11

For the MX 18 Tie and Tie Rod DW 20, there are further areas of application:

MX 18 Tie
Inclined on one side: max. 4°.
(Fig. A5.12)

Inclined on both sides: max. 2 x 4°.
(Fig. A5.13)

Height offset: max. 1 cm per 10 cm wall thickness.
(Fig. A5.14)

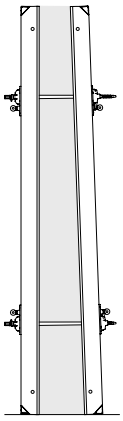


Fig. A5.12

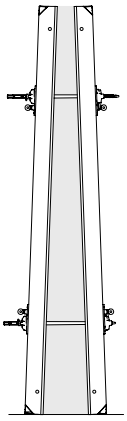


Fig. A5.13

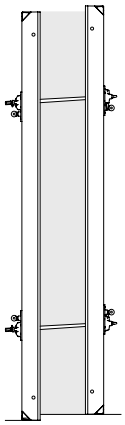


Fig. A5.14

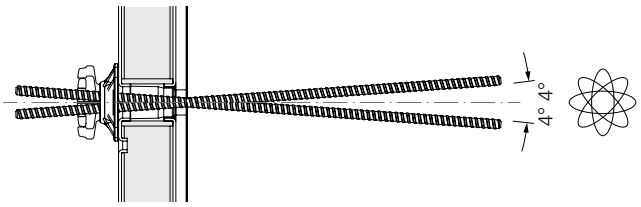


Fig. A5.15

Tie Rod DW 20
Inclined on one side: max. 4°.
(Fig. A5.16)

Inclined on both sides: max. 2 x 4°.
(Fig. A5.17)

Height offset: max. 1 cm per 10 cm wall thickness.
(Fig. A5.18)

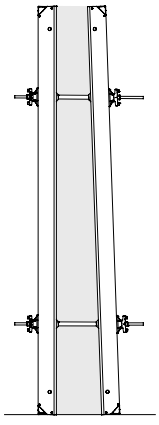


Fig. A5.16

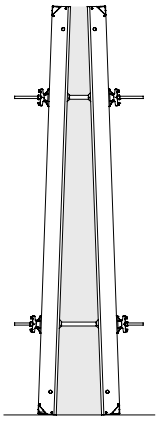


Fig. A5.17

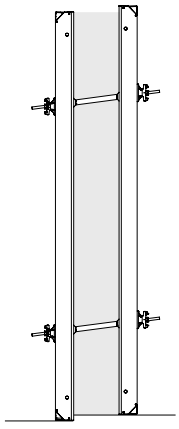


Fig. A5.18

Closing Tie Points

Sealing against pressing water and non-pressing water for waterproof tie points as well as fire and soundproof tie points.

There are three types of plugs:

1. **Stopper MX 18-50 MF LS (90)**
   Against non-pressing water and sound.
2. **Stopper MX 18-50 OF LS (91)**
   Against non-pressing water, fire and sound.
3. **Stopper MX 18-75 MF-S (92)**
   Stopper MX 18-75 MF-L (93)
   Against pressing water, fire and sound.
4. **Stopper MX 18-75 OF-S (94)**
   Stopper MX 18-75 OF-L (95)
   Against pressing water, fire and sound.

(Fig. A5.19)

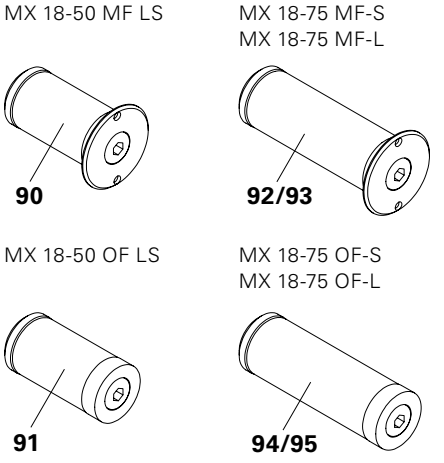


Fig. A5.19

Stoppers are **not** suitable for use in aggressive water or similar, e.g. sewage treatment plants!

Possible uses of the Stopper MX 18 for tie points with special requirements

Pos.	Stopper	Item no.	Sealing against water	Fire-resistance	Soundproofing
90	**MX 18-50 MF LS**	127589	Sealing against non-pressing water. Plugs fitted on the water side.	Walls with Fire Resistance F90. **Test report available.** Plugs on both sides.	Walls with sound protection function. **Test report available.** Plugs on one side or both sides.
91	**MX 18-50 OF LS**	127590	Sealing against non-pressing water. Plugs fitted on the water side.	Walls with Fire Resistance F90. **Test report available.** Plugs on both sides.	Walls with sound protection function. **Test report available.** Plugs on one side or both sides.
92 **93**	**MX 18-75 MF-S** **MX 18-75 MF-L**	127430 127488	For waterproof components, **Test report available.** Plug on both sides.	Walls with Fire Resistance F90. **Test report available.** Plugs on both sides.	Walls with sound protection function. **Test report available.** Plugs on one side or both sides.
94 **95**	**MX 18-75 OF-S** **MX 18-75 OF-L**	127432 127490	For waterproof components, **Test report available.** Plug on both sides.	Walls with Fire Resistance F90. **Test report available.** Plugs on both sides.	Walls with sound protection function. **Test report available.** Plugs on one side or both sides.

Stopper MX 18-50

Stoppers MX 18-50 MF LS (90) and MX 18-50 OF LS (91) can be installed in tie holes with small as well as large diameters. (Fig. A5.20)

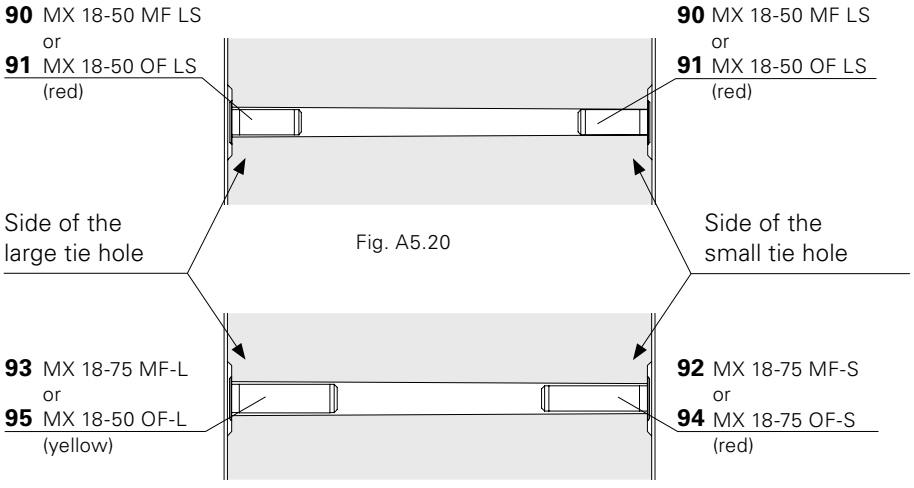


Fig. A5.20

Stopper MX 18-75

Always install Stopper MX 18-75 MF-S (red) (92) in tie holes with small diameters and Stopper MX 18-75 MF-L (yellow) (93) in tie holes with large diameters. (Fig. A5.21)

Fig. A5.21

Assembly

1. If necessary, pre-tension Stopper (91 / 92 / 93) 5 mm by means of an allen key.
2. Insert Stopper into the tie opening up to the level of the flange.
3. Attach Stud Spanner MX 18.
4. Tension the Stopper with 10 Nm.

(Fig. A5.22)

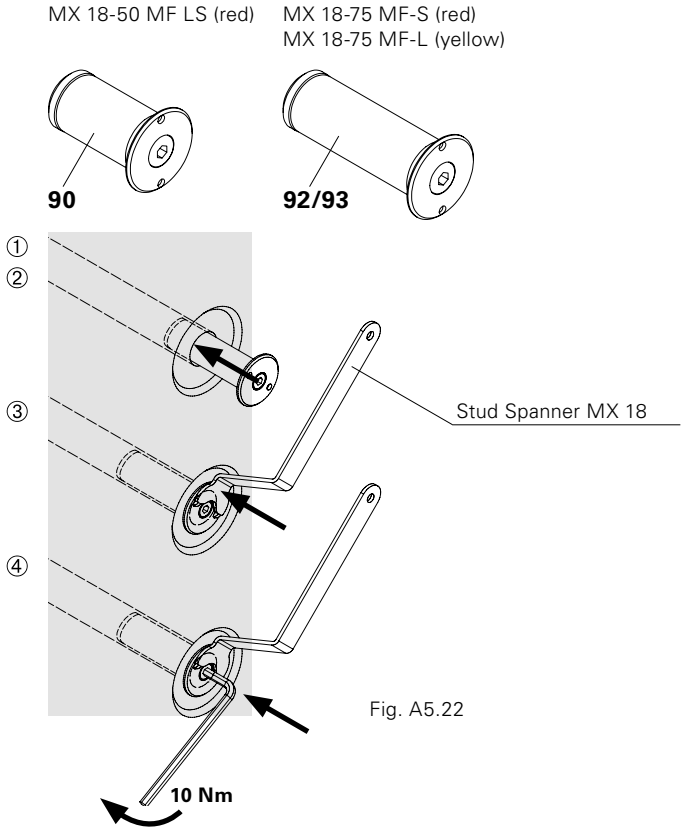


Fig. A5.22

Assembly

1. Pre-tension Stopper (91) 5 mm by means of an allen key in order that it can be pushed into the tie opening.
2. Insert Stopper using an allen key up to the length of the Stopper.
3. When tensioning, make sure the allen key is at an angle.
   → Overtightening of the Stopper is therefore prevented.
4. Tension the Stopper with 10 Nm.

(Fig. A5.23)

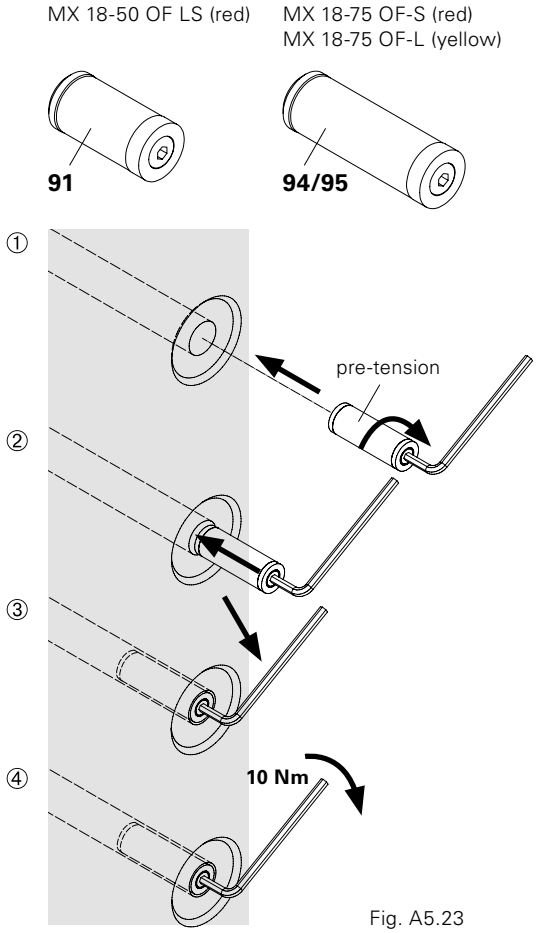


Fig. A5.23

Standard application

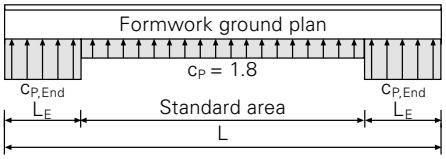
		Formwork height h [m] System 1						Formwork height h [m] System 2			
		3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00
Permissible width of influence [m]	**EB_{ref}**	**4.41**	**3.42**	**2.69**	**2.22**	**2.02**	**1.74**	**2.45**	**2.07**	**1.80**	**1.52**
Actual push-pull prop load [kN]	F_{RS1}	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.0	11.5	11.5
	F_{RS2}							10.9	11.5	11.2	10.5
Actual kicker load [kN]	F_{AV}	2.7	2.9	2.8	2.7	3.2	3.5	4.2	3.6	3.4	3.1
Base plate Resulting force [kN]	①	13.7	13.7	13.5	13.4	13.7	13.9	11.5	11.0	11.5	11.5
	②							14.2	14.3	13.7	12.8
Base plate Resulting angle of attack [°]	①	52.4	51.1	51.1	51.1	49.4	48.2	60.0	60.0	60.0	60.0
	②							47.9	49.8	49.9	49.8
Lifting force V_{Wind} [kN/m]		2.5	3.1	3.9	4.7	5.1	5.9	8.4	9.9	11.4	13.0
x = Distance of base plate from rear edge of formwork [m]	x_1	1.2	1.6	2.0	2.4	3.0	3.6	4.2	4.7	5.1	5.5
	x_2							2.6	2.6	2.8	3.0
y = Top connection point from top of formwork [m]	y_1	1.0	1.2	1.5	1.8	1.8	1.8	1.5	1.8	2.1	2.4
	y_2							4.5	5.5	6.2	6.9
q(z=h) = q_h [kN/m²]		0.59	0.59	0.59	0.59	0.59	0.61	0.64	0.66	0.69	0.71

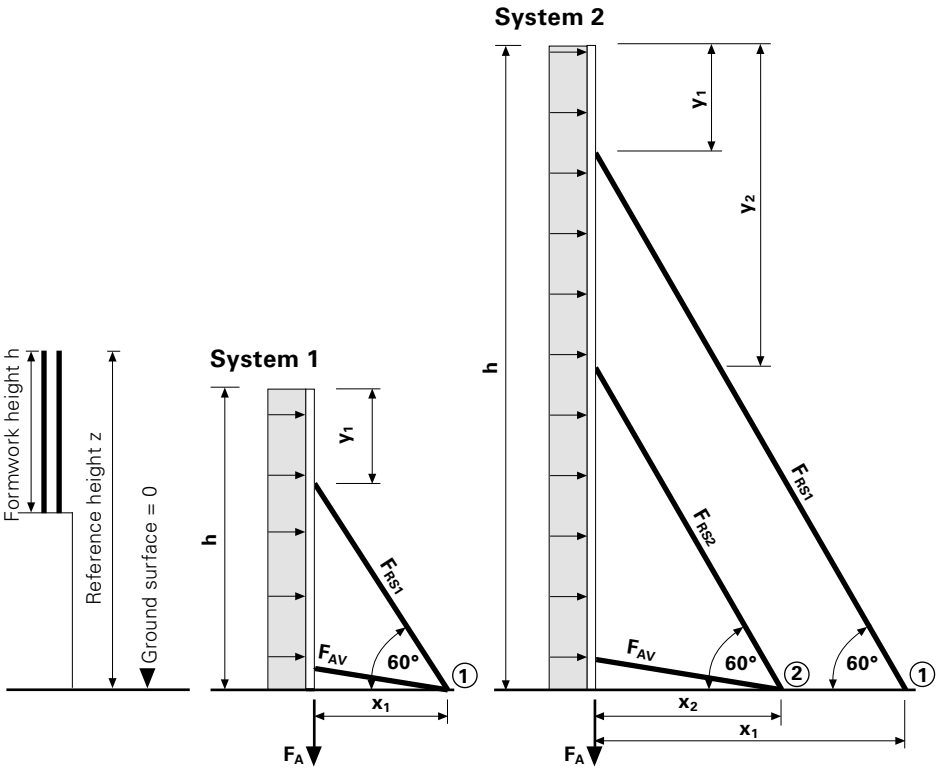
Load assumptions:
- Wind loads according to DIN 1055-4:2005-03 w = q(z) x cp x κ [kN/m²]
- Inland, Wind Load Zone 2
- Assumed aerodynamic coefficient c_p = 1.8 (see graphic, below)
- Formwork in vertical position on ground
- Service life factor κ = 0.6
- q(z) = peak velocity pressure
- Inclination of the Push-Pull Prop to the horizontal 60°
- Values are characteristic values

Note:
Anti-lift off protection is to be provided if the lifting force
$F_A = 1.5 \times V_{Wind} - 0.9 \times G \times h > 0$
G = surface area weight of the formwork including platforms.

In the end area L_E, the following c_p-values or wind loads are assumed:
L/h ≤ 3: $c_{p,\,End}$ = 2.3*
L/h = 5: $c_{p,\,End}$ = 2.9*
L/h ≥ 10: $c_{p,\,End}$ = 3.4*
L_E = length of end area (0.3 x h)
h = formwork height
L = formwork length

*intermediate values are interpolated





Brace Connector

Item no. 023660 (Fig. A6.01)

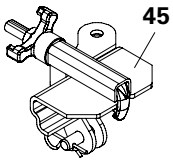


Fig. A6.01

Push-pull props and kickers are attached to the panel with the Brace Connector. Connecting to both horizontal and vertical panel struts is possible.
(Fig. A6.02 + A6.03)

Assembly

1. Attach the Brace Connector (45) to the panel strut so that the Hook Tie is securely fixed in a connecting hole.
2. Tighten Brace Connector by means of a Triple Wingnut.

Horizontal section (Fig. A6.02a)

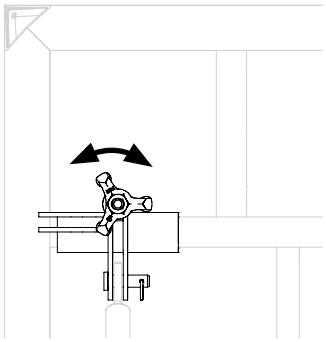


Fig. A6.02

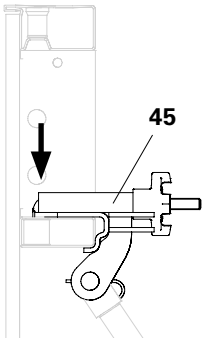


Fig. A6.02a

Vertical section (Fig. A6.03a)

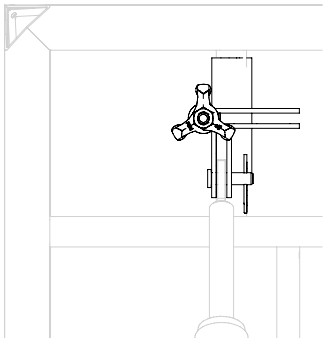


Fig. A6.03

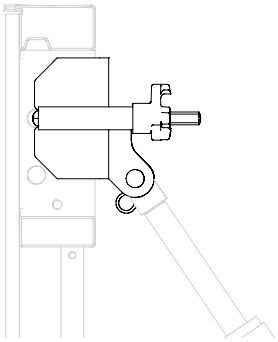


Fig. A6.03a

Push-Pull Props and Kickers

Assembly

1. Fix Push-Pull Prop or Kicker (46) to the connection lugs by means of pins and cotter pins.
   (Fig. A6.04 + A6.04a)
2. Fix Base Plate (47), e.g. with PERI Anchor Bolt 14/20x130.
   (Fig. A6.04b)

When using the PERI Anchor Bolt 14/20x130, take data sheet into consideration!

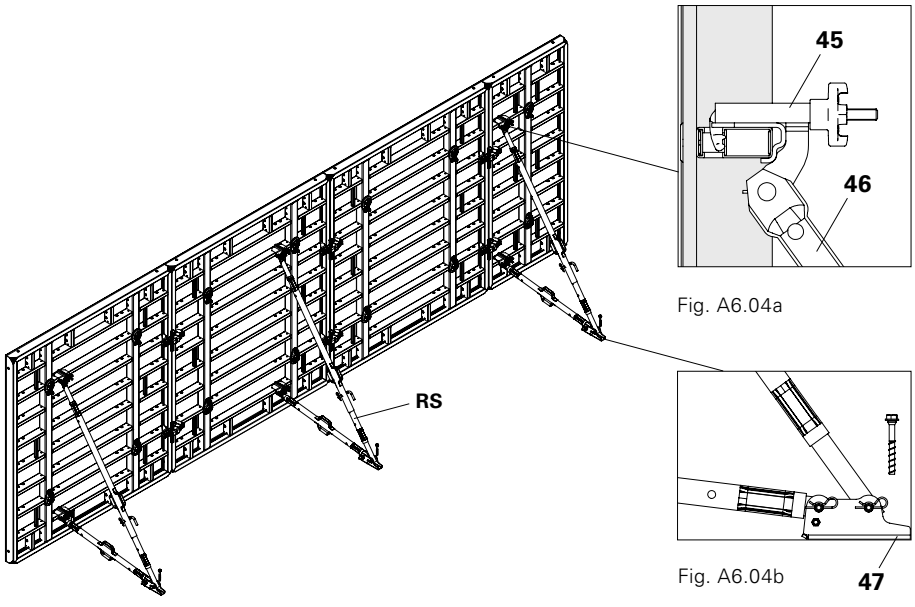


Fig. A6.04a

Fig. A6.04b

Fig. A6.04

Concreting Platform 120/270

Pos.	Component	Item no.
60	Concreting Platform 120/270	022950

Perm. load: 150 kg/m²
Load Class 2 according to
DIN EN 12811-1.

Assembly

1. Fold up guardrails (60.1) and secure with bolts (60.2). (Fig. A7.01)
2. Fold up Suspension Beam (60.3) until it engages.

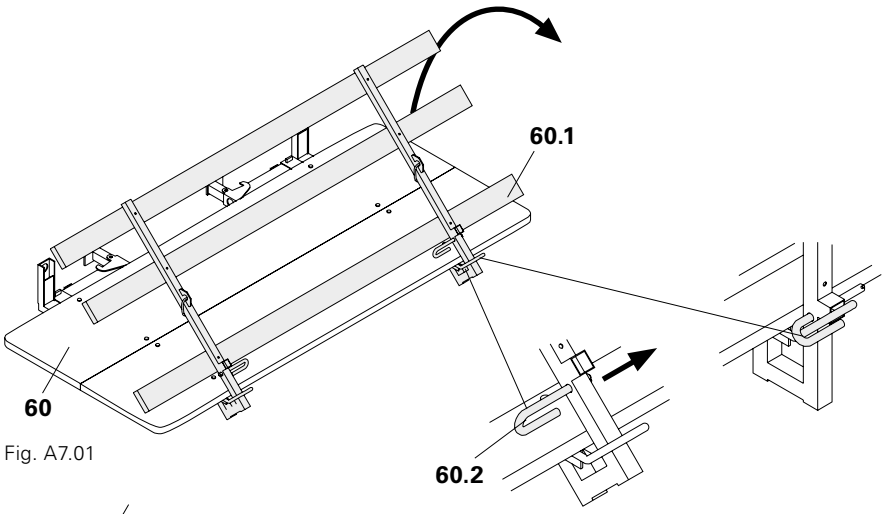


Fig. A7.01

The Sliding Sleeve (60.4) must be in position above.
(Fig. A7.02)

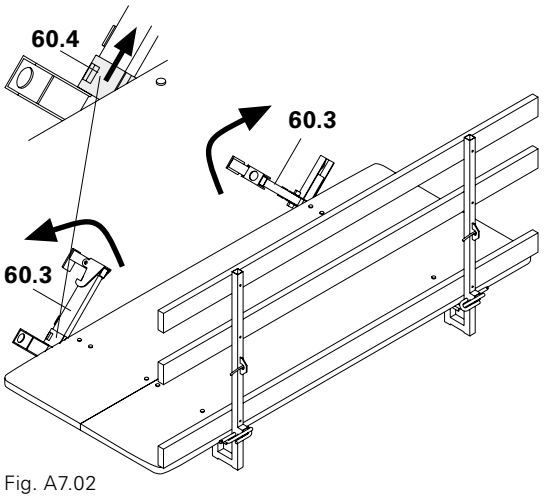
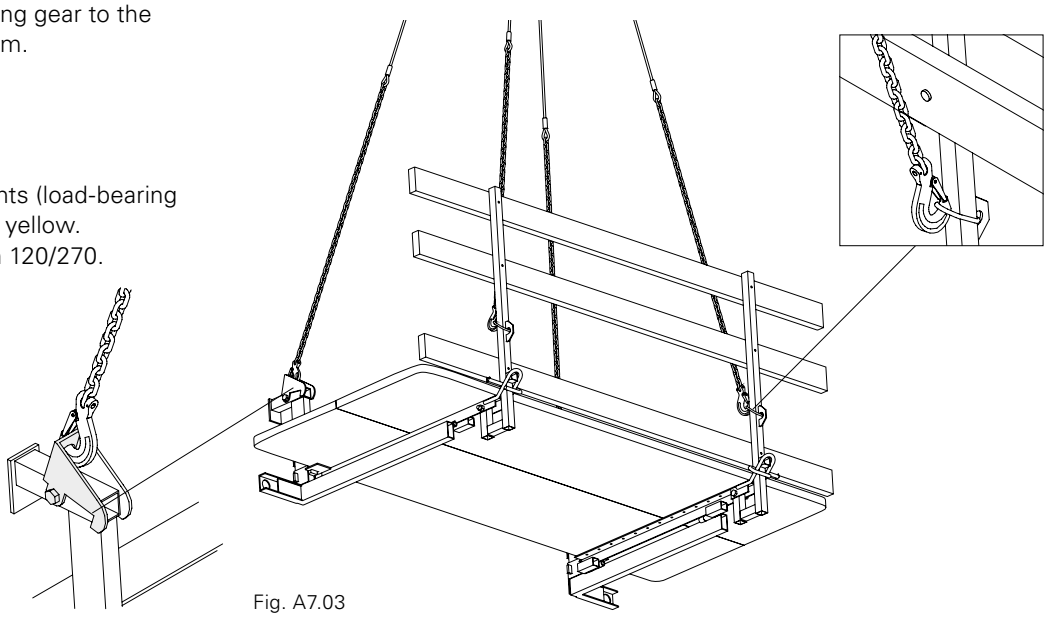


Fig. A7.02

3. Attach 4-sling lifting gear to the concreting platform. (Fig. A7.03)

The suspension points (load-bearing points) are coloured yellow.
Concreting Platform 120/270.


Fig. A7.03

4. Attach concreting platform to the top edge of the formwork by means of the Suspension Beam. Guide from below using guide rope. (Fig. A7.04)

Example: height 2.70 m

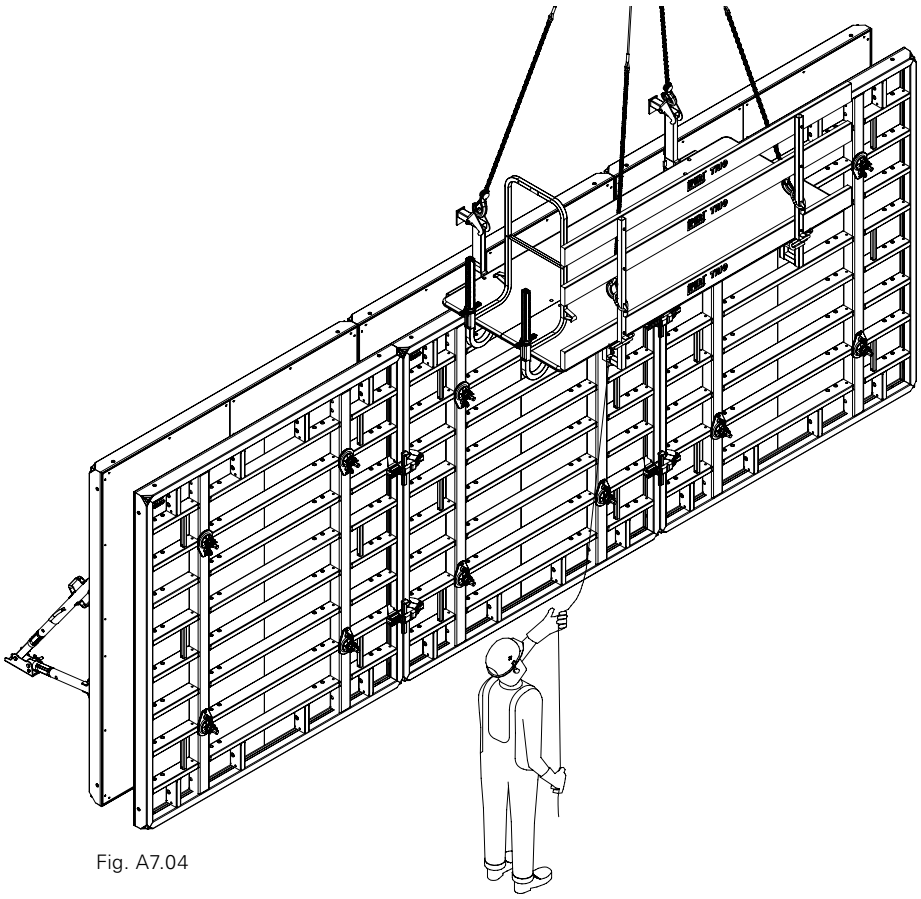


Fig. A7.04

5. Remove 4-sling lifting gear.
   → The Retaining Claw (60.5) grips the frame profile and secures.
(Fig. A7.05)

Visual check is carried out on the Retaining Claw.

6. Attach side protection, e.g. End Guardrail Frame 55.

The concreting platfom must be dismantled during temporary storage of the element.

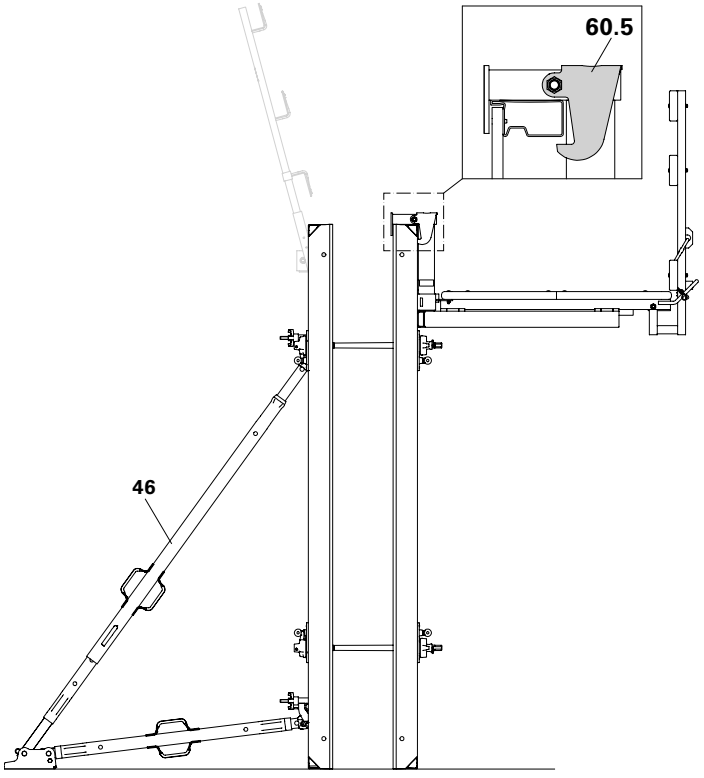


Fig. A7.05

Place guardrail in an inclined position

Place guardrail in an inclined position before moving with the crane!

1. Remove securing pin and cotter pin (60.2).
2. Guardrail frame is placed in an inclined position to the rear, max. 15°.
3. Install securing pins and secure with cotter pins.
   → Guardrail frame is placed in an inclined position.

(Fig. A7.06)

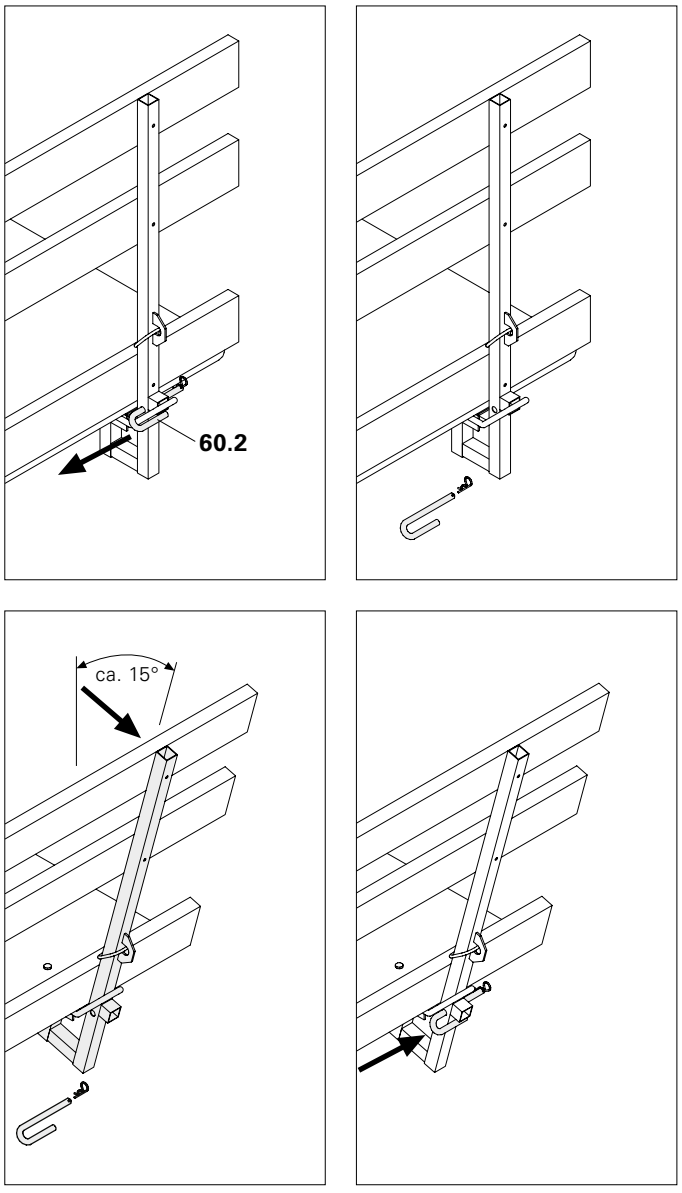


Fig. A7.06

Scaffold Bracket TRG
TRG 80 or TRG 120

Pos.	Component	Item no.
63	Scaffold Bracket TRG 80	023670
64	Scaffold Bracket TRG 120	023680
65	End Guardrail Frame FTF	104018

A concreting scaffold is erected on the formwork by means of the scaffold brackets.
(Fig. A7.07)
Example: height 2.70 m.

Technical data
- Perm. load: 150 kg/m² Load Class 2 according to DIN EN 12811-1.
- Max. width of influence 1.35 m.

- **Secure planking!**
- **Decking components and guard-rails must be securely mounted in position at all times.**

With extended formwork units, the work scaffold is mounted as part of the pre-assembly process.

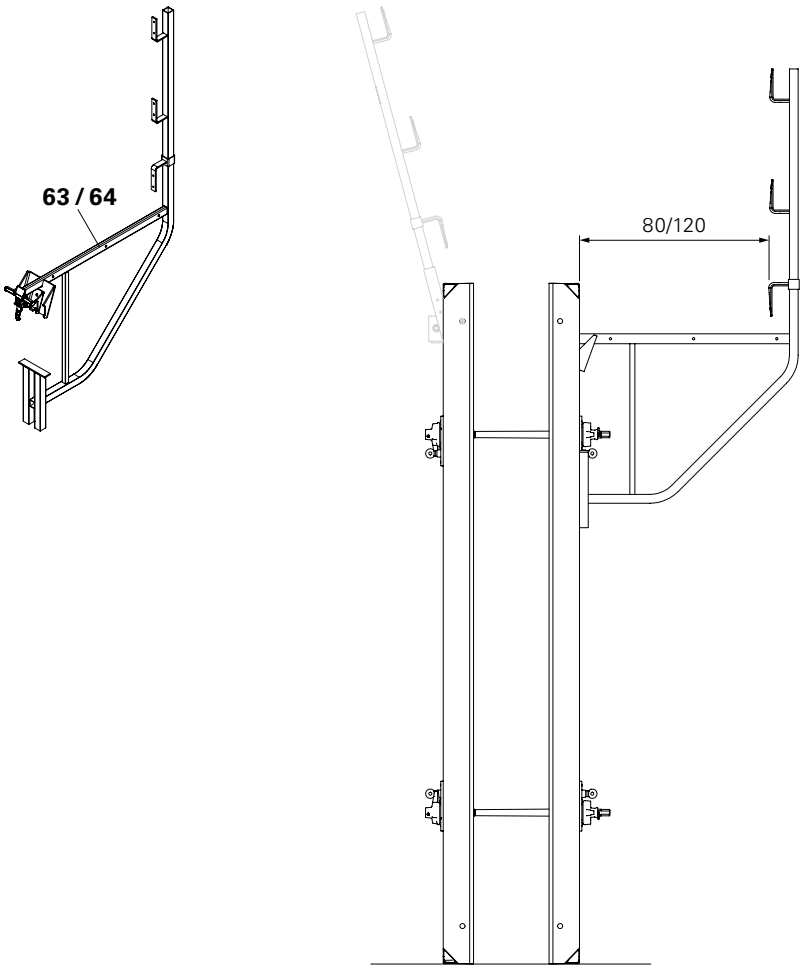


Fig. A7.07

Assembly of the Scaffold Bracket TRG

1. Hook in Scaffold Brackets (63 / 64) into the connecting holes of the panels.It is possible to use both the horizontal and vertical panel struts. (Fig. A7.08)

Visual check of the mounting equipment.

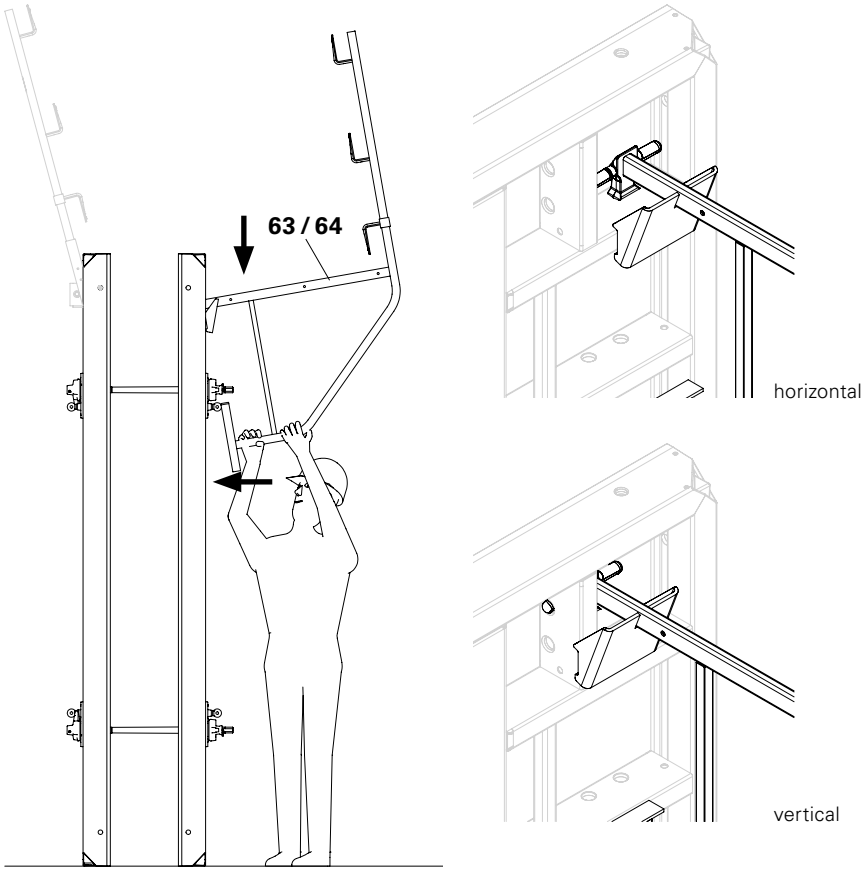


Fig. A7.08

2. Install planking from below over the complete width of the brackets and secure in position.
3. Install guardrails and secure with nails.
4. Attach side protection, e.g. End Guardrail Frame 55 (65). (Fig. A7.09)

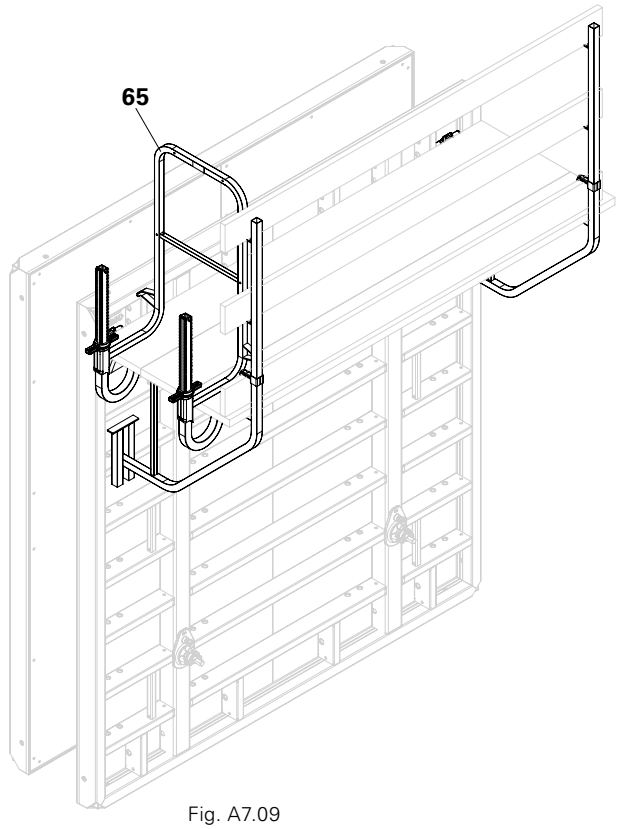


Fig. A7.09

Guardrails

Pos.	Component	Item no.
66	Guardrail Post Holder	101592
67	Guardrail Post HSGP-2	116292

Mount guardrails on the side opposite to the concreting scaffold. (Fig. A7.10)
Assembly is carried out horizontally.
In cases of vertical assembly from a safe position, use a mobile scaffold, for example.

Technical data
Max. width of influence 1.80 m.

Secure boards with nails!

– Assembly is only possible on vertical struts!
– With extended formwork units, the guardrails are mounted as part of the pre-assembly process.

Assembly
1. Hook in Guardrail Post Holder (66) into the connecting holes of the panels.
2. Secure with cotter pins.
3. Insert Guardrail Post HSGP-2 (67).
4. Mount Side Mesh Barrier PMB or install guardrail boards and then secure with nails.
   → Opposing guardrails

(Fig. A7.11)

When erecting, make sure that the guardrails are not damaged by the lifting gear.

Dismantling
Do not lay the formwork unit on the Guardrail Post Holder.

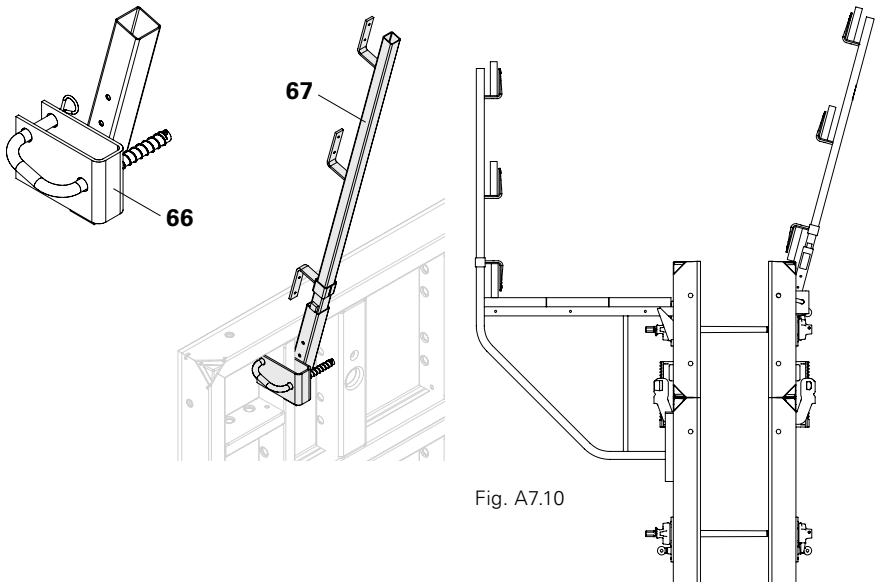


Fig. A7.10

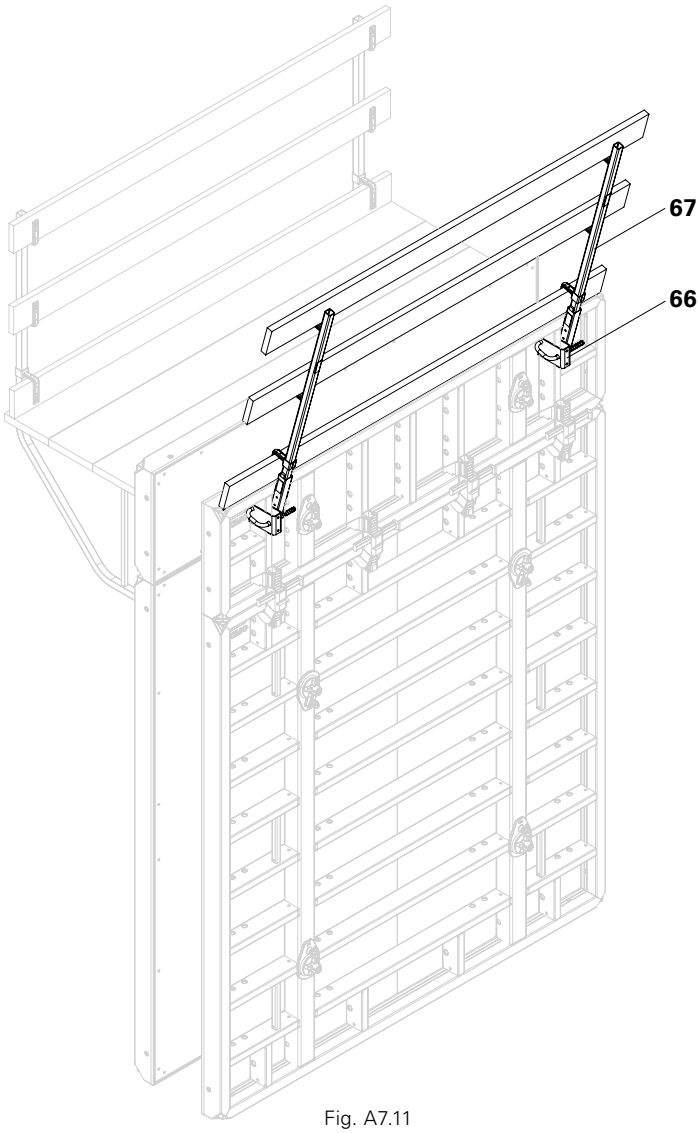


Fig. A7.11

Horizontal downward extension panels up to 2.10 m high

MX 18...30
(Fig. A8.01)

Note: Install 4 BFD Alignment Couplers as panel connections with Downward Extension Panel MX 18...30.
(Fig. A8.01)

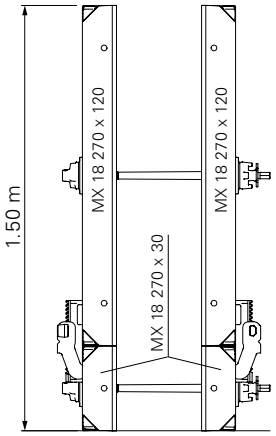


Fig. A8.01

MX 18...60
(Fig. A8.02)

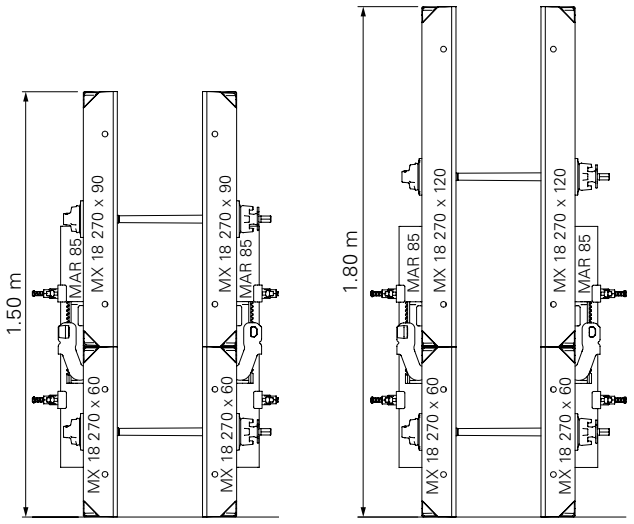


Fig. A8.02

MX 18...90
(Fig. A8.03)

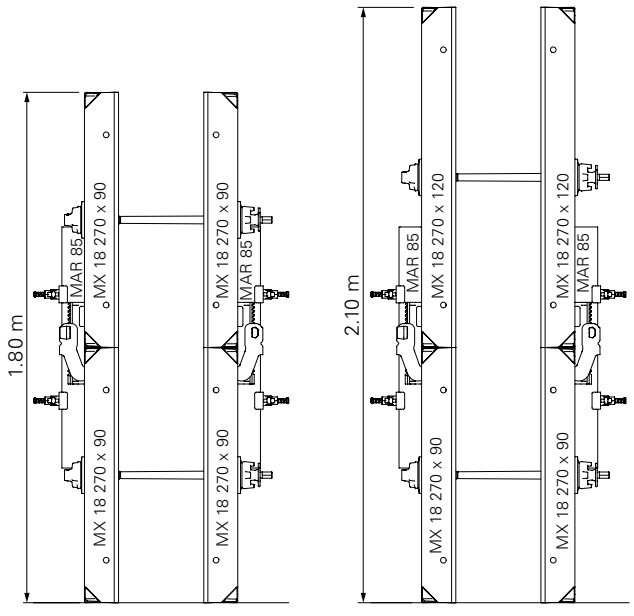


Fig. A8.03

A8 Downward Extensions

Arrangement of the Alignment Coupler BFD and Waler MAR 85.
Example: MX 18...60 und MX 18...90.
(Fig. A8.04)

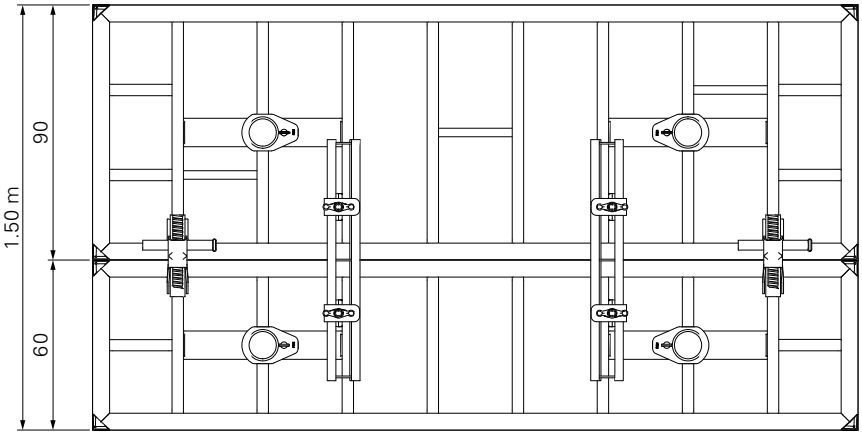


Fig. A8.04

Tension and Compression Brace
MX15-40 and MX15-100

For heights ≤ 1.20 m, e.g. parapets.
Adjust Tension and Compression Brace to:
Setting dimension = wall thickness + 5 mm.

Perm. tension and compression force = 9 kN.

Depending on the wall thickness, the following table shows which Tension and Compression Brace and anchor fastenings can be used.

Wall thickness	Tension and Compression Brace MX 15-40	MX 15-100	Tie MX 18	Tie Rod DW 20*
≤ 40 cm	x	x	x	x
≤ 60 cm	–	x	x	x
≤ 100 cm	–	x	–	x

* Swivel Nut DW 20 (Item no. 115571) is used with the Tie Rod DW 20

Preparation
1. Adjust Mounting Shoe (70.2) of the Tension and Compression Brace to required setting dimension:
   – Remove cotter pin from bolt.
   – Pull bolt out of Spacer Rack.
   – Slide holes of the Mounting Shoe (70.2) and Spacer Rack (70.3) on top of each other according to the setting dimension.
   – Insert bolts through holes.
   – Insert cotter pin into the hole of the bolt.
2. Pivot the securing hook (70.1) of the Tension and Compression Brace upwards. (Fig. A9.01a)
   → Tension and Compression Brace is opened for positioning.

Assembly
1. Place Tension and Compression Brace on the panel in the area of the tie point; at the same time, mount the Mounting Shoe (70.2) in the edge profile of the formwork.
2. Press the securing hook (70.1) downwards over the edge profile and the panel strut of the formwork.
   → Tension and Compression Brace is locked in position.

Wall thickness
≤ 40 cm: MX 15-40 – Fig. A9.01
≤100 cm: MX 15-100 – Fig. A9.02

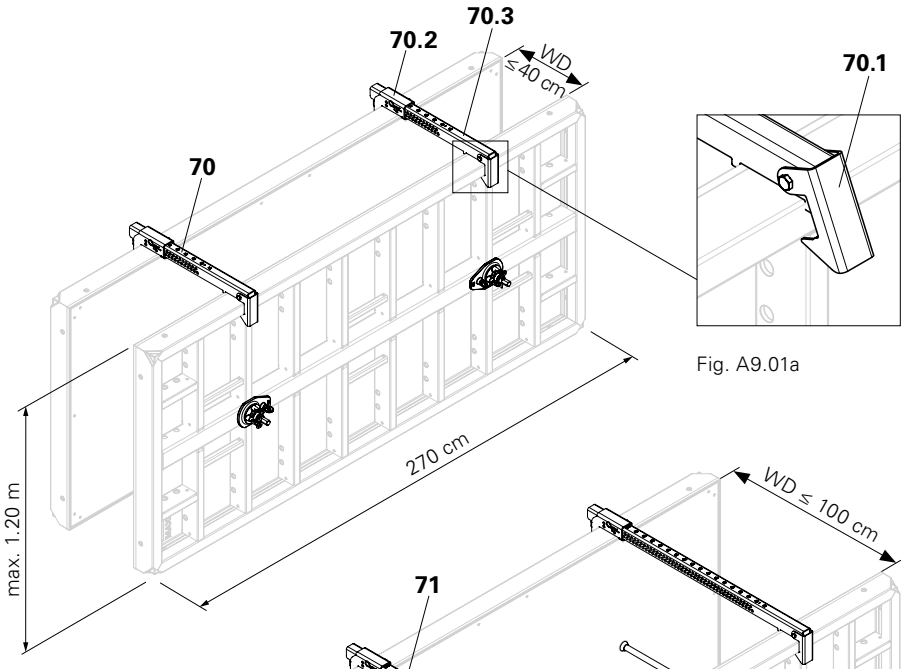


Fig. A9.01a

Fig. A9.01

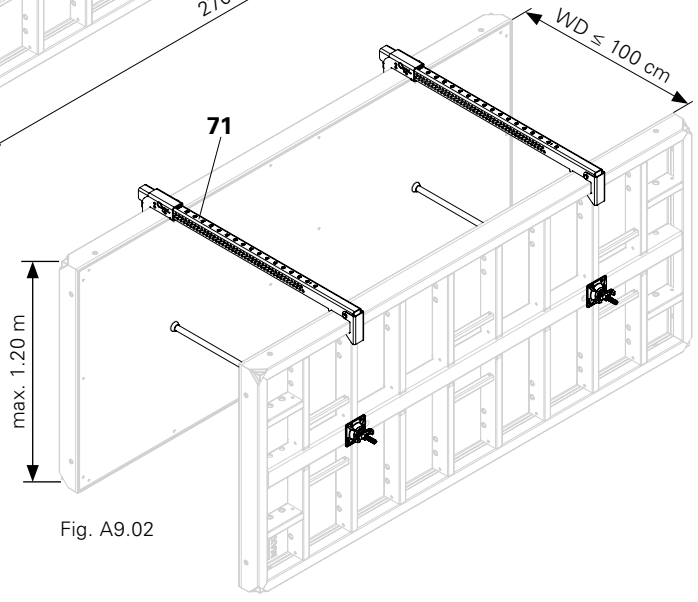


Fig. A9.02

Alternative
Tie System DW 15
1. Mount Tie System DW 15 (54) and Foundation Tie Clamp TRIO (73). (Fig. A9.03)
2. Close all open tie holes on the formlining side with Plugs (74), Item no. 125099.

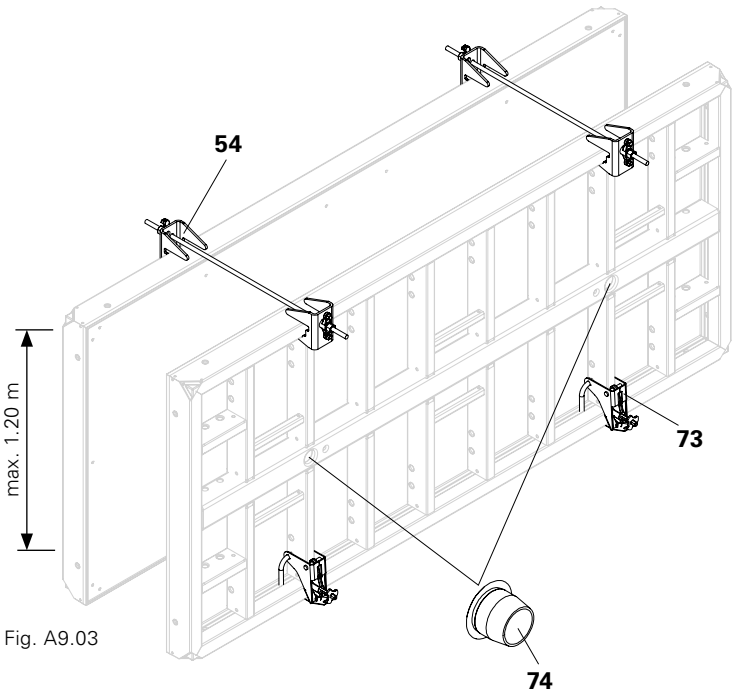


Fig. A9.03

Foundation Strap
Item no. 023800

The Foundation Strap (75) is used for forming individual foundations using the "windmill configuration". (Fig. A9.04)

H [cm]	perm. W [cm]
60	255
90	200

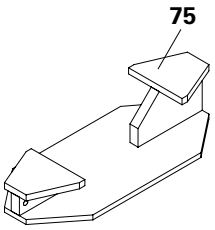


Fig. A9.04

Assembly
1. Secure limiting board (76) on the formlining with nails – at a distance perm. W + 12 cm.
2. Place Foundation Strap at the butt point on the panel.
3. Slide Foundation Strap as far as possible on the offset panel.
4. Upper web rests against the panel.
5. Install Foundation Strap at top and bottom (8x in total).

(Fig. A9.05 + A9.05a)

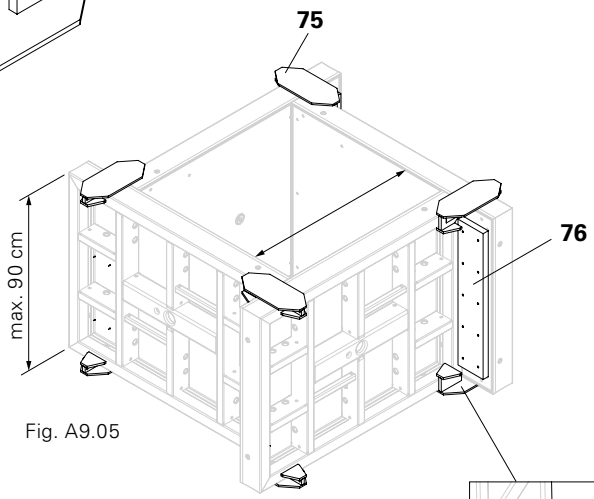


Fig. A9.05

The Foundation Strap must rest against the panel.

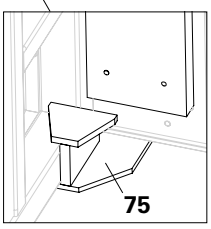


Fig. A9.05a

A10 Height Offsets
A11 Wall Connections

Height Offsets

With height offsets – and depending on the offset – the Alignment Couplers BFD are installed alternatively on the panel struts of the right and left panels. (Fig. A10.01)

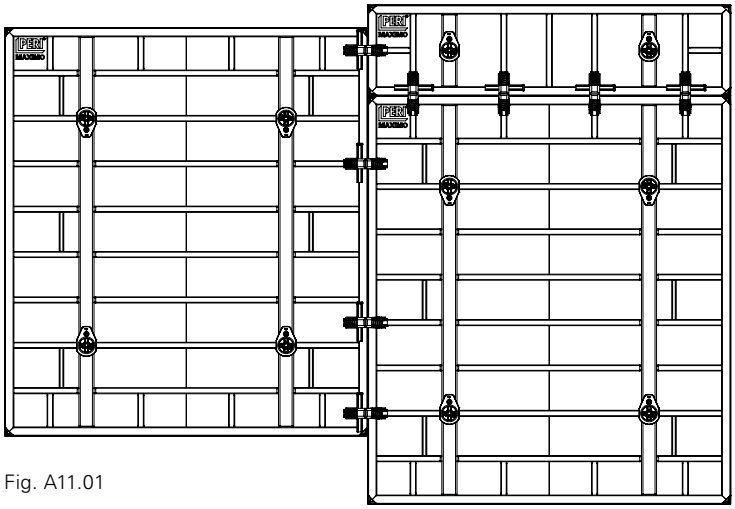


Fig. A11.01

Obtuse Wall Connection

With MX 18 270 x 240 large panel (Fig. A11.01a)

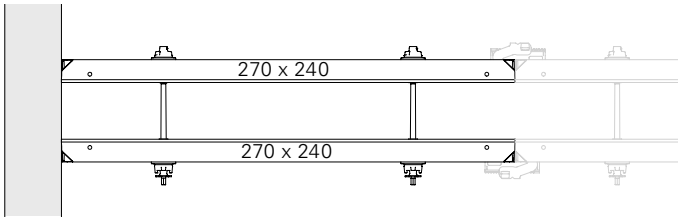


Fig. A11.01a

With Panel MX 18...x ≥ 60 (Fig. A11.01b)

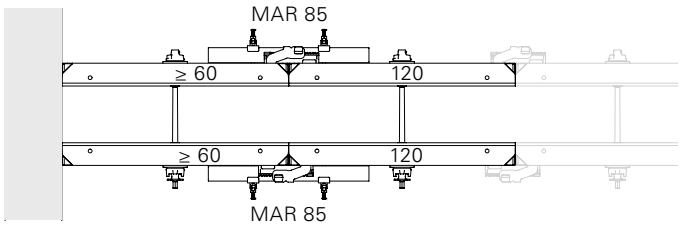


Fig. A11.01b

With Panel MX 18...x ≤ 60 (Fig. A11.01c)

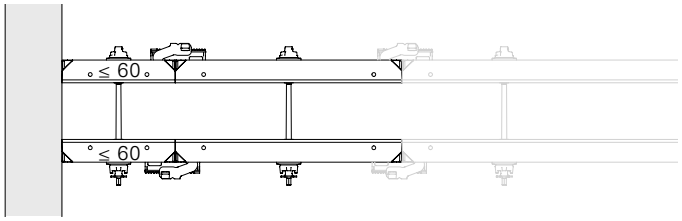


Fig. A11.01c

A11 Wall Connections

With vertical and horizontal wall connections, the MX Tie must be tightly installed towards the wall connection in the specified order!

Vertical Wall Connection

(Fig. A11.02)

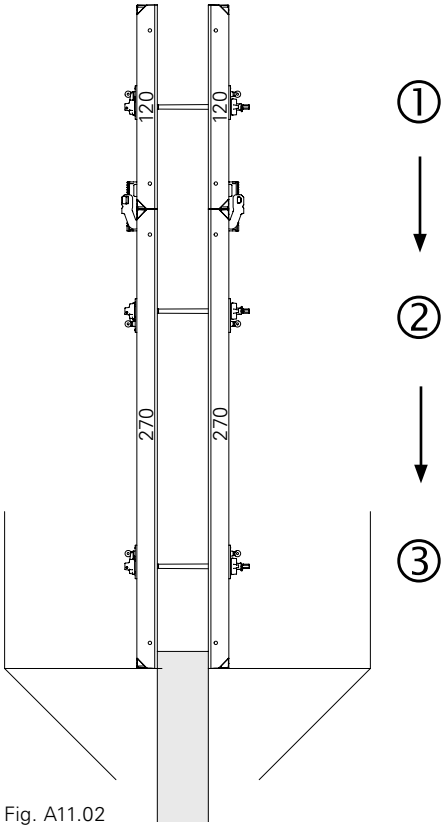


Fig. A11.02

Horizontal Wall Connection

Plan view (Fig. A11.03a + A11.03b)

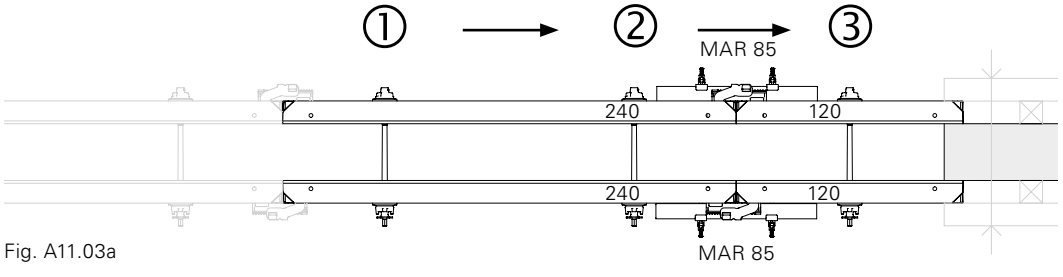


Fig. A11.03a

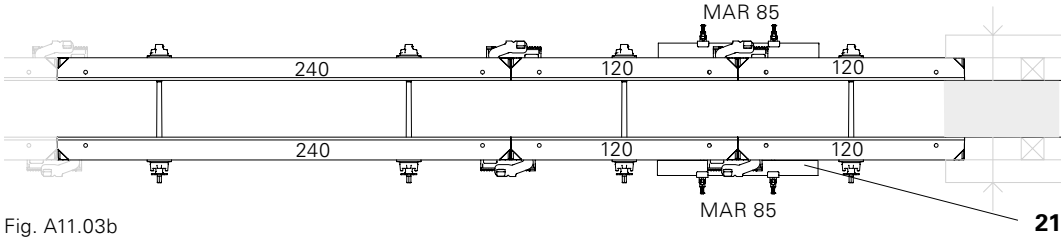


Fig. A11.03b

Horizontal Wall connection

Section (Fig. A11.03c)

Waler MAR 85 (21) installed below.

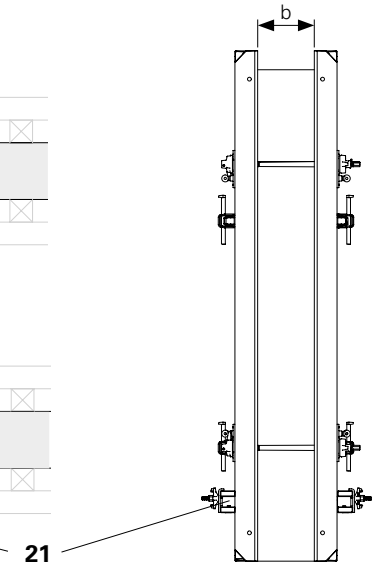


Fig. A11.03c

On the first panel joint, a Compensation Waler MAR 85 (21) must always be mounted in the bottom area. Exception: Panel b > 120 cm.

B1 90° Corners with Inside Corner MXI 18, 270 x 50/20

Wall Thicknesses 15 – 40 cm

Outside Corner MXA 270 x 45

Perm. fresh concrete pressure: 80 kN/m²

Components

20	Alignment Coupler BFD
100	Panel MXM 18, 270 x 60
101	Panel MX 18, 270 x 30
102	Panel MX 18, 270 x 45
106	Panel MX 18, 270 x 240
140	Wall Thickness Compensator WDA MX 270 or filler timber supplied by contractor ≤10 cm
151	Outside Corner MXA 270 x 45
153	Inside Corner MXI 18, 270 x 50/20

Examples
- Wall thickness 15: Fig. B1.01 + B1.05a + B1.05b
- Wall thickness 17.5: Fig. B1.02 + B1.05a + B1.05b
- Wall thickness 20: Fig. B1.03 + B1.05a + B1.05b
- Wall thickness 24 / 25: Fig. B1.04 + B1.05a + B1.05b
- Wall thickness 30: Fig. B1.05 + B1.05a + B1.05b
- Wall thickness 35 / 36: Fig. B1.06 + B1.05a + B1.05b
- Wall thickness 40: Fig. B1.07 + B1.05a + B1.05b

Compensations
- Wall thickness 25 + 36 + 40 cm: without compensation
- Wall thickness 15 + 17.5 cm: internal and external compensation
- Wall thickness 20 + 24 cm: internal compensation
- Wall thickness 30 + 35 cm: external compensation

90° Corners with Inside Corner MXI 18, ... x 60, see D2.

Alternatively – panel width 45
Max. panel width between corner and subsequent panel is 45 cm – MX 18, 270 x 45 (102). (Fig. B1.08)

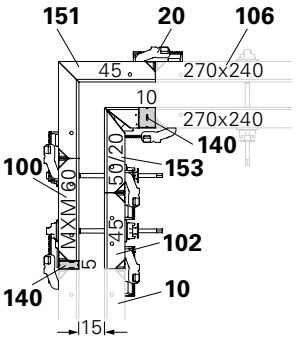


Fig. B1.01

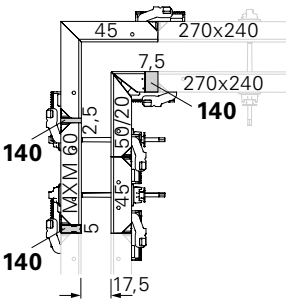


Fig. B1.02

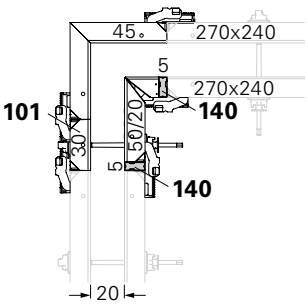


Fig. B1.03

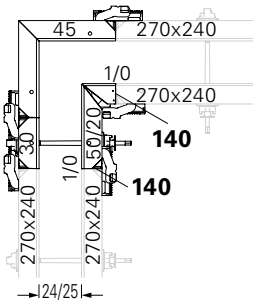


Fig. B1.04

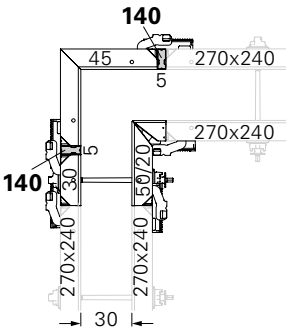


Fig. B1.05

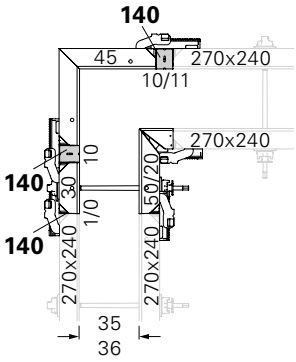


Fig. B1.06

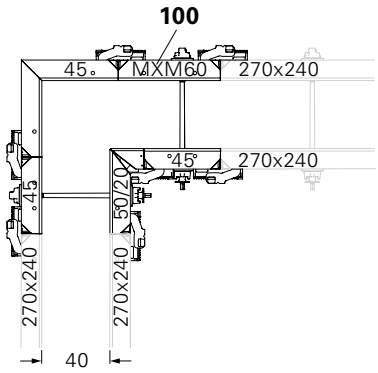


Fig. B1.07

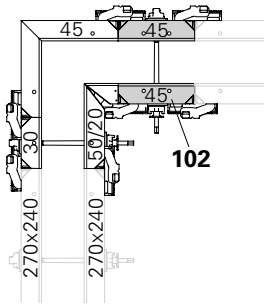


Fig. B1.08

B1 90° Corners with Inside Corner MXI 18, 270 x 50/20

Arrangement of the Alignment Couplers

Valid for wall thicknesses 15 – 40 cm.

Inside Corner

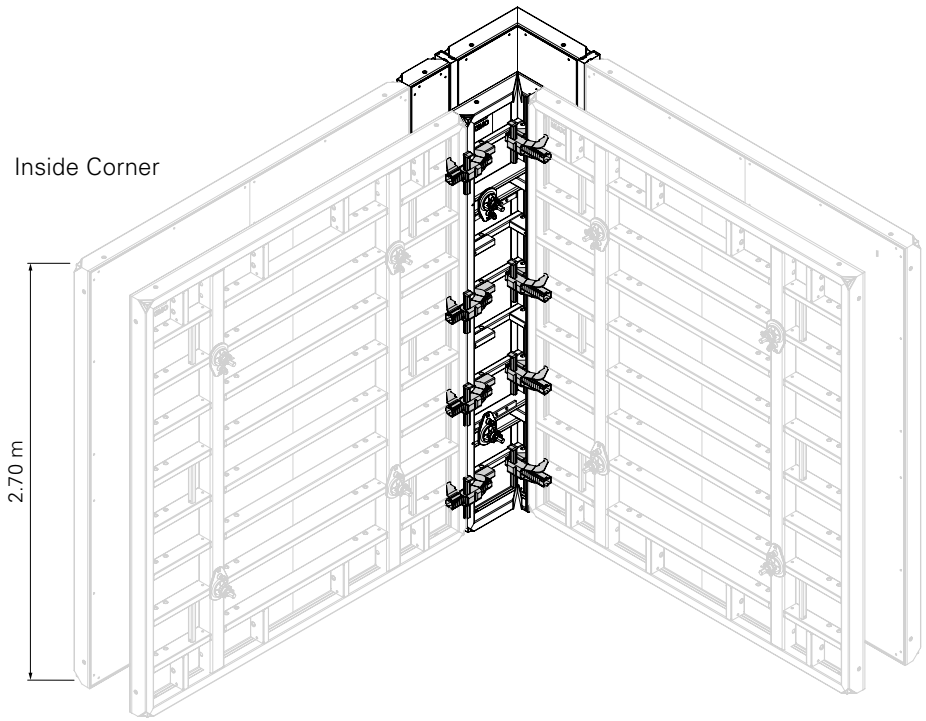


Fig. B1.05a

Outside Corner

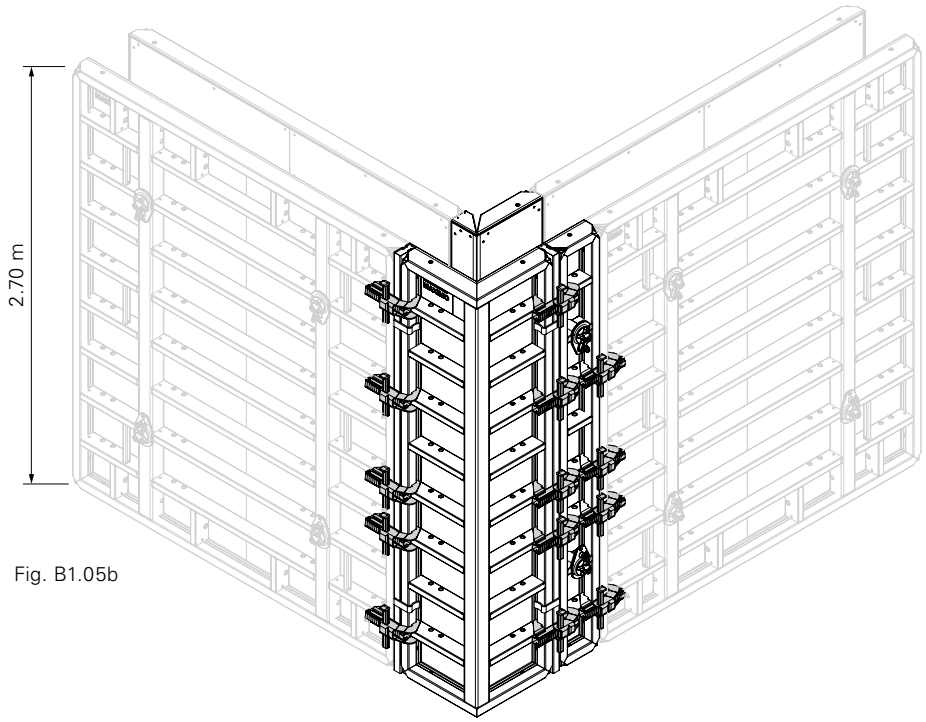


Fig. B1.05b

B1 90° Corners with Inside Corner MXI 18, 270 x 50/20

Wall Thicknesses > 40 – 60 cm

Outside Corner MXA 270 x 45

Perm. fresh concrete pressure: 60 kN/m²

Components

10	Panel MX 18, 270 x 240
20	Alignment Coupler BFD
21	Compensation Waler MAR 85/3
22	Compensation Waler MAR 170/3
100	Panel MXM 18, 270 x 60
101	Panel MX 18, 270 x 30
102	Panel MX 18, 270 x 45
140	Wall Thickness Compensator WDA MX 270 or filler timber supplied by contractor ≤ 10 cm
151	Outside Corner MXA 270 x 45
153	Inside Corner MXI 18, 270 x 50/20

Examples
- Wall thickness 45:
  Fig. B1.09 + B1.09a + B1.09b
- Wall thickness 50:
  Fig. B1.10 + B1.09a + B1.09b
- Wall thickness 55:
  Fig. B1.11 + B1.11a + B1.11b
- Wall thickness 60:
  Fig. B1.12 + B1.11a + B1.11b

Compensations
- Wall thickness 45 + 50 + 60 cm:
  External compensation
- Wall thickness 55 cm:
  without compensation

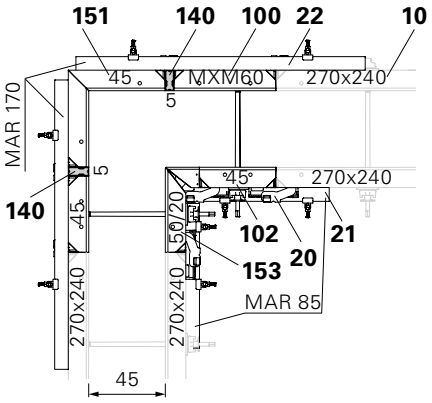


Fig. B1.09

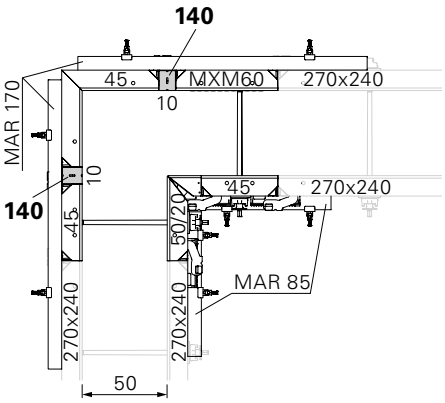


Fig. B1.10

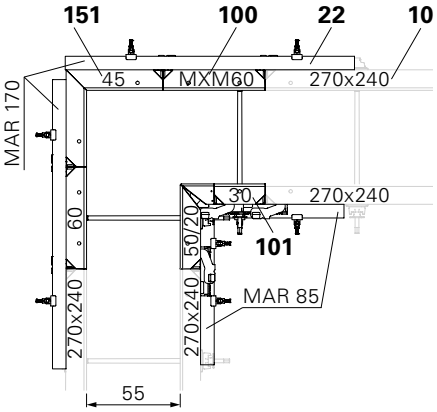


Fig. B1.11

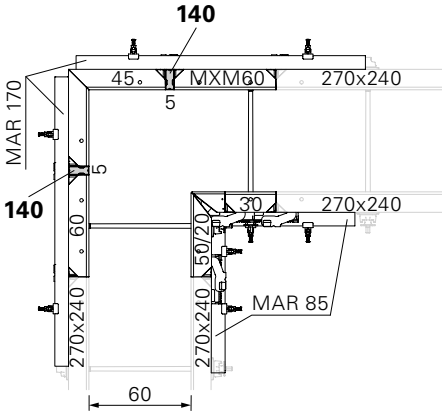


Fig. B1.12

Offset mounting of BFD Alignment Couplers between
- Corner 50/20,
- Panel ... x 30,
- as well as the next Panel ... x 240.

„X"
of Fig. B1.11a

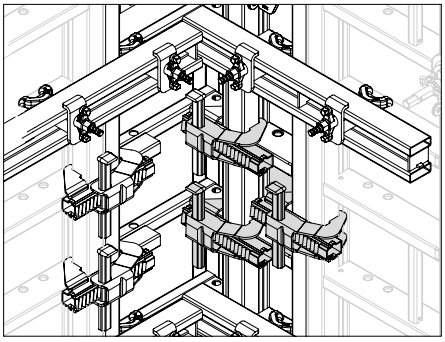


Fig. B1.11c

B1 90° Corners with Inside Corner MXI 18, 270 x 50/20

Arrangement of the Alignment Couplers and Compensation Walers

Valid for wall thicknesses > 40 – 50 cm.
(Fig. B1.09a + B1.09b)

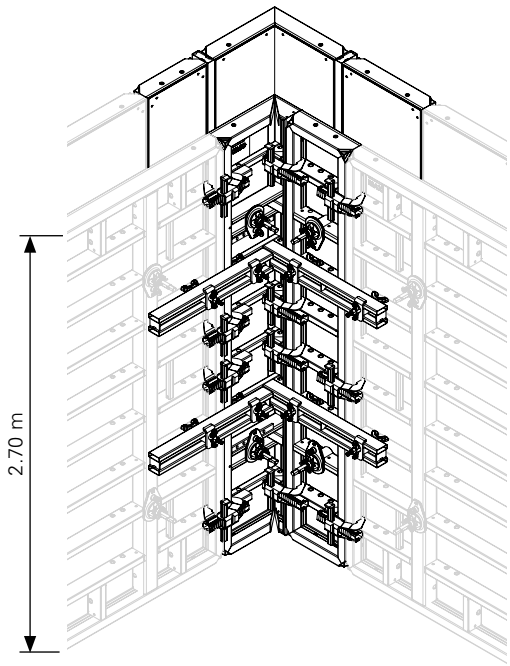


Fig. B1.09a

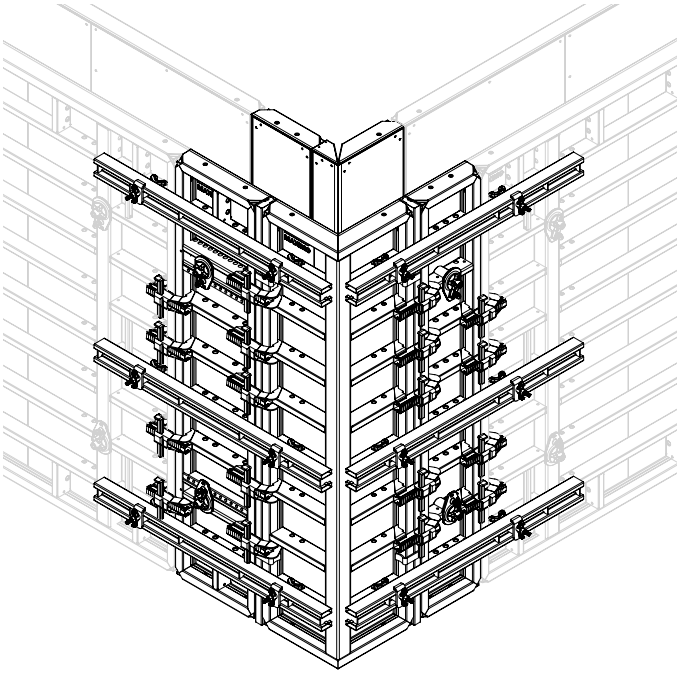


Fig. B1.09b

Valid for wall thicknesses > 50 – 60 cm **„X“**
(Fig. B1.11a + B1.11b) see Fig. B1.11c

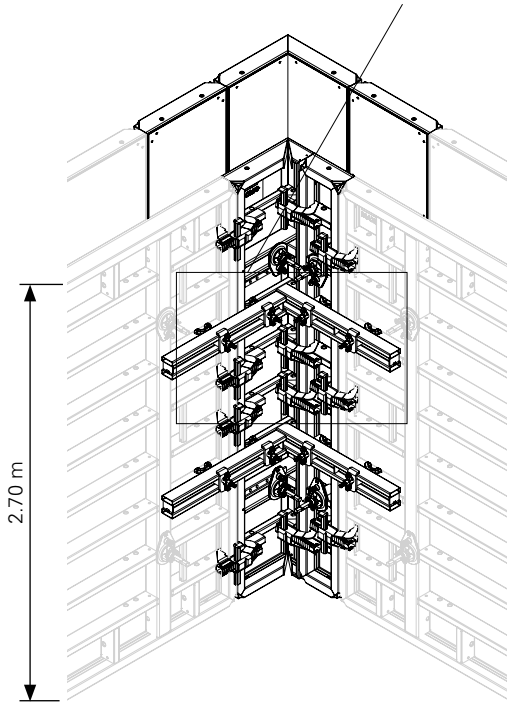


Fig. B1.11a

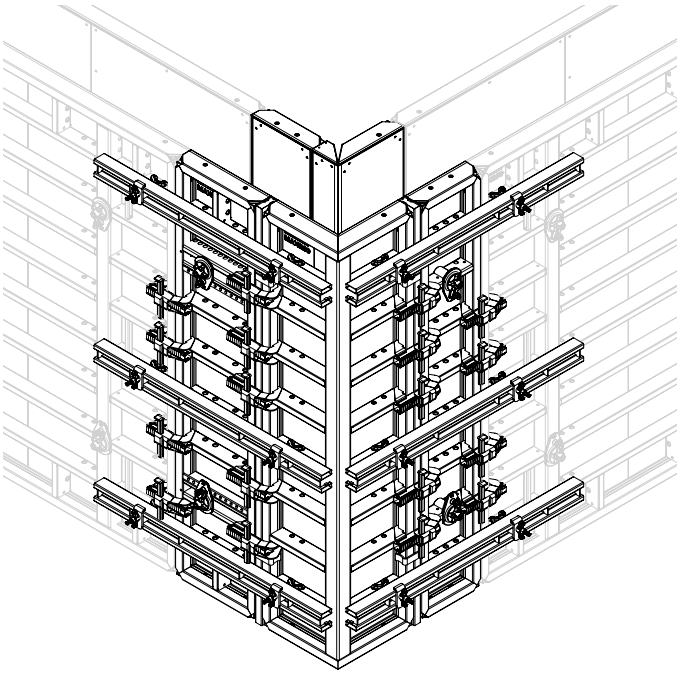


Fig. B1.11b

B2 Panel Connections following 90° Corners

Panel connections
For panels with widths b ≤ 120 following 90° corners, these must be strengthened at the next panel joint by means of a Compensation Waler MAR 85 (21).

With extensions, a second Compensation Waler MAR 85 is required on the panel joint (shown as a dotted line). (Fig. B2.01 + B2.01a + B2.01b)

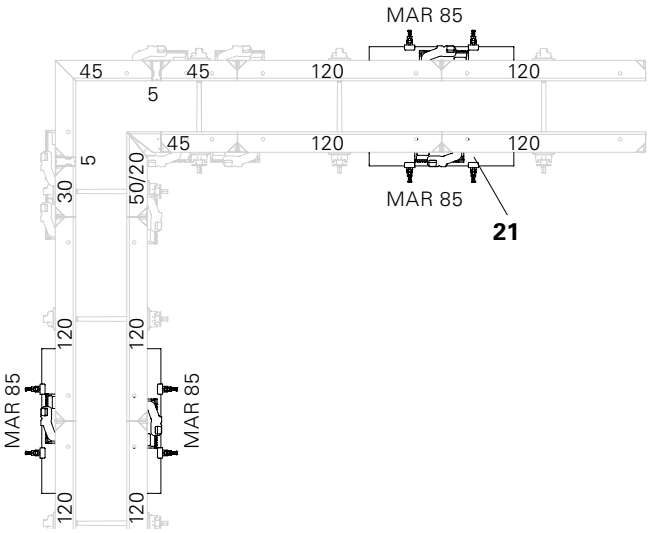


Fig. B2.01

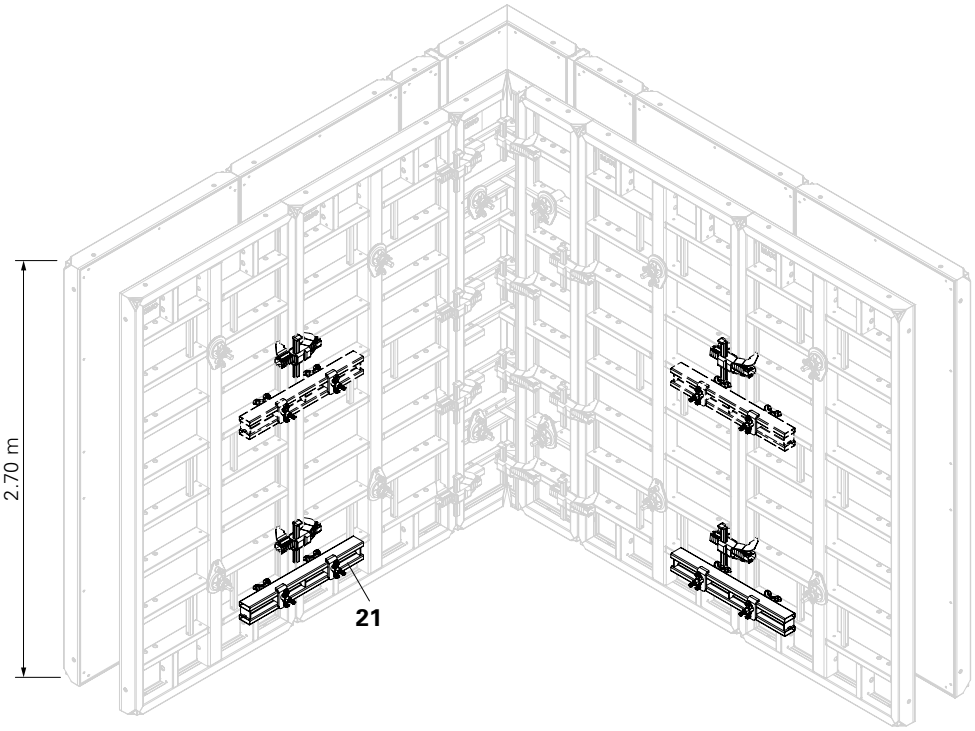


Fig. B2.01a

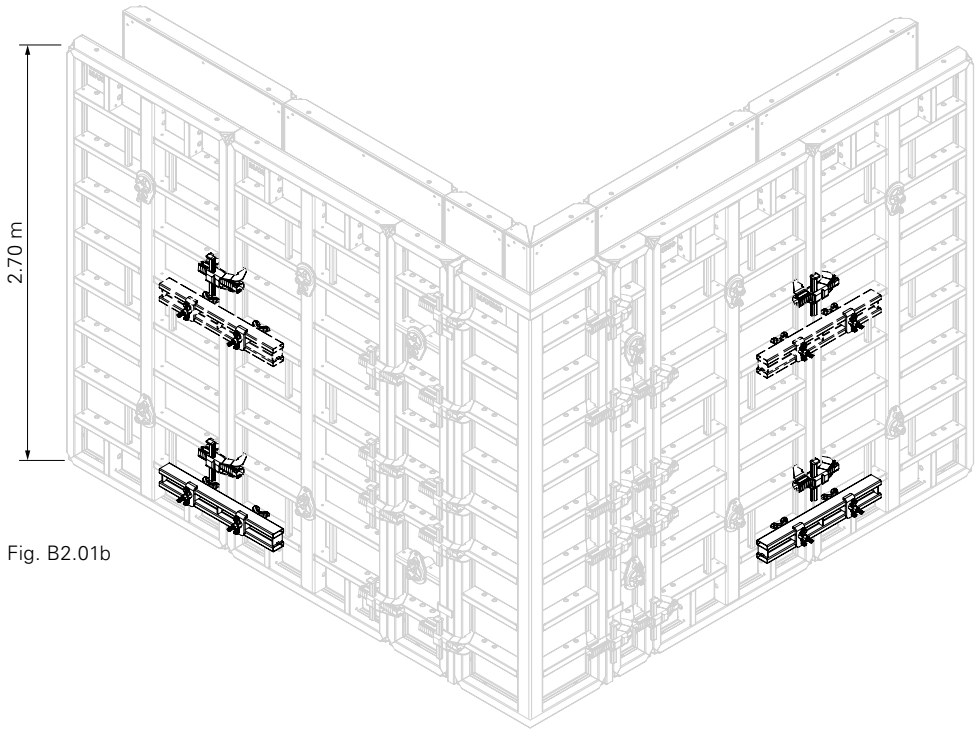


Fig. B2.01b

B3 90° T-junctions with Inside Corner MXI 18, 270 x 50/20

Wall Thicknesses 15 – 40 cm

Perm. fresh concrete pressure: 80 kN/m²

Components

10	Panel MX 18, 270 x 240
20	Alignment Coupler BFD
100	Panel MXM 18, 270 x 60
102	Panel MX 18, 270 x 45
103	Panel MX 18, 270 x 60
140	Wall Thickness Compensator WDA MX 270 or filler timber supplied by contractor ≤ 10 cm
153	Inside Corner MXI 18, 270 x 50/20

Assembly

1. Form the T-junction with Inside Corner MXI 18, 50/20 (153).
2. Form the opposite straight wall with Panels MX 18, 45 (102), MX 18, 60 (103), or MXM 60 (100) – according to the wall thickness.
3. Install compensation (140) according to the wall thickness.

Examples

– Wall thickness 15:
Fig. B3.01 + B3.05a + B3.05b
– Wall thickness 17.5:
Fig. B3.02 + B3.05a + B3.05b
– Wall thickness 20:
Fig. B3.03 + B3.05a + B3.05b
– Wall thickness 24/25:
Fig. B3.04 + B3.05a + B3.05b
– Wall thickness 30:
Fig. B3.05 + B3.05a + B3.05b
– Wall thickness 35/36:
Fig. B3.06 + B3.05a + B3.05b
– Wall thickness 40:
Fig. B3.07 + B3.05a + B3.05b

Compensations

– Wall thickness 15 + 17.5 + 24 + 25 + 30 + 35 + 36 + 40 cm:
external compensation
– Wall thickness 20:
without compensation

90° T-junctions with Inside Corners MXI 18, ... x 60, see D3.

Alternatively – panel width 45

Max. panel width at the T-junction between corner and subsequent panel is 45 cm – MX 18, 270 x 45 (102). (Fig. B3.08)

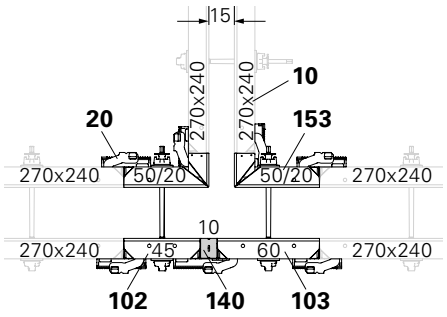


Fig. B3.01

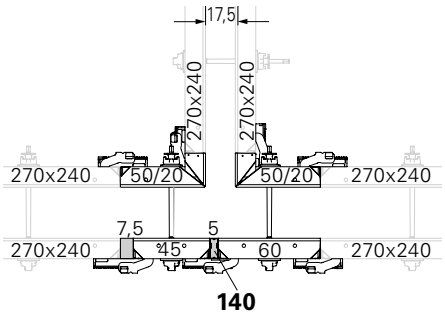


Fig. B3.02

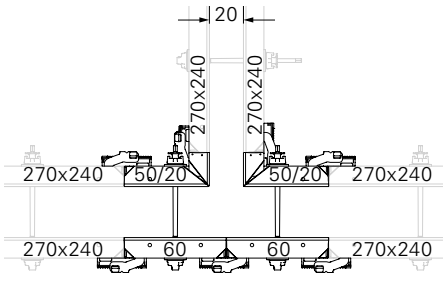


Fig. B3.03

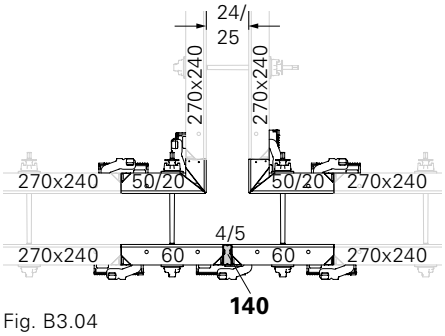


Fig. B3.04

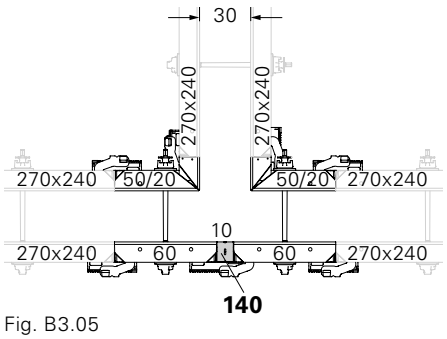


Fig. B3.05

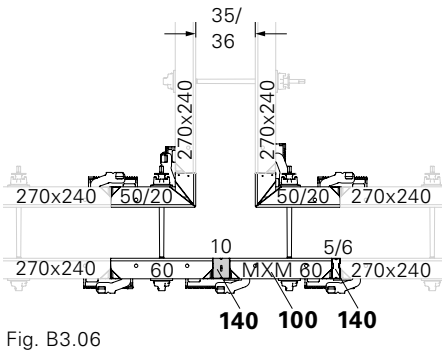


Fig. B3.06

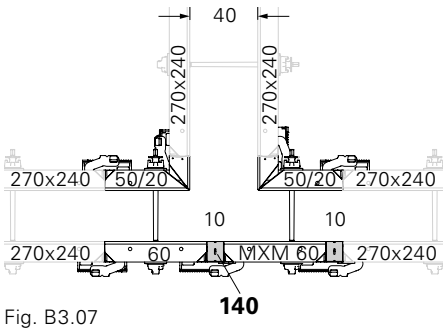


Fig. B3.07

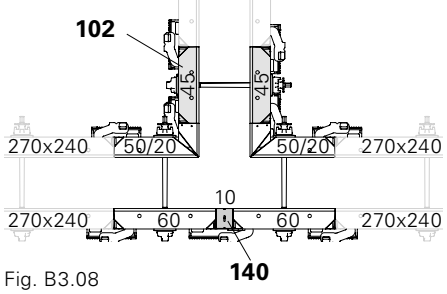


Fig. B3.08

B3 90° T-junctions with Inside Corner MXI 18, 270 x 50/20

Arrangement of the Alignment Couplers

Valid for wall thicknesses 15 – 40 cm.
(Fig. B3.05a + B3.05b)

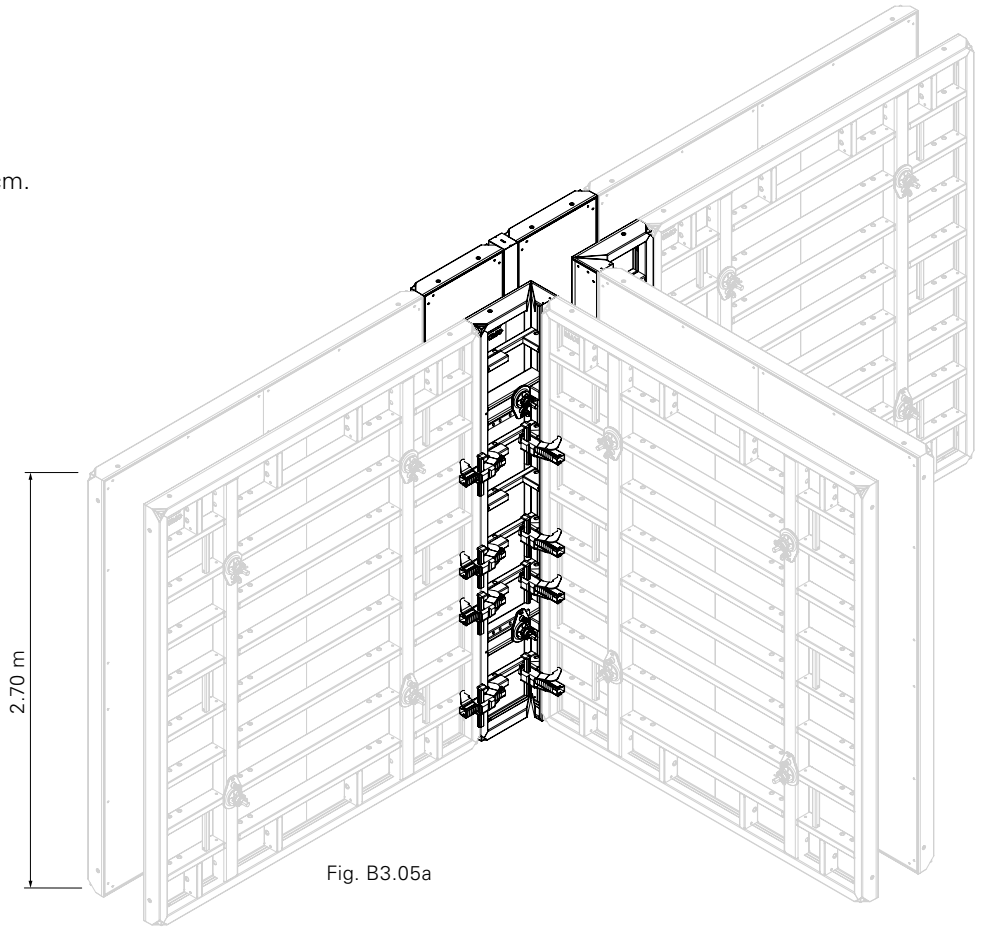


Fig. B3.05a

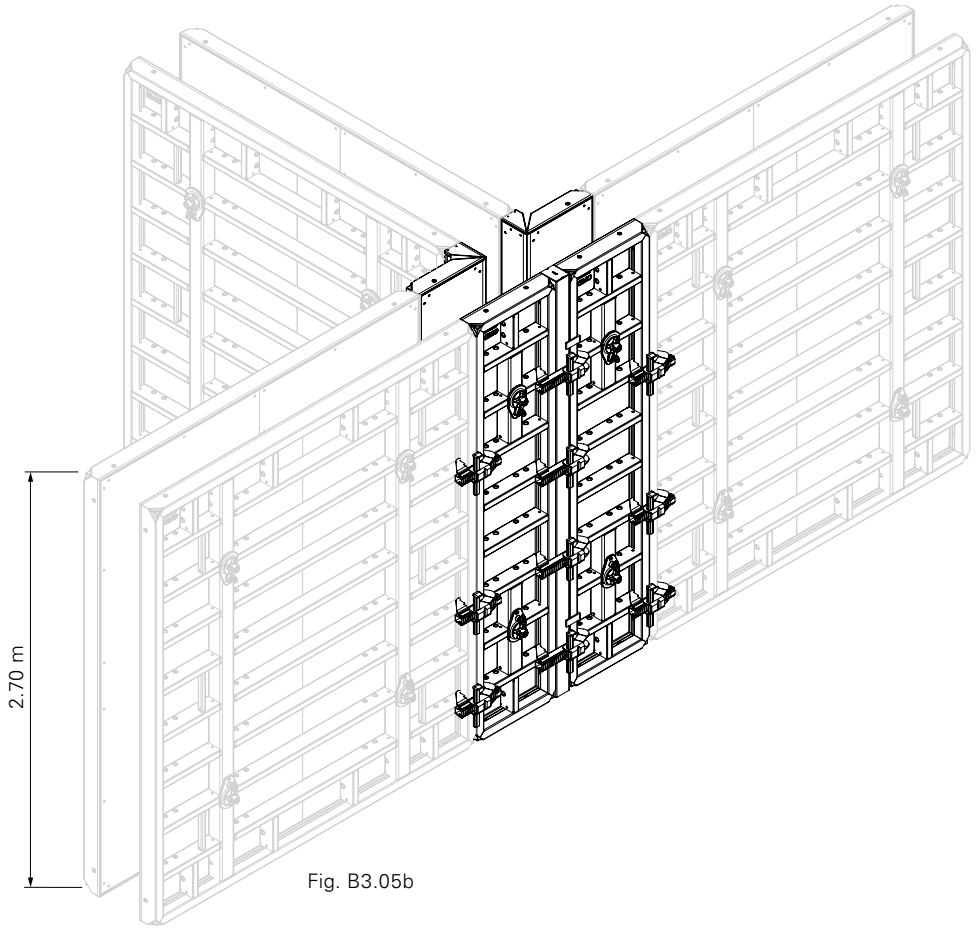


Fig. B3.05b

B3 90° T-junctions with Inside Corner MXI 18, 270 x 50/20

Wall thicknesses > 40 – 60 cm

Perm. fresh concrete pressure: 60 kN/m²

Components

10	Panel MX 18, 270 x 240
20	Alignment Coupler BFD
22	Compensation Waler MAR 170-3
102	Panel MX 18, 270 x 45
103	Panel MX 18, 270 x 60
140	Wall Thickness Compensator WDA MX 270 or filler timber supplied by contractor ≤ 10 cm
153	Inside Corner MXI 18, 270 x 50/20

Assembly

1. Form the T-junction with Inside Corner MXI 50/20 (153).
   Form the opposite straight wall with Panels MX 18, 45 (102) or MX 18, 60 (103) – according to the wall thickness.
2. Install compensation (140) according to the wall thickness.
3. On the straight wall, install Compensation Waler MAR 170 (22) centrally to the outgoing wall.

Examples

– Wall thickness 45:
  Fig. B3.09 + B3.09a + B3.09b
– Wall thickness 50:
  Fig. B3.10 + B3.09a + B3.09b
– Wall thickness 55:
  Fig. B3.11 + B3.09a + B3.09b
– Wall thickness 60:
  Fig. B3.12 + B3.09a + B3.09b

Compensations

– Wall thickness 45 + 55 + 60 cm:
  external compensation
– Wall thickness 50:
  without compensation

90° T-junctions with Inside Corner MXI 18, ... x 60, see Section D3.

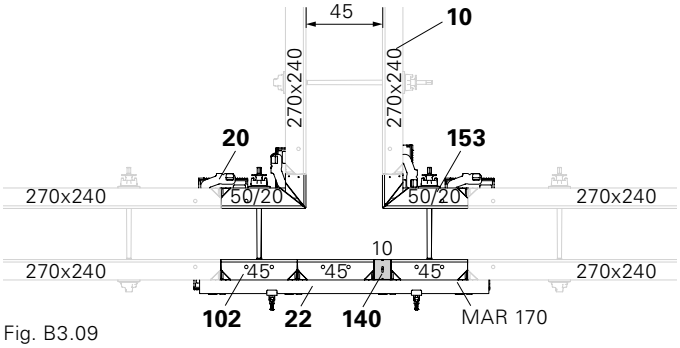


Fig. B3.09

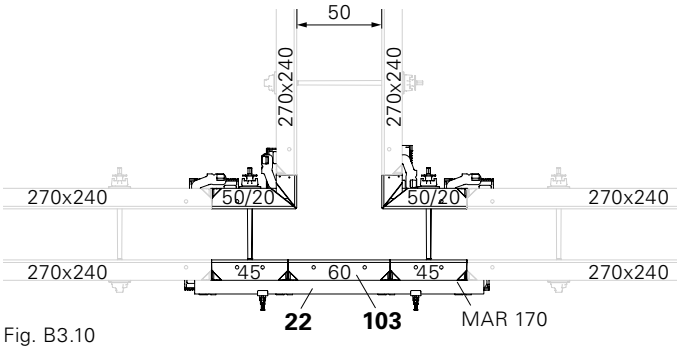


Fig. B3.10

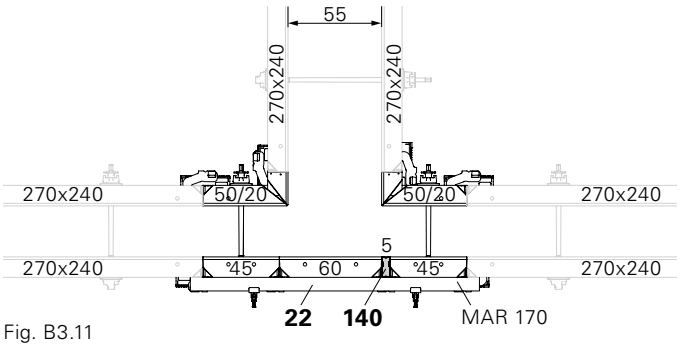


Fig. B3.11

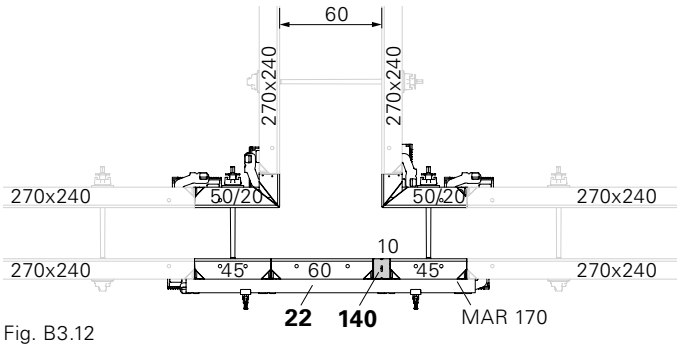


Fig. B3.12

B3 90° T-junctions with Inside Corner MXI 18, 270 x 50/20

Arrangement of the Alignment Couplers and Compensation Walers

Valid for wall thicknesses 45 – 60 cm.
(Fig. B3.09a + B3.09b)

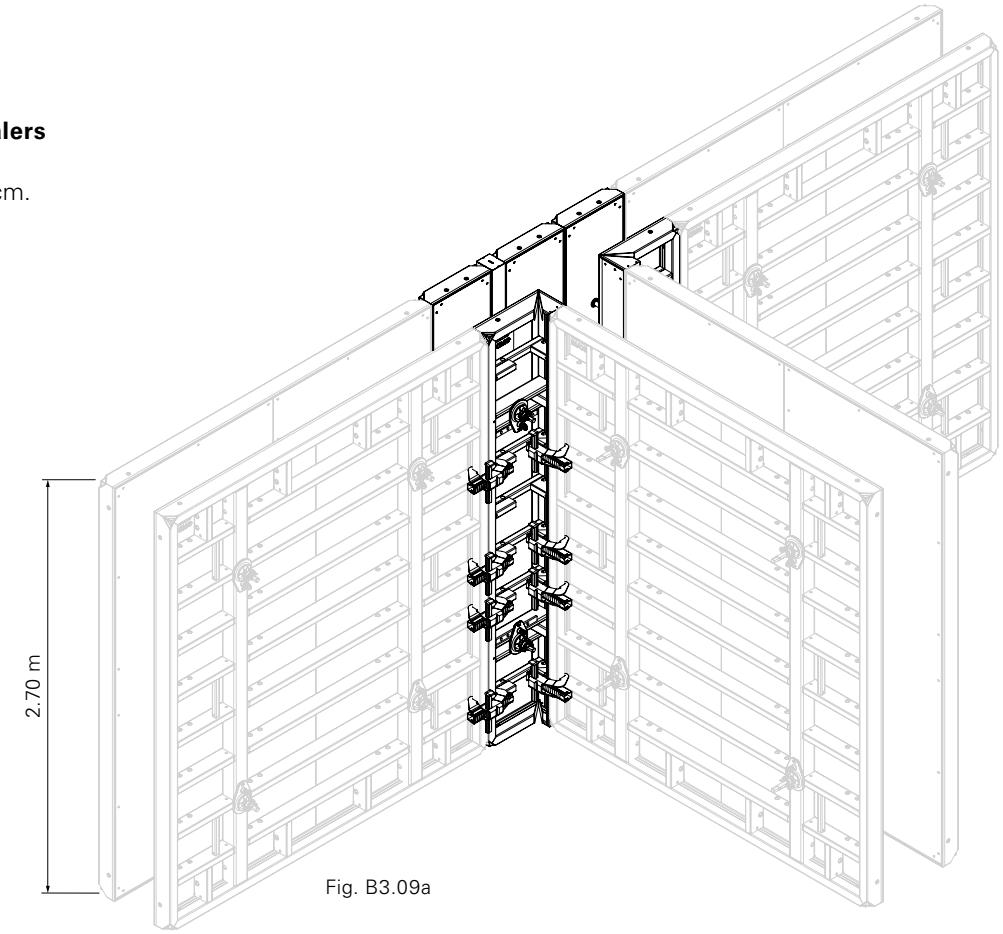


Fig. B3.09a

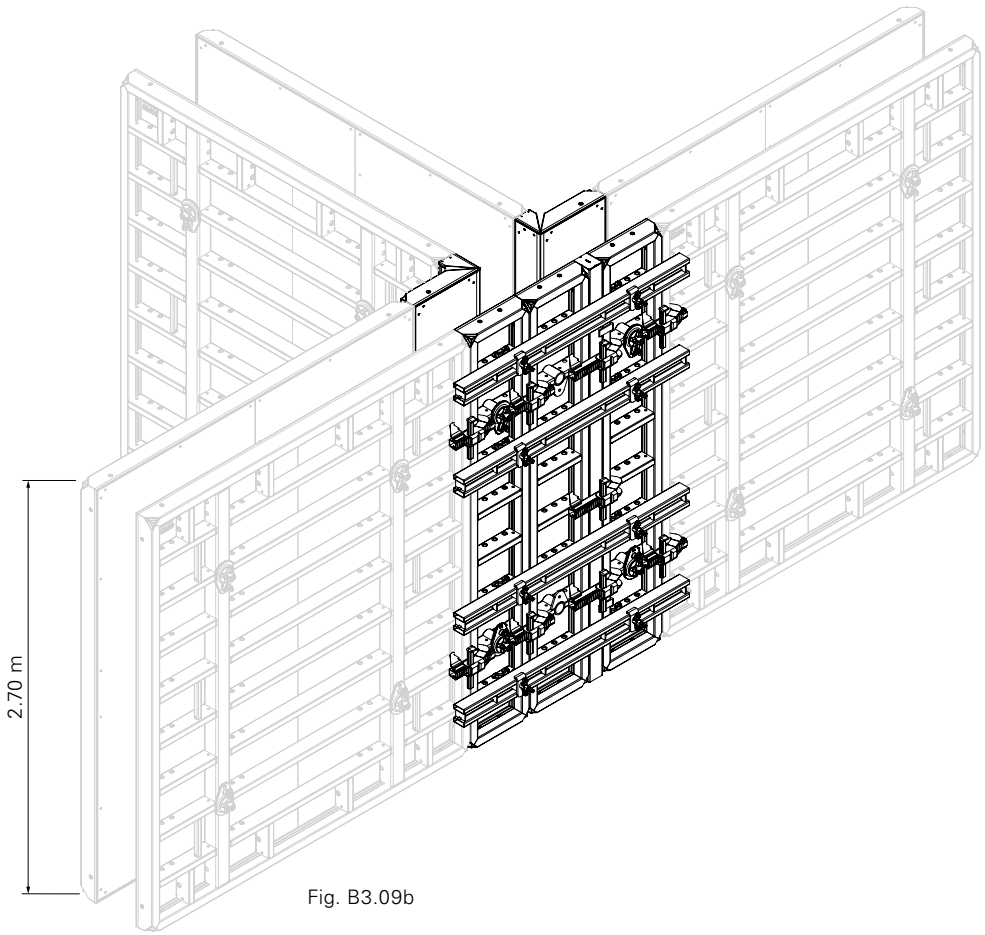


Fig. B3.09b

B4 Panel Connections following 90° T-junctions

Panel connections
For panels with widths b ≤ 120 following 90° T-junctions, these must be strengthened at the next panel joint by means of a Compensation Waler MAR 85 (21).

With extensions, a second Compensation Waler MAR 85 is required on the panel joint (shown as a dotted line).

(Fig. B4.01 + B4.01a + B4.01b)

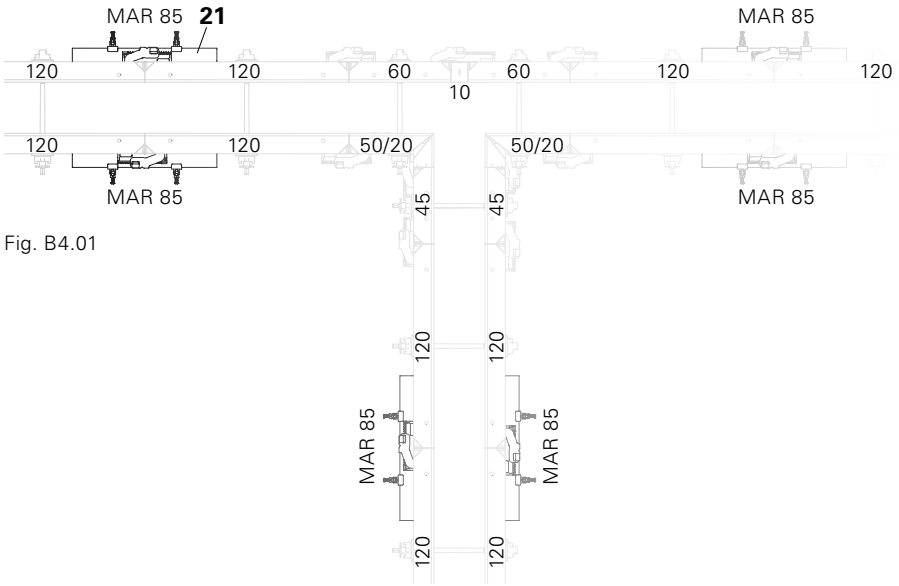


Fig. B4.01

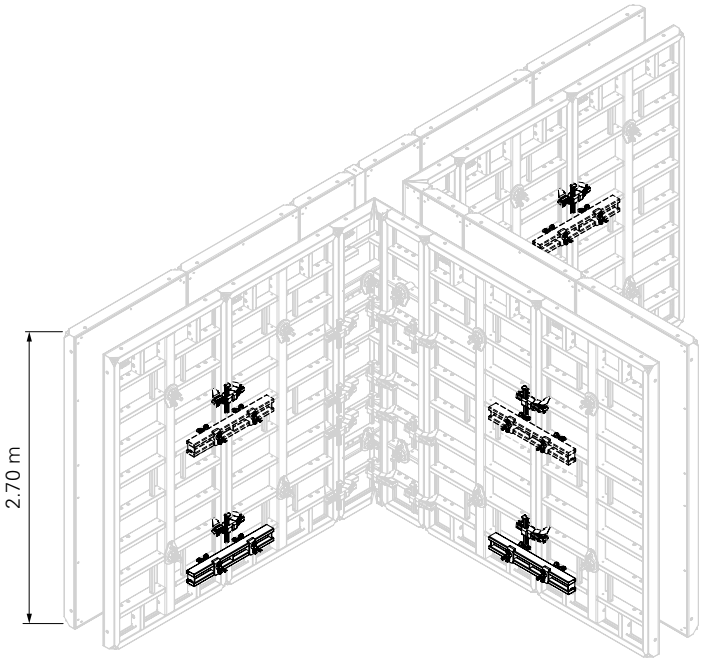


Fig. B4.01a

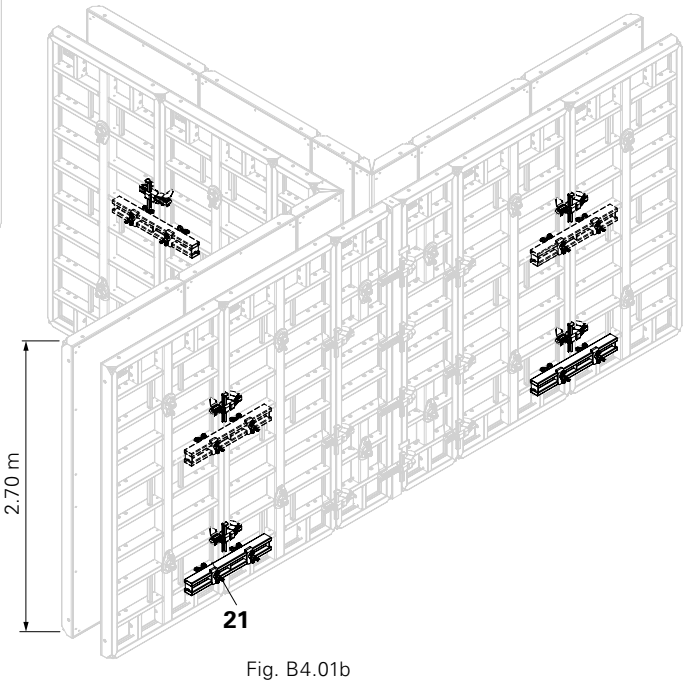


Fig. B4.01b

Wall Thickness Compensator WDA MX 270

Length compensation up to 10 cm.

Components

20	Alignment Coupler BFD	3x
50	Timber	1x

No ties required!

The length is compensated with Wall Thickness Compensator MX or using timber which has been cut to size (50). Note: number and arrangement of the BFD Alignment Couplers (20).
(Fig. B5.01)

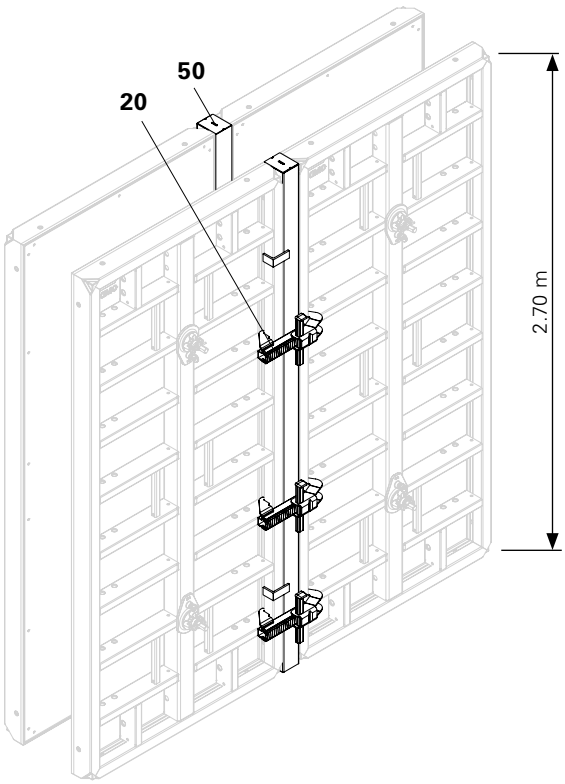


Fig. B5.01

Filler Profile TPP

Length compensation (b) from 10 to 36 cm.

- Perm. fresh concrete pressure 80 kN/ m² for: b ≥ 10 and b < 30 mm.
- Perm. fresh concrete pressure: 60 kN/ m² for: b ≥ 30 and b ≤ 36 mm.

Components

20	Alignment Coupler BFD	4x
21	Compensation Waler MAR 85	2x
51	Plywood filler 21 mm	1x
52	Filler Profile TPP	2x

When anchoring, ensure that the anchor forces are transferred centrally through the Compensation Waler MAR 85 (21) to the adjacent panels.
(Fig. B5.02b)

Installation (Fig. B5.02 + B5.02a)

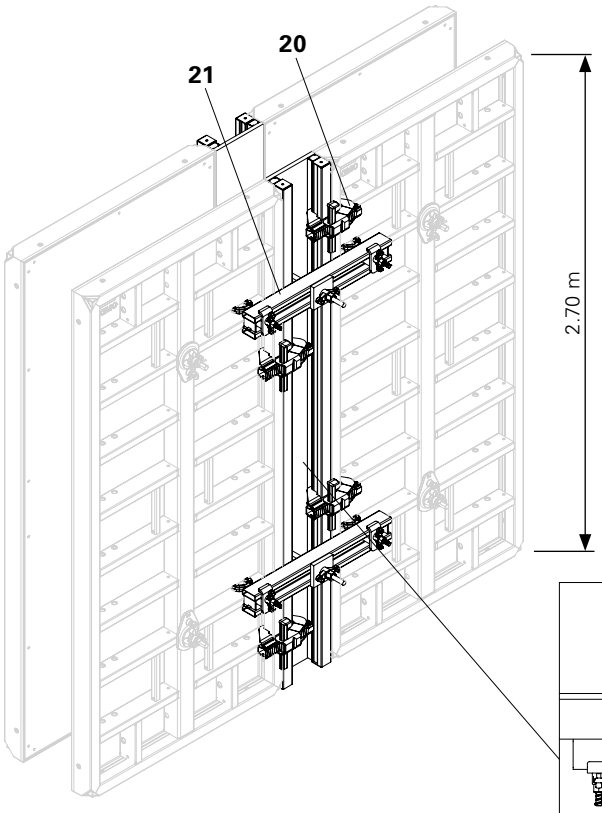


Fig. B5.02

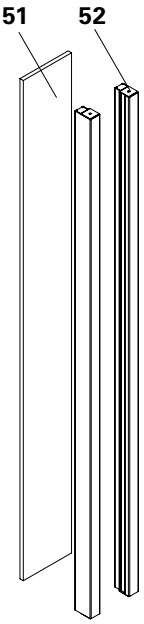


Fig. B5.02a

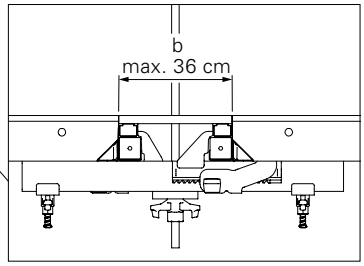


Fig. B5.02b

Stopend Formwork with Panel MX 18, 270 x 30

As Stopend Panel (101) for a wall thickness of 30 cm. (Fig. B6.01)

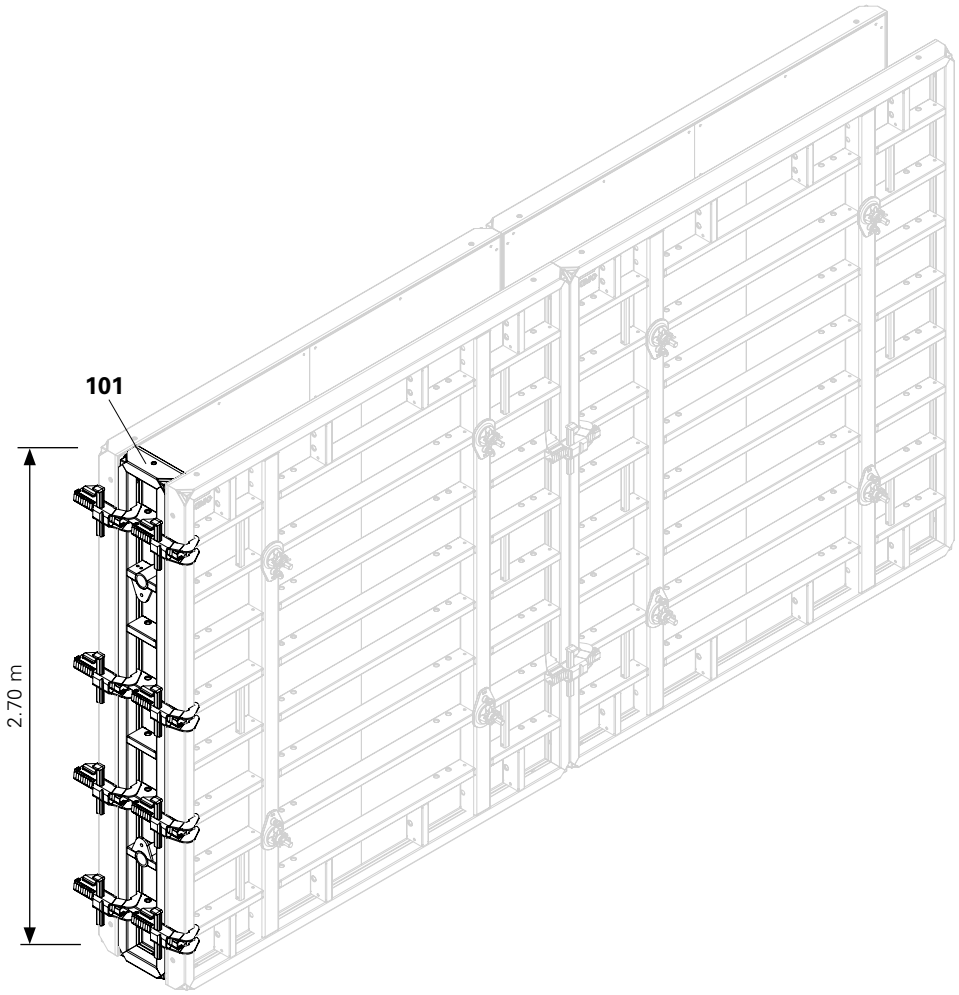


Fig. B6.01

Stopend Formwork with timber and plywood fillers

For wall thicknesses ≤ 40 cm.

The fresh concrete pressure of the stopend formwork is transferred to the MAXIMO Panels via the stopend ties and Waler 85.

With Panel **MX 18, 270 x 120** at the end of the wall. (Fig. B6.02 + B6.03)

Also valid for the following panels:
MXI MX 18, 270 x 30
MXI MX 18, 270 x 45
MXI MX 18, 270 x 60
MXI MX 18, 270 x 90

Connecting parts

21	Compensation Waler MAR 85 / alternatively: Waler 85	4x
23	Wingnut Pivot Plate DW 15	12x
25	Tie Rod DW 15	2x
26	Timber	2x
27	Top Tie Bracket-2 AH	4x
28	Stopend Tie TS	8x
51	Plywood filler 21 mm	1x

– Compensation Waler MAR 85 (21) with Stopend Tie (28) and Wingnut Pivot Plate (23), see Fig. B6.03b.
– Top Tie Bracket-2 AH with Tie Rod (25) and Wingnut Pivot Plate (23), see Fig. B6.03a.

With Panel **MX 18, 270 x 240** at the end of the wall. (without illustration)

Connecting parts

21	Compensation Waler MAR 85 / alternatively: Waler 85	4x
23	Wingnut Pivot Plate DW 15	8x
26	Timber	2x
28	Stopend Tie TS	8x
51	Plywood filler 21 mm	1x

Compensation Waler MAR 85 (21) with Stopend Tie (28) and Wingnut Pivot Plate (23), see Fig. B6.03b.

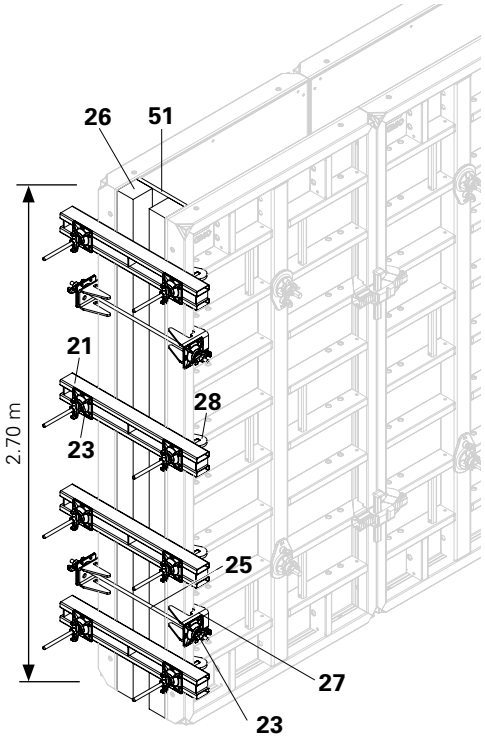


Fig. B6.02

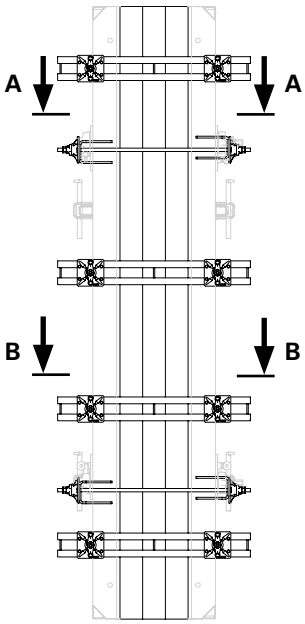


Fig. B6.03

A - A

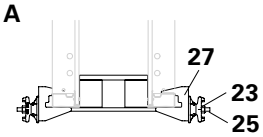


Fig. B6.03a

B - B

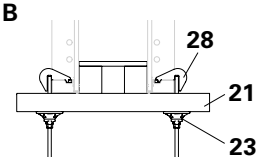


Fig. B6.03b

Stopend Panel Reinforcement

There are three possibilities available in order to install the stopend panel reinforcement.

- **without water bar Installation – MT**
- **with water bar Installation – MTF**
- **with expandable water bar**

Stopend panel reinforcement without water bar Installation MT
Height 2.70 m (Fig. B6.04a)
Height 1.20 m (Fig. B6.04b)

Consisting of:
– 2 x Outside Pieces AT 3 (55) for approx. 2.5 cm concrete cover or 2 x Outside Pieces AT 5 for approx. 5 cm concrete covering.
– 1 x Middle Piece MT (56).
(Fig. B6.05)

The rubber lip (55.1) allows a continuous reinforcement thickness of 16 mm.

Perm. fresh concrete pressure
dependent on the wall thickness,
80 kN/m² for wall thickness ≤ 30 cm,
70 kN/m² for wall thickness > 30 and wall thickness ≤ 35 cm,
60 kN/m² for wall thickness > 35 and wall thickness ≤ 40 cm.

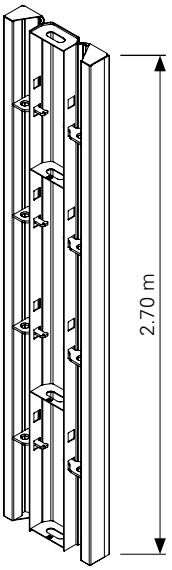


Fig. B6.04a

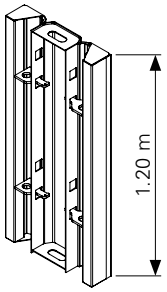


Fig. B6.04b

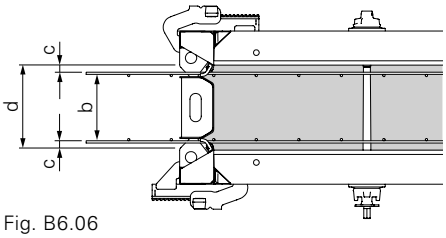


Fig. B6.06

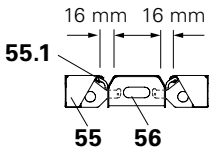


Fig. B6.05

Assembly
1. Position primary formwork.
2. Fix Outside Piece AT (55) to the primary formwork by means of the Alignment Coupler BFD (20).
3. Install first row of reinforcement.
4. Position Centre Piece MT (56).
5. Install second row of reinforcement.
6. Fix Outside Piece AT to the primary formwork with Alignment Coupler BFD.
7. Position closing formwork and insert Outer Piece AT into the Centre Piece MTF.
8. Close formwork, and insert ties to secure.

(Fig. B6.07)

Fig. B6.07

B6 Stopend Formwork

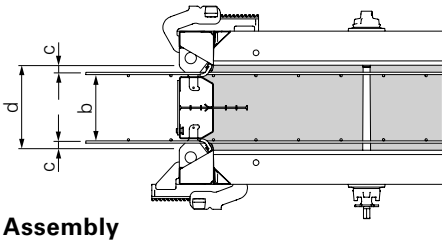
Stopend panel reinforcement with water bar Installation MTF
Height 2.70 m (Fig. B6.08a)
Height 1.20 m (Fig. B6.08b)

Consisting of:
– 2 x Outside Pieces AT 3 for approx. 2.5 cm concrete cover or 2 x Outside Pieces AT 5 for approx. 5 cm concrete covering.
– 1 x Centre Piece MTF (58).
(Fig. B6.09)

The rubber lip allows a continuous reinforcement thickness of 16 mm.

Concrete cover c:

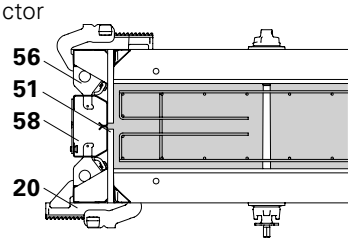
$$c = \frac{d - b}{2} - Ø \text{ Reinforcement}$$



Assembly
1. Position primary formwork.
2. Fix Outside Piece AT (56) to the primary formwork by means of Alignment Coupler BFD (20).
3. Install first row of reinforcement.
4. Position Centre Piece MTF (57) and install water bar.
5. Install second row of reinforcement.
6. Insert Outer Part AT into Centre Part MT and secure by means of Alignment Coupler BFD.
7. Position closing formwork.
8. Close formwork, and insert ties to secure.

(Fig. B6.10)

Stopend panel reinforcement with expandable water bar
Consisting of:
– 2 x Outside Pieces AT (56)
– 1 x Centre Piece MTF (58)
– Filler plates (51) supplied by the contractor



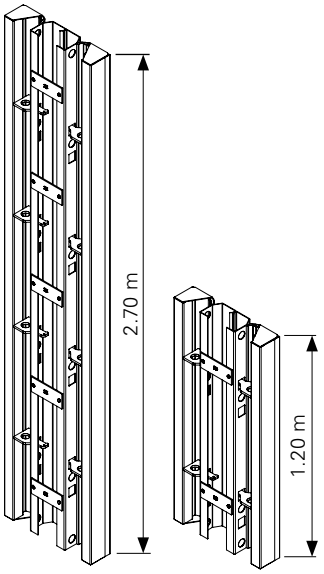


Fig. B6.08a Fig. B6.08b

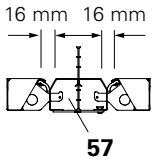


Fig. B6.09

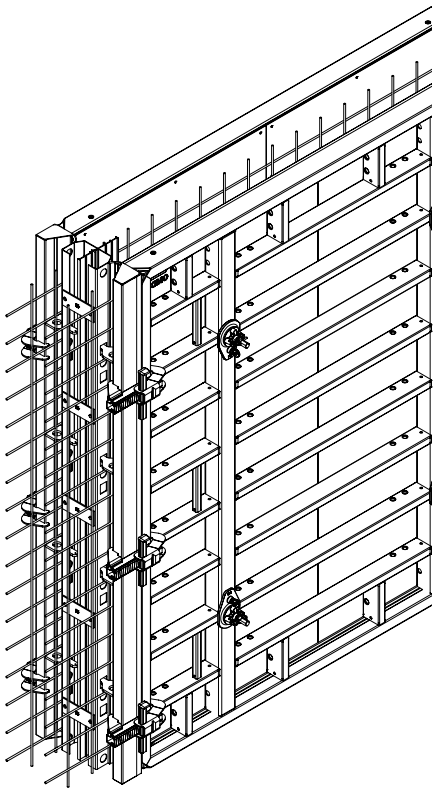


Fig. B6.10

	b	Wall thickness d [cm]							
		Concrete cover approx. 25 mm				Concrete cover approx. 50 mm			
Height: 2.70 m	[mm]	20	24/25	30	35	24/25	30	35	40
AT 270x3	–	2	2	2	2				
AT 270x5	–					2	2	2	2
		without water bar				without water bar			
MT 270x20	118	1				1			
MT 270x24/25	158		1				1		
MT 270x30	218			1				1	
MT 270x35/36	268				1				1
		with water bar				with water bar			
MTF 270x20	118	1				1			
MTF 270x24/25	158		1				1		
MTF 270x30	218			1				1	
MTF 270x35/36	268				1				1
Height: 1.20 m									
AT 120x3	–	2	2	2	2				
AT 120x5	–					2	2	2	2
		without water bar				without water bar			
MT 120x20	118	1				1			
MT 120x24/25	158		1				1		
MT 120x30	218			1				1	
MT 120x35/36	268				1				1
		with water bar				with water bar			
MTF 120x20	118	1				1			
MTF 120x24/25	158		1				1		
MTF 120x30	218			1				1	
MTF 120x35/36	268				1				1

Extension Guidelines

Horizontal pre-assembly up to 5.40 m high

Swivel nuts of the tie points must be mounted on the primary formwork!

Panel connections
For extension units height ≤ 5.40 m, Alignment Couplers BFD (20) are to be used on panel joints.
(Fig. B7.01a – B7.01d)

Assembly information
The assembly surface must be level.
- Place timbers or planks in position as support.
- Pre-assemble extension units in a horizontal position, with the form-lining facing downwards.

MX 18, 270 x 30 / 45 / 60

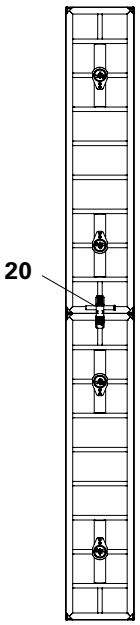


Fig. B7.01a

MX 18, 270 x 90 / 120

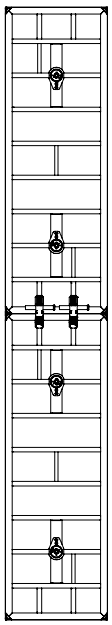


Fig. B7.01b

MX 18, 270 x 240

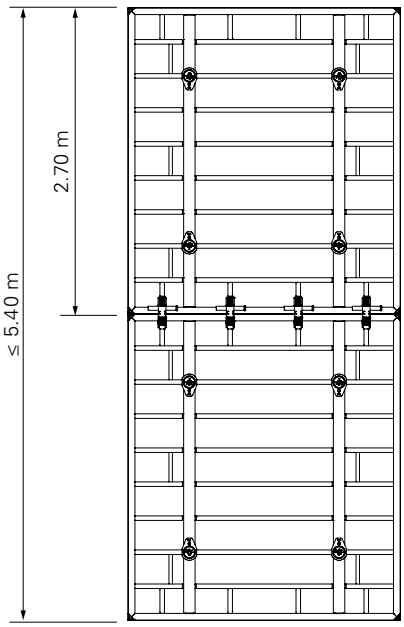


Fig. B7.01c

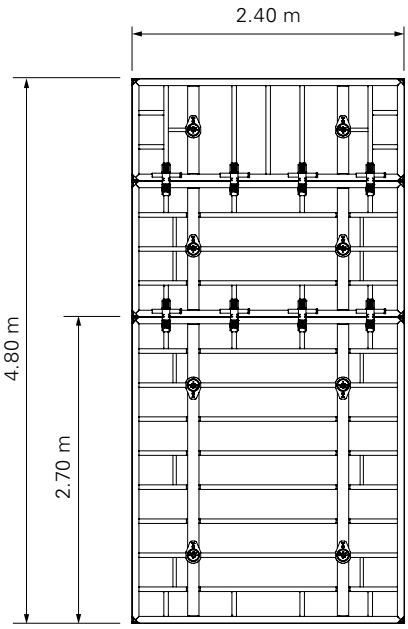


Fig. B7.01d

Erection with the crane
(Fig. B7.02)

- **Do not exceed the permissible load-bearing capacity of the MAXIMO Lifting Hook and crane!**
- **Note: Instructions for Use for the MAXIMO Lifting Hook 1.5 t!**

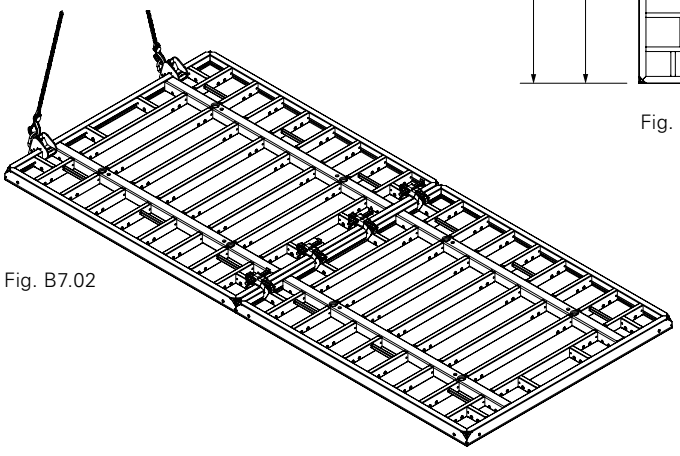


Fig. B7.02

Extension Guidelines

Horizontal pre-assembly up to 8.10 m high

Swivel nuts of the tie points must be mounted on the primary formwork!

Panel connections
For extension units height ≤ 5.40 m, Alignment Couplers BFD (20) and Compensation Walers MAR 85 (21) are to be used on panel joints.
(Fig. B7.03a – B7.03c)

Assembly information
- The assembly surface must be level.
- Place timbers or planks in position as support.
- Pre-assemble extension units in a horizontal position, with the form-lining facing downwards.

MX 18, 270 x 60 / 90 / 120

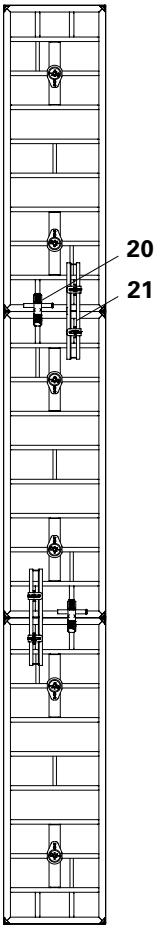


Fig. B7.03a

MX 18, 270 x 240

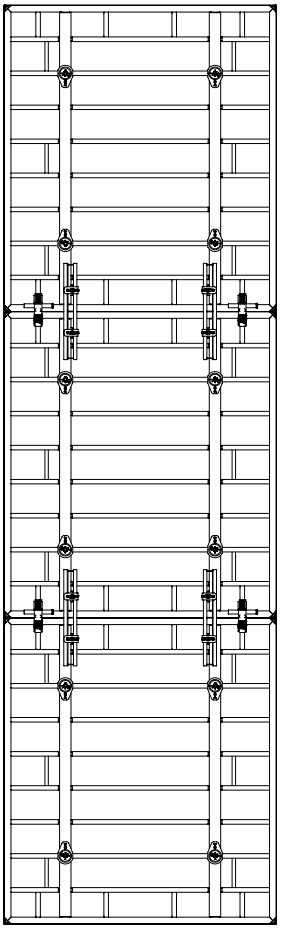


Fig. B7.03b

MX 18, 270 x 240 Panels horizontal

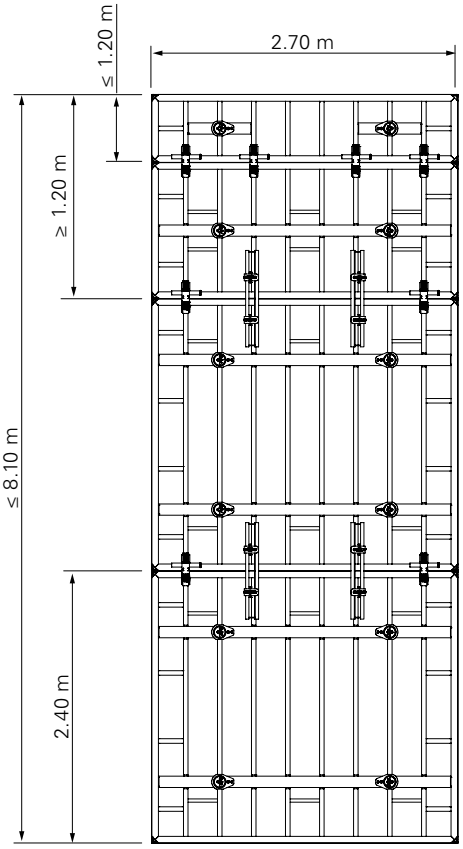


Fig. B7.03c

Erection with the crane
(Fig. B7.04)

- **Do not exceed the permissible load-bearing capacity of the MAXIMO Lifting Hook and crane!**
- **Note: Instructions for Use for the MAXIMO Lifting Hook 1.5 t!**

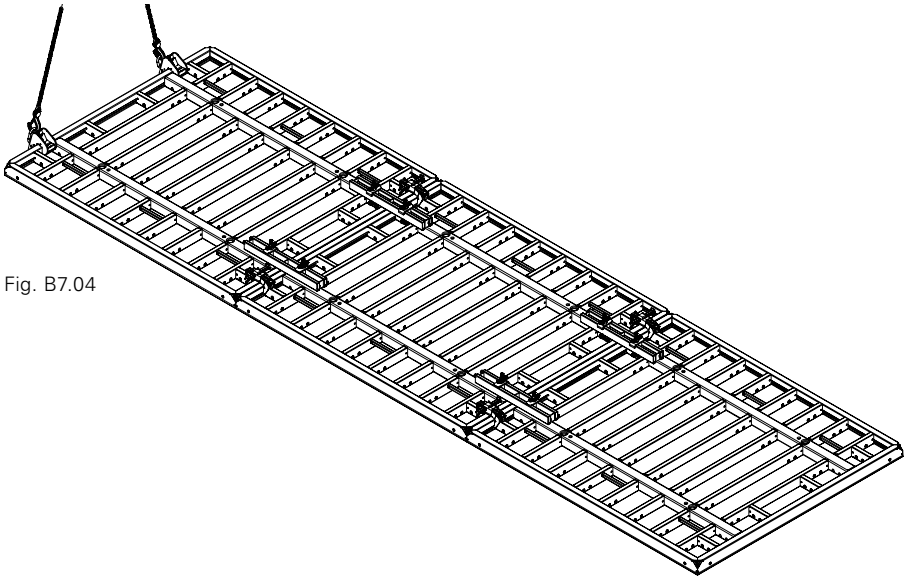


Fig. B7.04

C1 90° Corners with Inside Corner MXI 18, 330 x 50/20

Wall Thicknesses 15 – 40 cm

Outside Corner MX 330 x 45

Perm. fresh concrete pressure: 80 kN/m²

Components

20	Alignment Coupler BFD
120	Panel MXM 18, 330 x 60
122	Panel MX 18, 330 x 45
126	Panel MX 18, 330 x 240
142	Wall Thickness Compensator WDA (18) or filler timber supplied by contractor ≤ 10 cm
159	Outside Corner MXA 330 x 45
161	Inside Corner MXI 18, 330 x 50/20

Examples
- Wall thickness 15
  Fig. C1.01 + C1.05a + C1.05b
- Wall thickness 17.5
  Fig. C1.02 + C1.05a + C1.05b
- Wall thickness 20
  Fig. C1.03 + C1.05a + C1.05b
- Wall thickness 24 / 25
  Fig. C1.04 + C1.05a + C1.05b
- Wall thickness 30
  Fig. C1.05 + C1.05a + C1.05b
- Wall thickness 35 / 36
  Fig. C1.06 + C1.05a + C1.05b
- Wall thickness 40
  Fig. C1.07 + C1.05a + C1.05b

Compensations
- Wall thickness 25 + 40 cm:
  without compensation
- Wall thickness 15 + 17.5 cm:
  internal and external compensation
- Wall thickness 20 + 24 cm:
  internal compensation
- Wall thickness 30 + 35 + 36 cm:
  external compensation

90° Corners with Inside Corner MXI 18, ... x 60, see D3.

Alternatively – panel width 45
Max. panel width between corner and subsequent panel is 45 cm – MX 18, 330 x 45 (122). (Fig. C1.08)

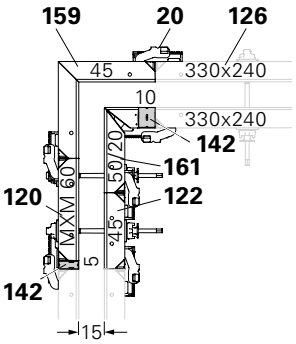


Fig. C1.01

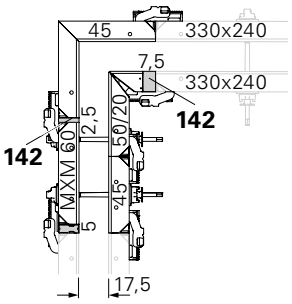


Fig. C1.02

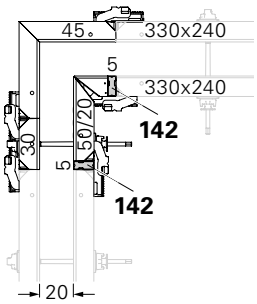


Fig. C1.03

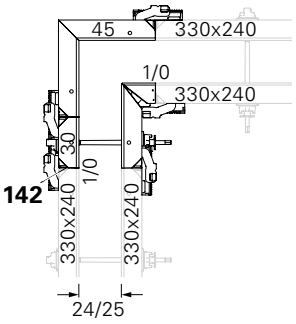


Fig. C1.04

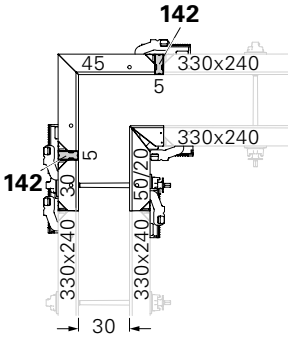


Fig. C1.05

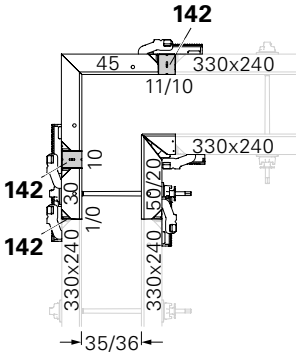


Fig. C1.06

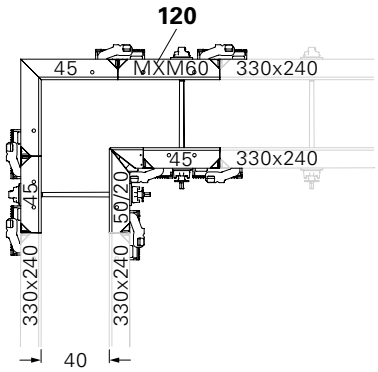


Fig. C1.07

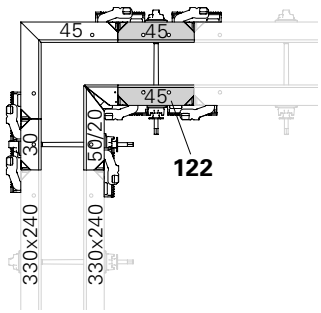


Fig. C1.08

C1 90° Corners with Inside Corner MXI 18, 330 x 50/20

Arrangement of the Alignment Couplers

Valid for wall thicknesses 15 – 40 cm.
(Fig. C1.05a + C1.05b)

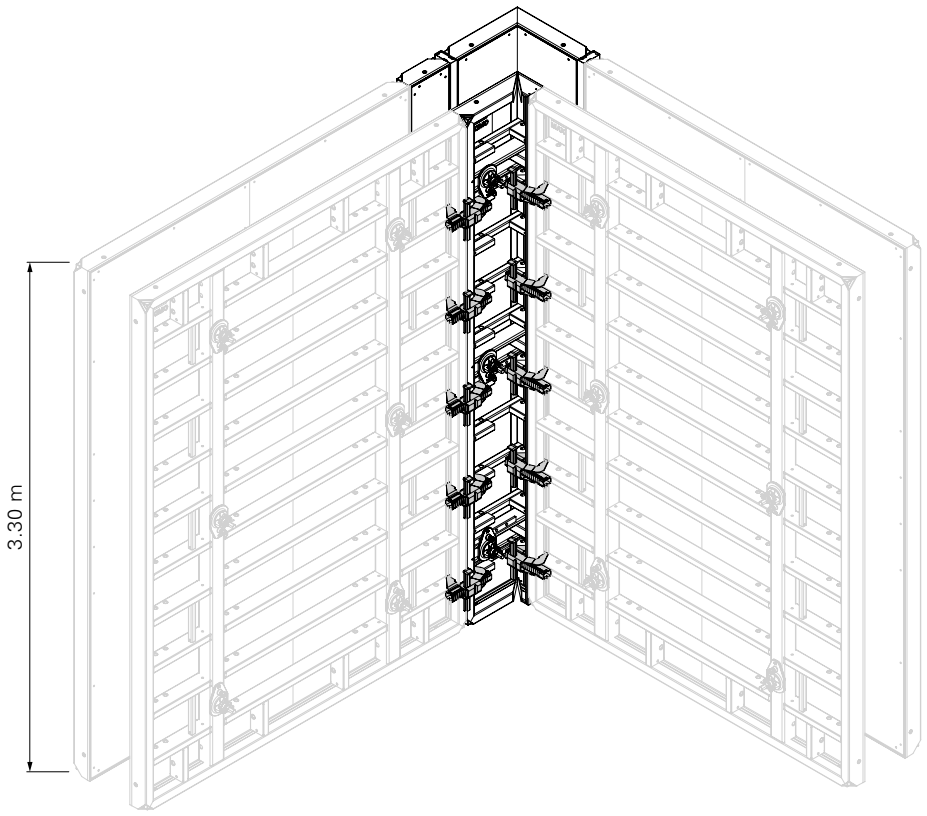


Fig. C1.05a

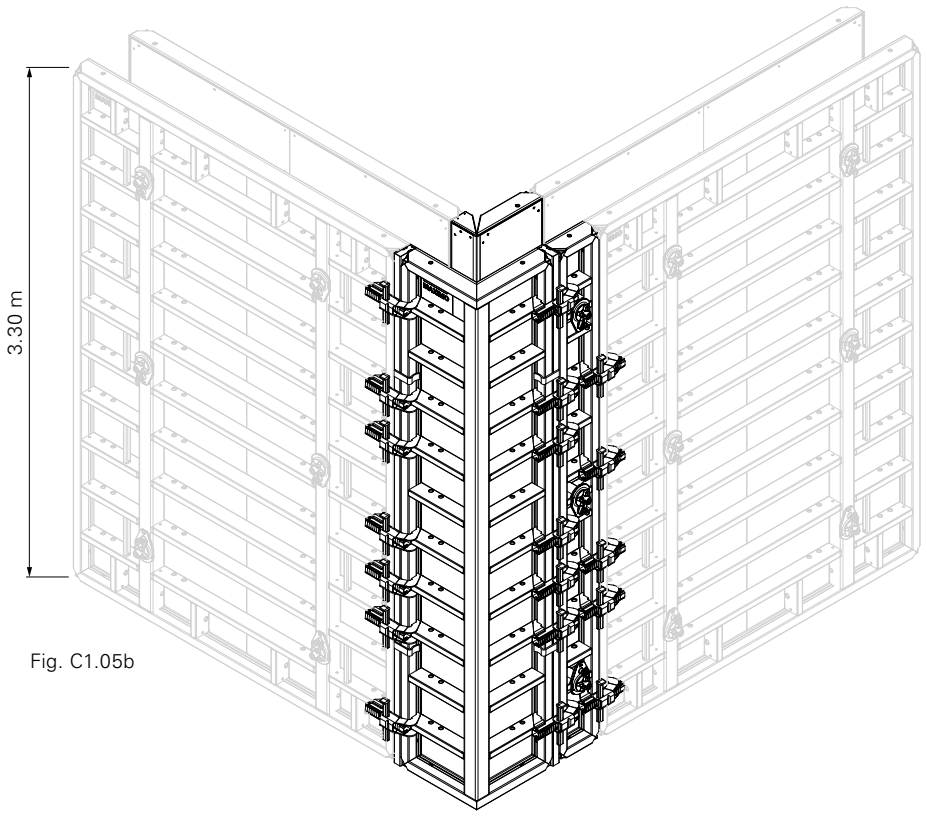


Fig. C1.05b

C1 90° Corners with Inside Corner MXI 18, 330 x 50/20

Wall Thicknesses > 40 – 60 cm

Outside Corner MXA 330 x 45

Perm. fresh concrete pressure: 60 kN/m²

Components

20	Alignment Coupler BFD
21	Compensation Waler MAR 85
22	Compensation Waler MAR 170
120	Panel MXM 18, 330 x 60
121	Panel MX 18, 330 x 30
122	Panel MX 18, 330 x 45
126	Panel MX 18, 330 x 240
142	Wall Thickness Compensator WDA MX 330 or filler timber supplied by contractor ≤ 10 cm
159	Outside Corner MXA 330 x 45
161	Inside Corner MXI 18, 330 x 50/20

Examples
- Wall thickness 45:
  Fig. C1.10 + C1.10a + C1.10b
- Wall thickness 50:
  Fig. C1.11 + C1.10a + C1.10b
- Wall thickness 55:
  Fig. C1.12 + C1.12a + C1.12b
- Wall thickness 60:
  Fig. C1.13 + C1.12a + C1.12b

Compensations
Wall thickness 45 + 50 + 60 cm:
external compensation.
Wall thickness 55 cm:
without compensation.

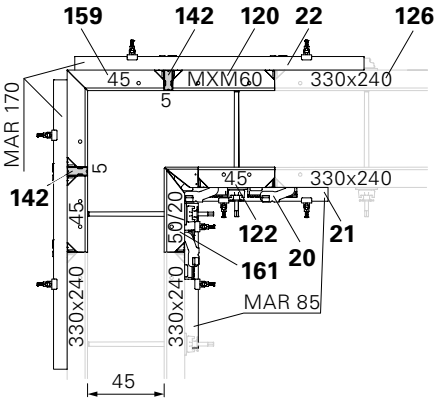


Fig. C1.10

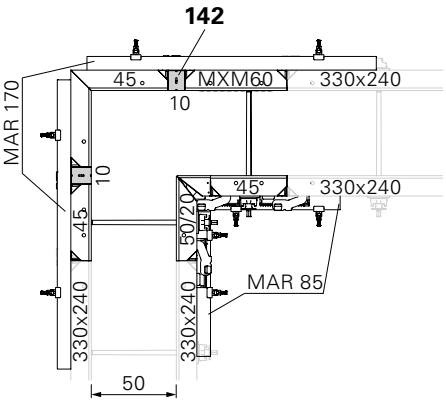


Fig. C1.11

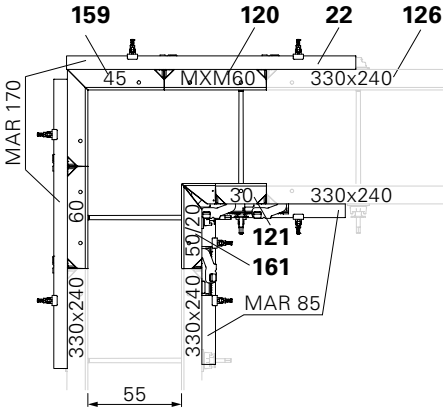


Fig. C1.12

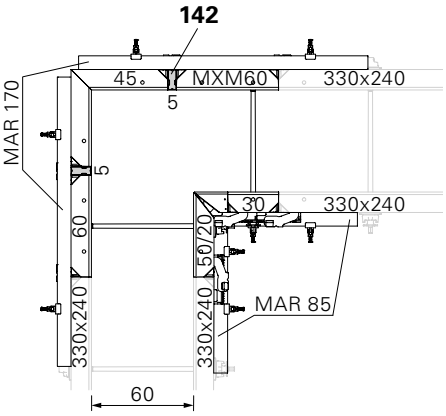


Fig. C1.13

Offset mounting of BFD Alignment Couplers between
- Corner 50/20,
- Panel ... x 30,
- as well as following panel ... x 240.

„X"
from Fig. C1.12a

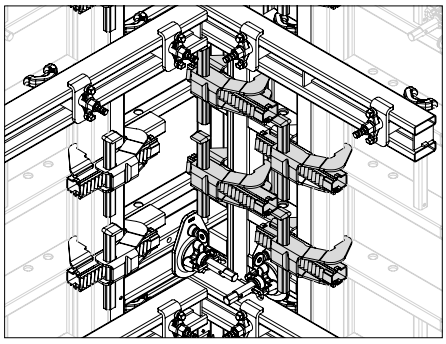


Fig. C1.12b

C1 90° Corners with Inside Corner MXI 18, 330 x 50/20

Arrangement of the Alignment Couplers and Compensation Walers

Valid for wall thicknesses > 40 – 50 cm.
(Fig. C1.10a + C1.10b)

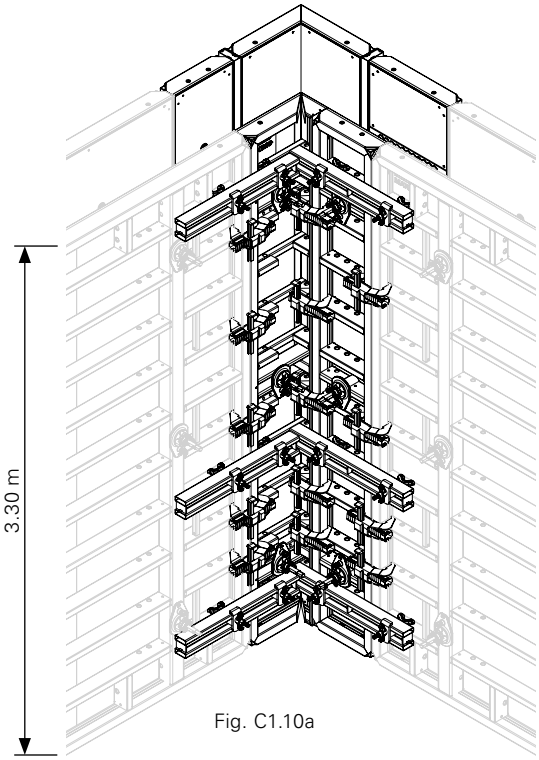


Fig. C1.10a

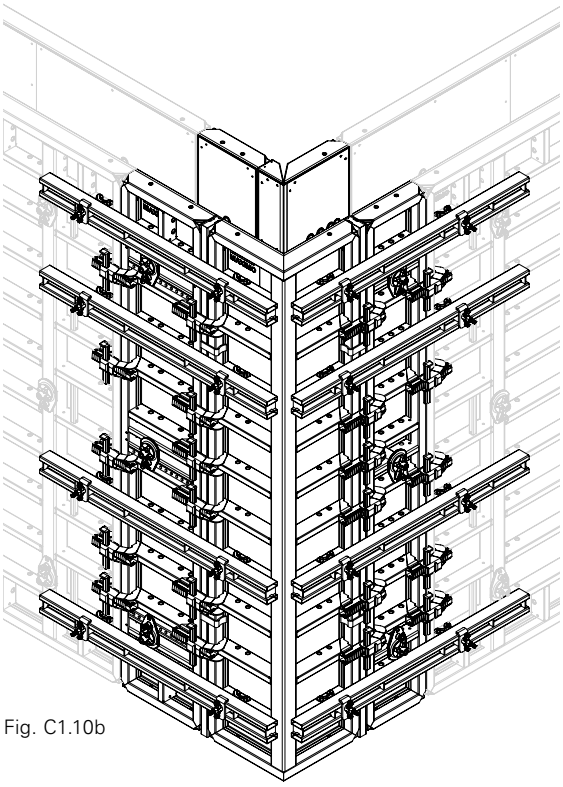


Fig. C1.10b

Valid for wall thicknesses > 50 – 60 cm.
(Fig. C1.12a + C1.12b)

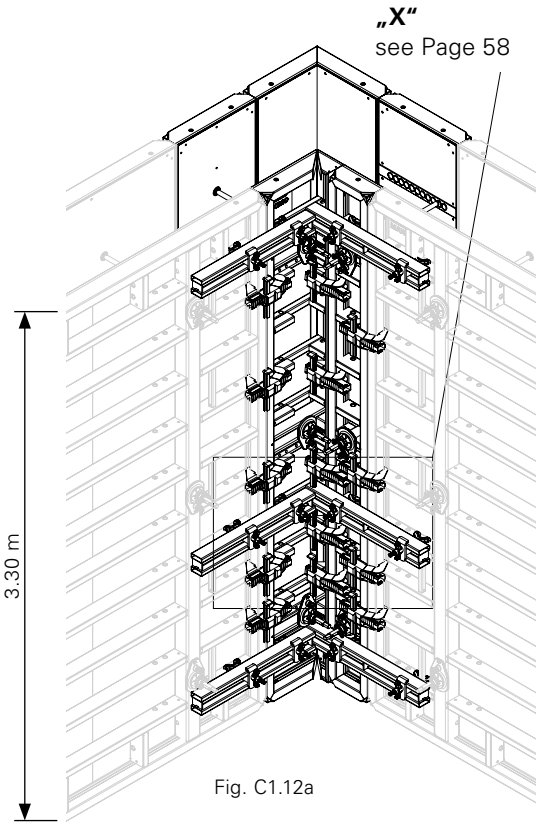


Fig. C1.12a

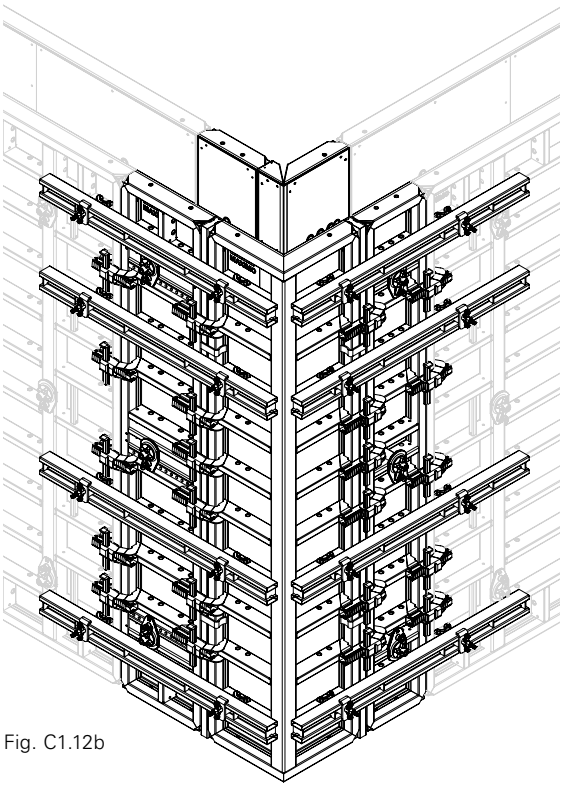


Fig. C1.12b

C2 Panel Connections following 90° Corners

Panel connections
With 90° corners, these must be strengthened at the next panel joint by means of a Compensation Waler MAR 85 (21).
This applies to panels with widths b ≤ 120.

With extensions, a second Compensation Waler MAR 85 is required on the panel joint.

(Fig. C2.01a + C2.01b)

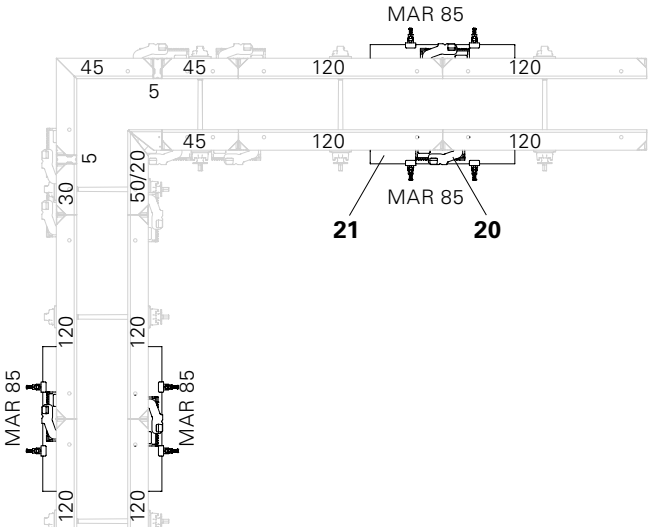


Fig. C2.01

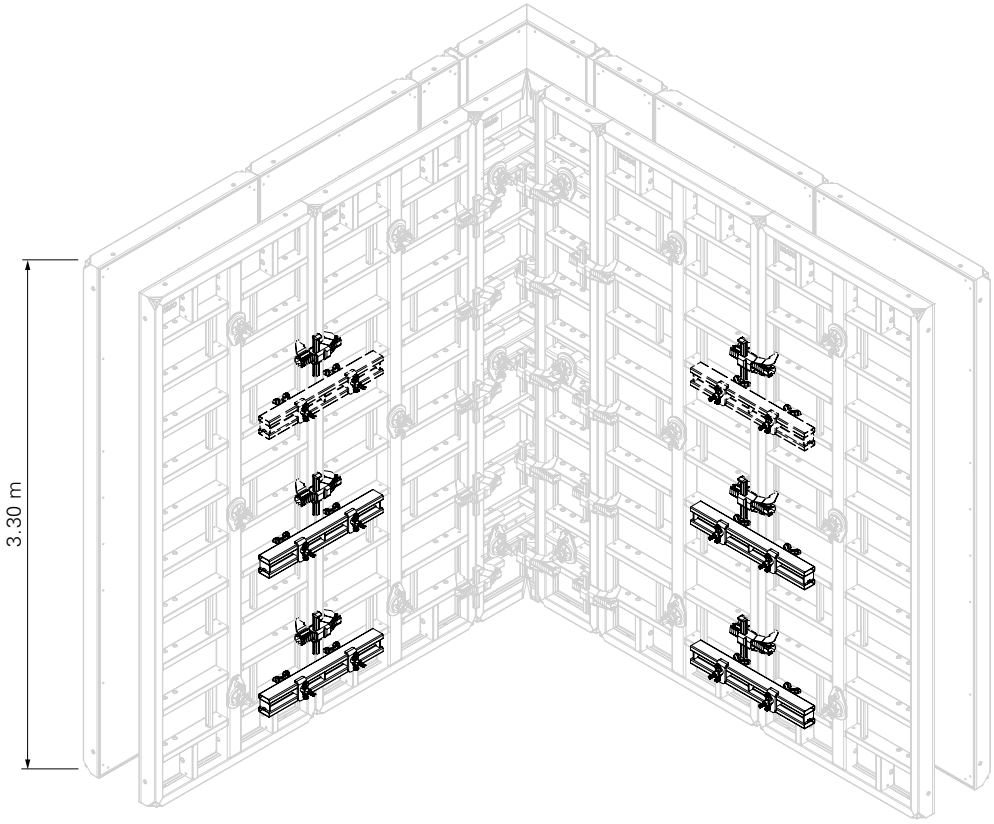


Fig. C2.01a

C2 Panel Connections following 90° Corners

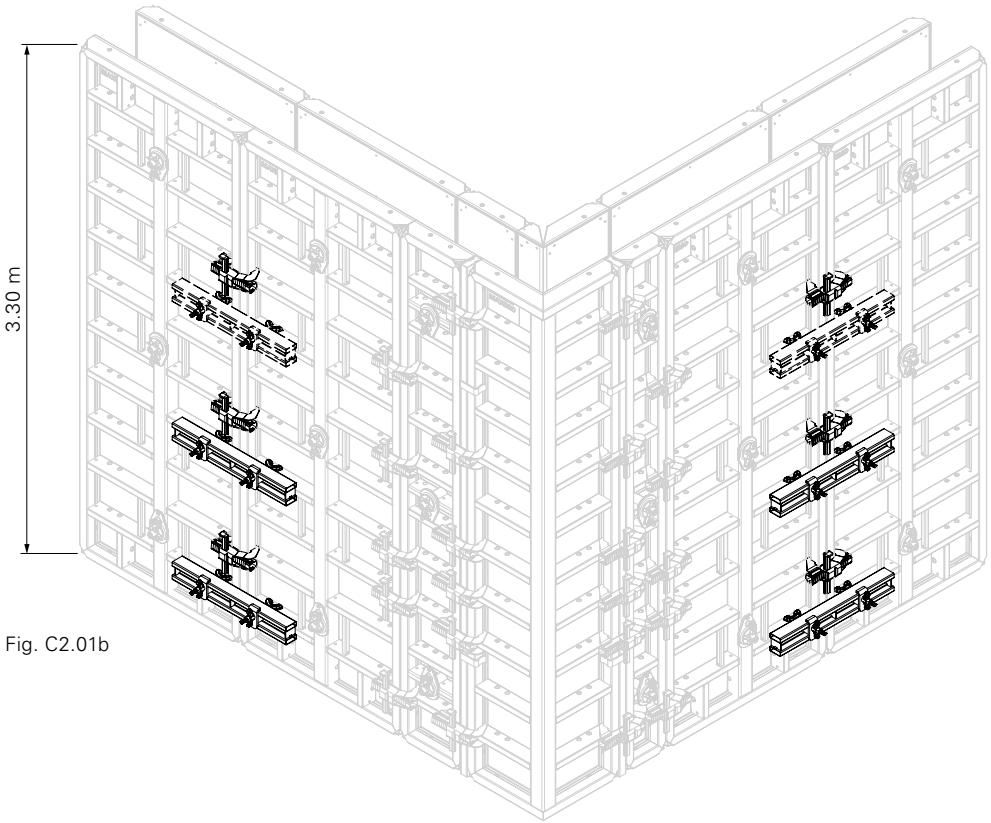


Fig. C2.01b

C3 90° T-junctions with Inside Corner MXI 18, 330 x 50/20

Wall Thicknesses 15 – 40 cm

Perm. fresh concrete pressure: 80 kN/m²

Components

20	Alignment Coupler BFD
120	Panel MXM 18, 330 x 60
122	Panel MX 18, 330 x 45
123	Panel MX 18, 330 x 60
126	Panel MX 18, 330 x 240
142	Wall Thickness Compensator WDA MX 330 or filler timber supplied by contractor ≤ 10 cm
161	Inside Corner MXI 18, 330 x 50/20

Assembly

1. Form the T-junction with Inside Corner MXI 50/20 18, (161).
2. Form the opposing straight wall with Panel MX 18, 45 (122), MX 18, 60 (123) or MXM 18, 60 (120) depending on the wall thickness.
3. Install compensation (142) in accordance with the wall thickness.

Examples

– Wall thickness 15:
Fig. C3.01 + C3.05a + C3.05b
– Wall thickness 17.5:
Fig. C3.02 + C3.05a + C3.05b
– Wall thickness 20:
Fig. C3.03 + C3.05a + C3.05b
– Wall thickness 24 / 25:
Fig. C3.04 + C3.05a + C3.05b
– Wall thickness 30:
Fig. C3.05 + C3.05a + C3.05b
– Wall thickness 35 / 36:
Fig. C3.06 + C3.05a + C3.05b
– Wall thickness 40:
Fig. C3.07 + C3.05a + C3.05b

Compensations

– Wall thickness 15 + 17.5 + 24 + 25 cm: external compensation
– Wall thickness 30 + 35 + 36 + 40 cm: external compensation
– Wall thickness 20: without compensation

90° T-junctions with Inside Corner MXI 18, ... x 60, see D3.

Alternatively - panel width 45

Max. panel width on the T-junction between corner and following panel is 45 cm – MX 18, 330 x 45 (122). (Fig. C3.08)

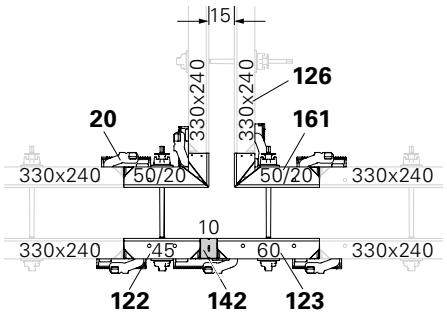


Fig. C3.01

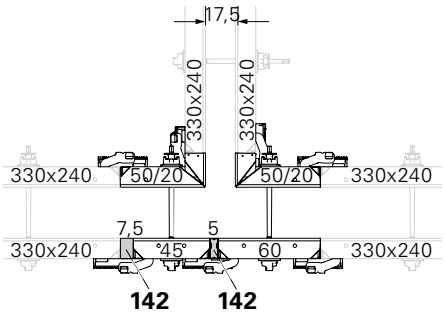


Fig. C3.02

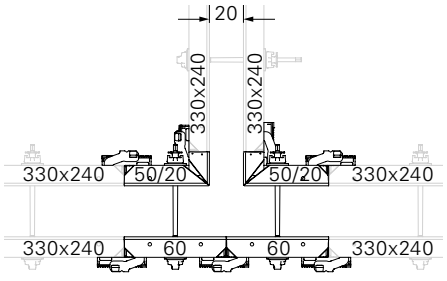


Fig. C3.03

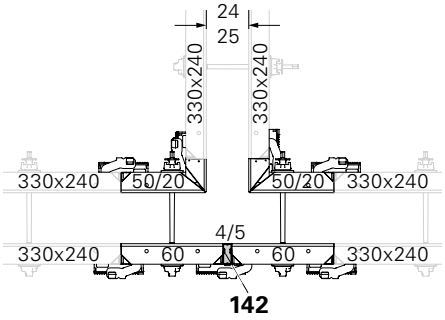


Fig. C3.04

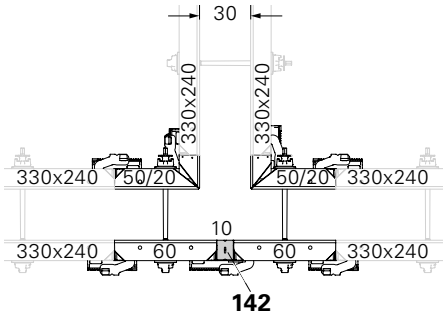


Fig. C3.05

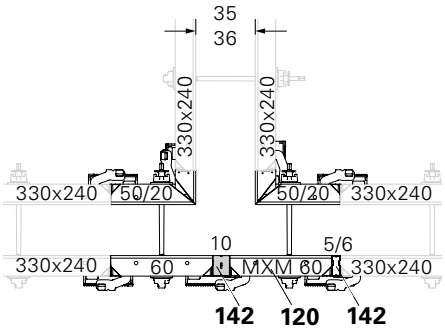


Fig. C3.06

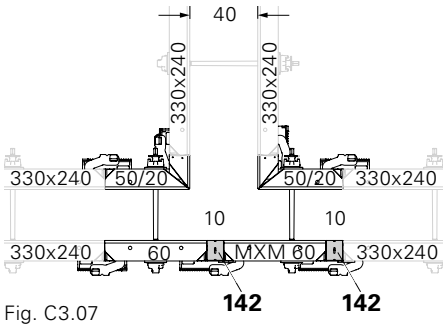


Fig. C3.07

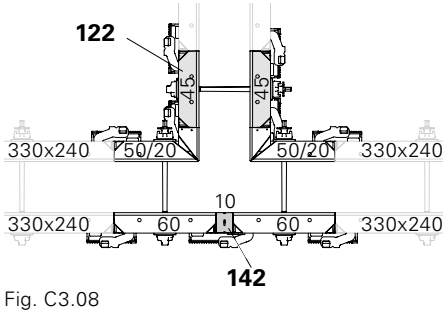


Fig. C3.08

C3 90° T-junctions with Inside Corner MXI 18, 330 x 50/20

Arrangement of the Alignment Couplers

Valid for wall thicknesses 15 – 45 cm.
(Fig. C3.05a + C3.05b)

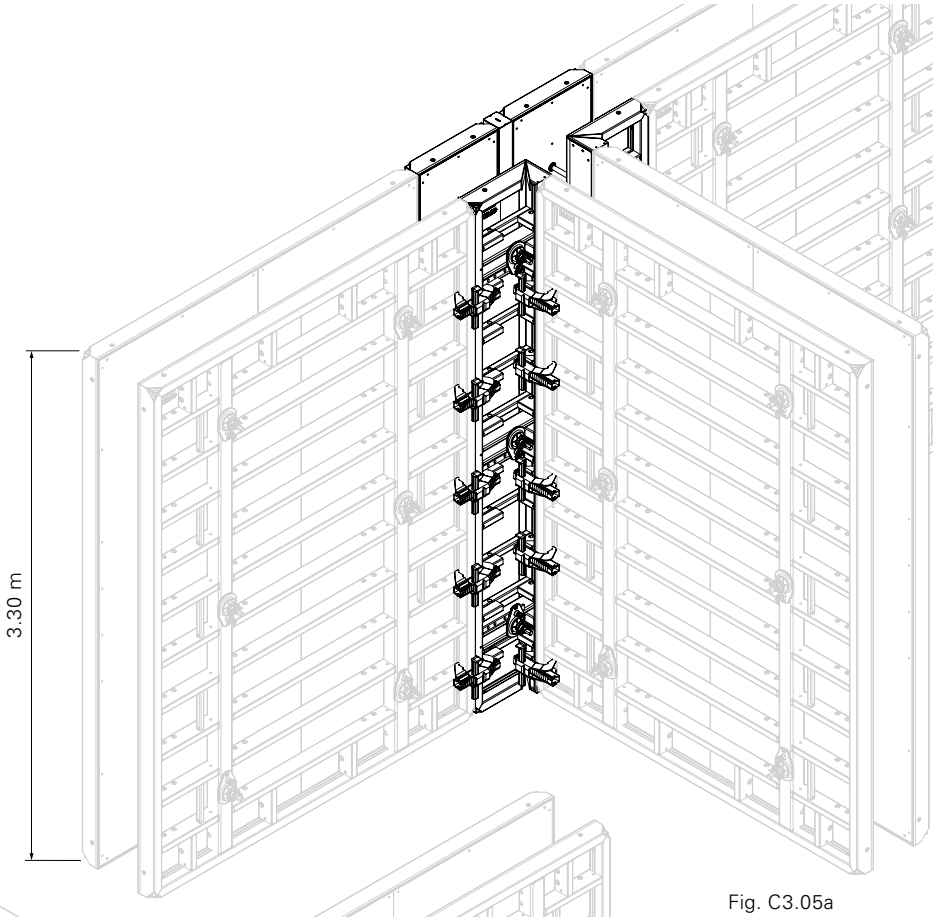


Fig. C3.05a

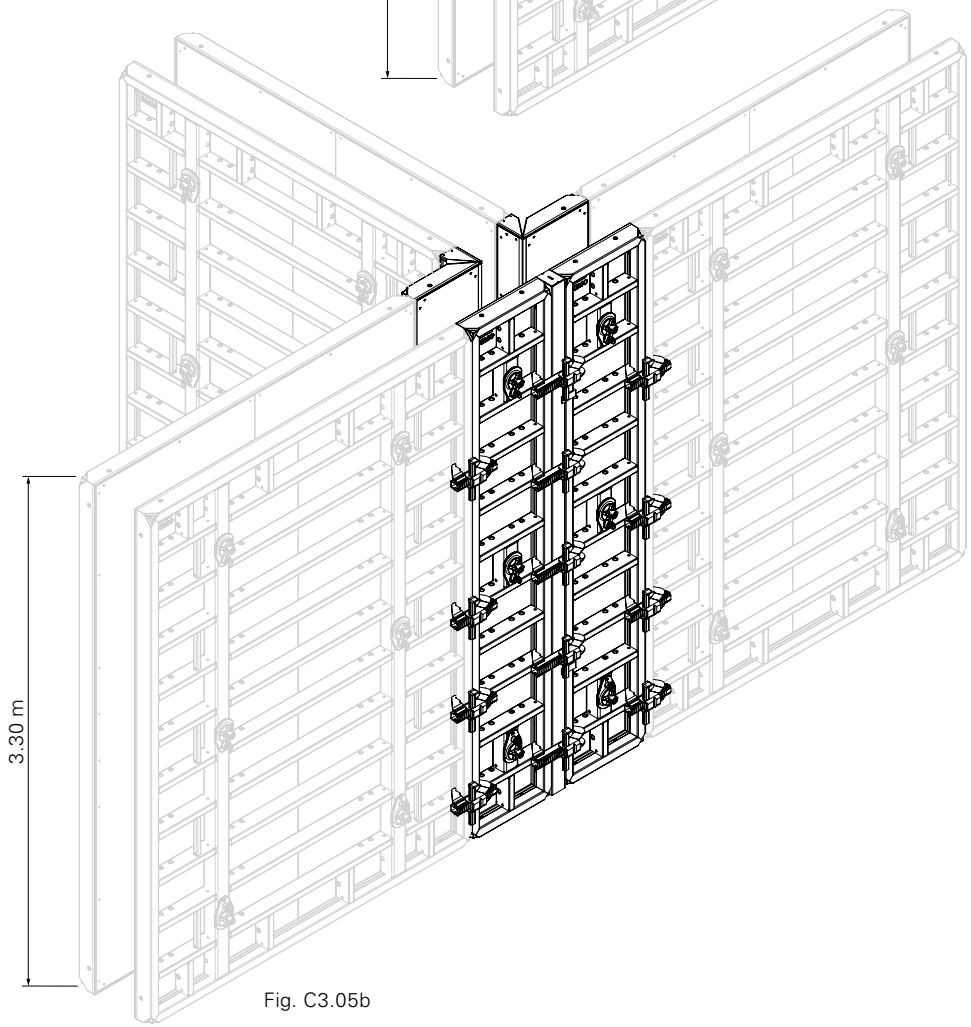


Fig. C3.05b

C3 90° T-junctions with Inside Corner MXI 18, 330 x 50/20

Wall Thicknesses > 40 – 60 cm

Perm. fresh concrete pressure: 60 kN/m²

Components

20	Alignment Coupler BFD
22	Compensation Waler MAR 170
120	Panel MXM 18, 330 x 60
122	Panel MX 18, 330 x 45
123	Panel MX 18, 330 x 60
126	Panel MX 18, 330 x 240
142	Wall Thickness Compensator WDA MX 330 or filler timber supplied by contractor ≤ 10 cm
161	Inside Corner MXI 18, 330 x 50/20

Assembly

1. Form the T-junction with Inside Corner MXI 18, 50/20 (161).
2. Form the opposing straight wall with Panel MX 18, 45 (122), MX 18, 60 (123) or MXM 18, 60 (120) depending on the wall thickness.
3. Install compensation (142) in accordance with the wall thickness.
4. On the straight wall, install Compensation Waler MAR 170 (22) centrally to the outgoing wall.

Examples

Wall thickness 45:
Fig. C3.09 + C3.09a + C3.09b
Wall thickness 50:
Fig. C3.10 + C3.09a + C3.09b
Wall thickness 55:
Fig. C3.11 + C3.09a + C3.09b
Wall thickness 60:
Fig. C3.12 + C3.09a + C3.09b

Compensations

Wall thickness 45 + 55 + 60 cm:
external compensation
Wall thickness 50:
without compensation

90° T-junctions with Inside Corner MXI 18, ... x 60, see Section D3.

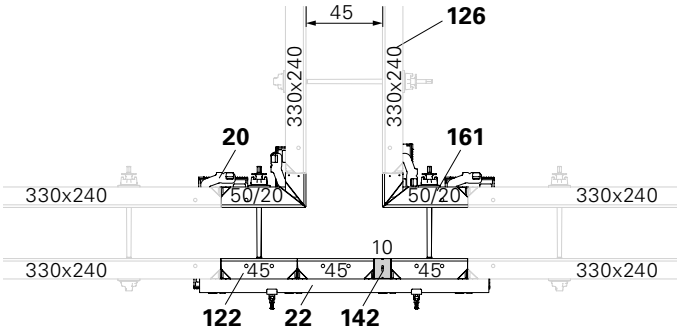


Fig. C3.09

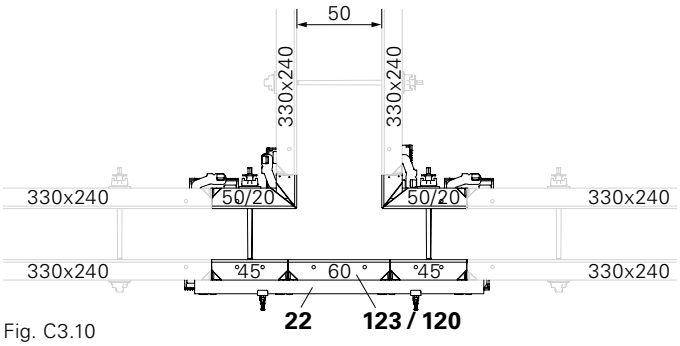


Fig. C3.10

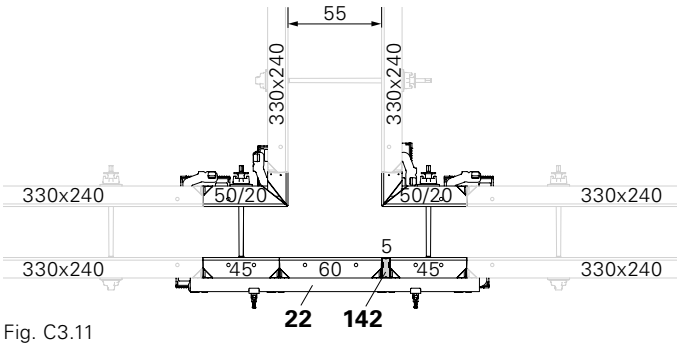


Fig. C3.11

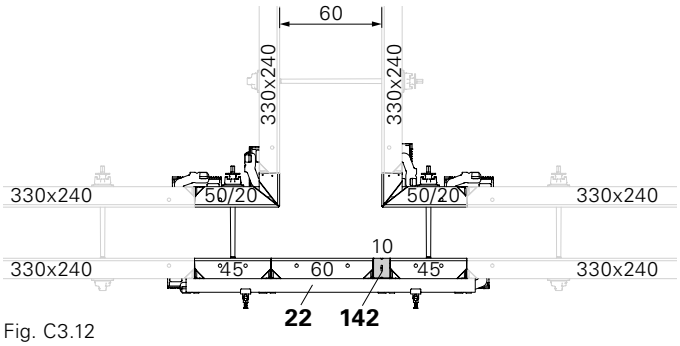


Fig. C3.12

C3 90° T-junctions with Inside Corner MXI 18, 330 x 50/20

Arrangement of the Alignment Couplers and Compensation Walers

Valid for wall thicknesses > 40 – 60 cm.
(Fig. C3.09a + C3.09b)

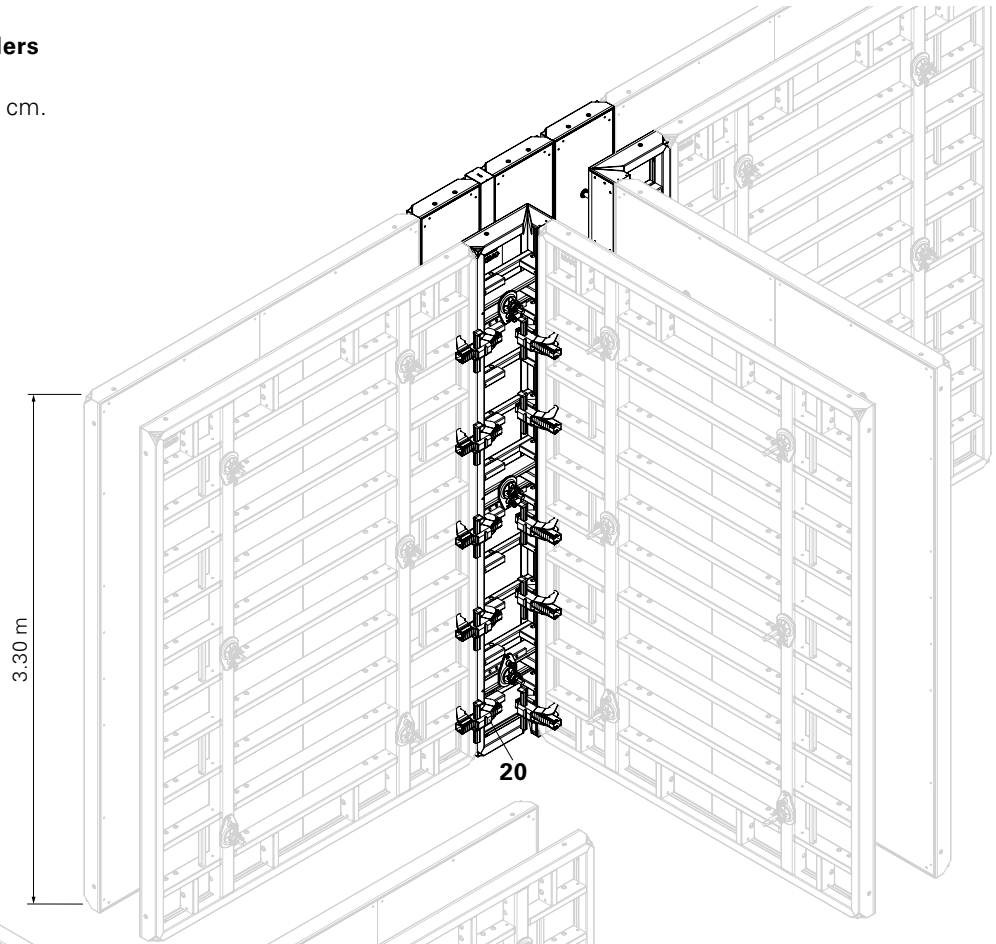


Fig. C3.09a

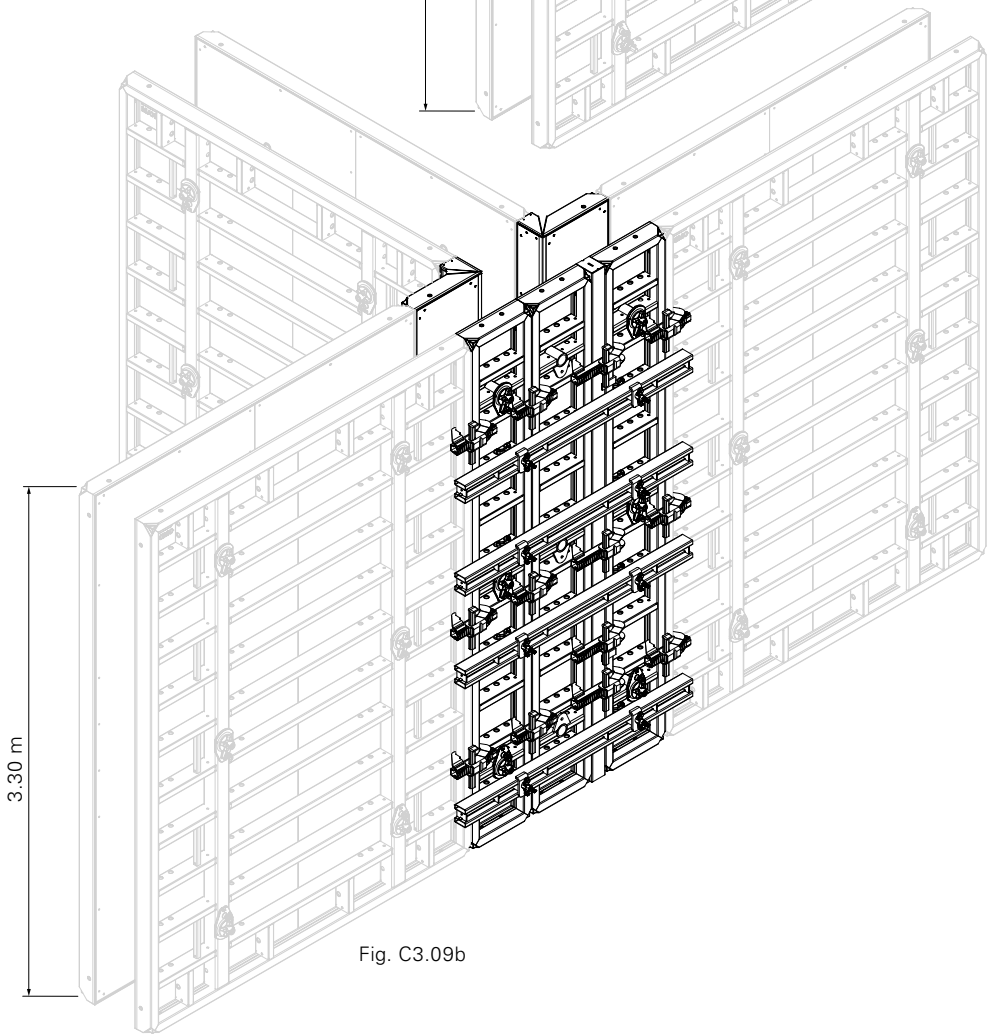


Fig. C3.09b

C4 Panel Connections following 90° T-junctions

Panel connections
With 90° T-junctions, these must be strengthened at the next panel joint by means of a Compensation Waler MAR 85 (21).
This applies to panels with widths b ≤ 120.

With extensions, a second Compensation Waler MAR 85 is required on the panel joint (shown as a dotted line).

(Fig. C4.01)

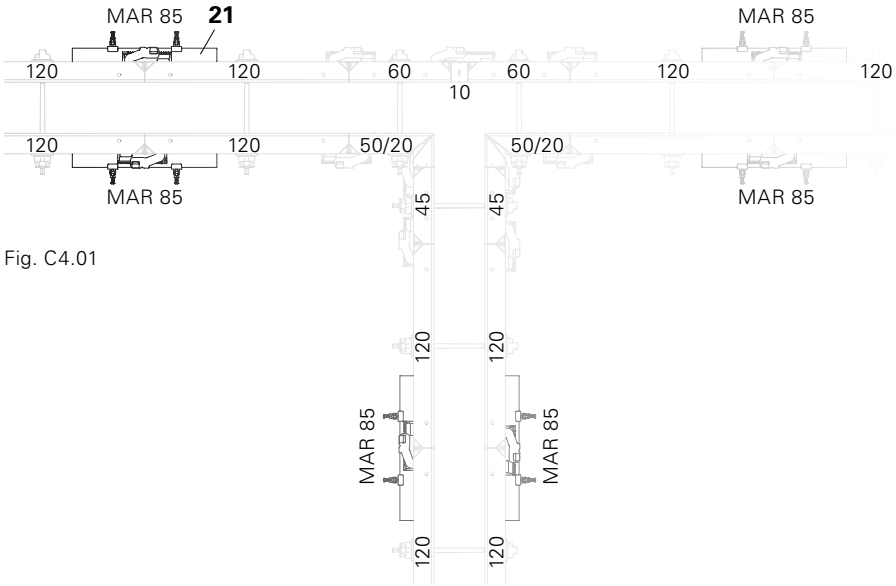


Fig. C4.01

Arrangement of the Alignment Couplers and Compensation Walers

(Fig. C4.01a + C4.01b)

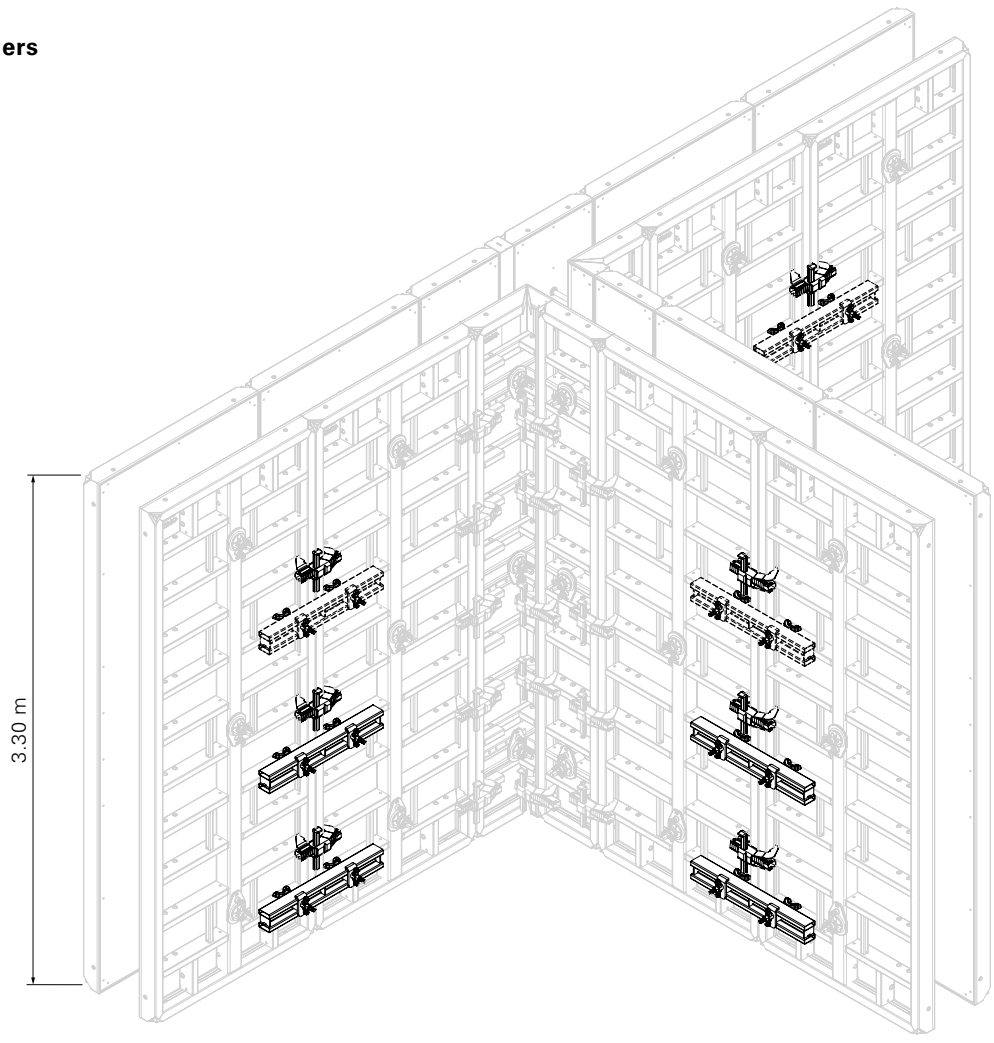


Fig. C4.01a

C4 Panel Connections following 90° T-junctions

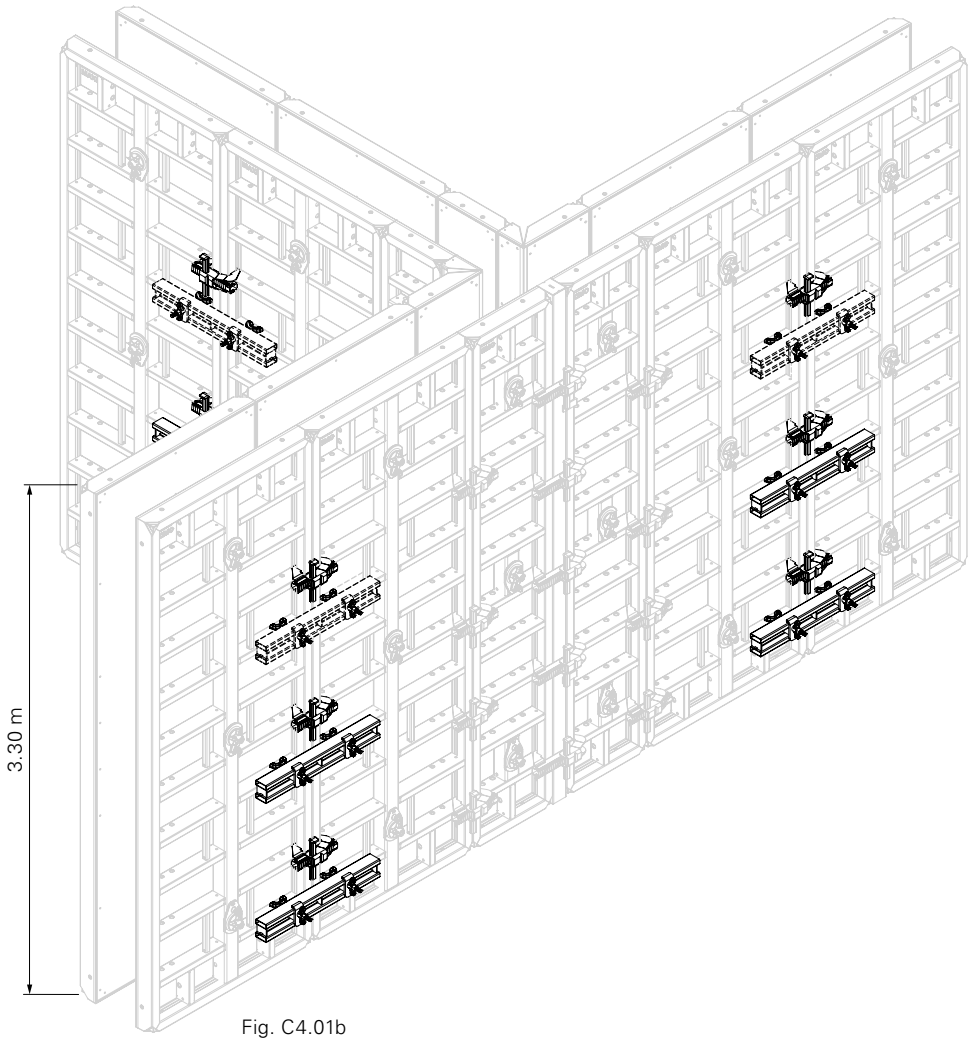


Fig. C4.01b

Tension and Compression Brace MX 15-40 / MX 15-100

With a panel height of 3.30 m, the top tie is not required if a Tension and Compression Brace MX 15-40 or MX 15-100 is used.
The panel is braced through the Tension and Compression Brace (70).

Panel height 330 cm:
setting dimension = wall thickness.

Preparation and assembly of the Tension and Compression Brace, see Section A9.

Close open tie holes on the form-lining by means of Plugs MXM 18, Item no. 125099.

Always mount platforms and brackets on the side of the securing hook (70.1) – here the closing formwork.

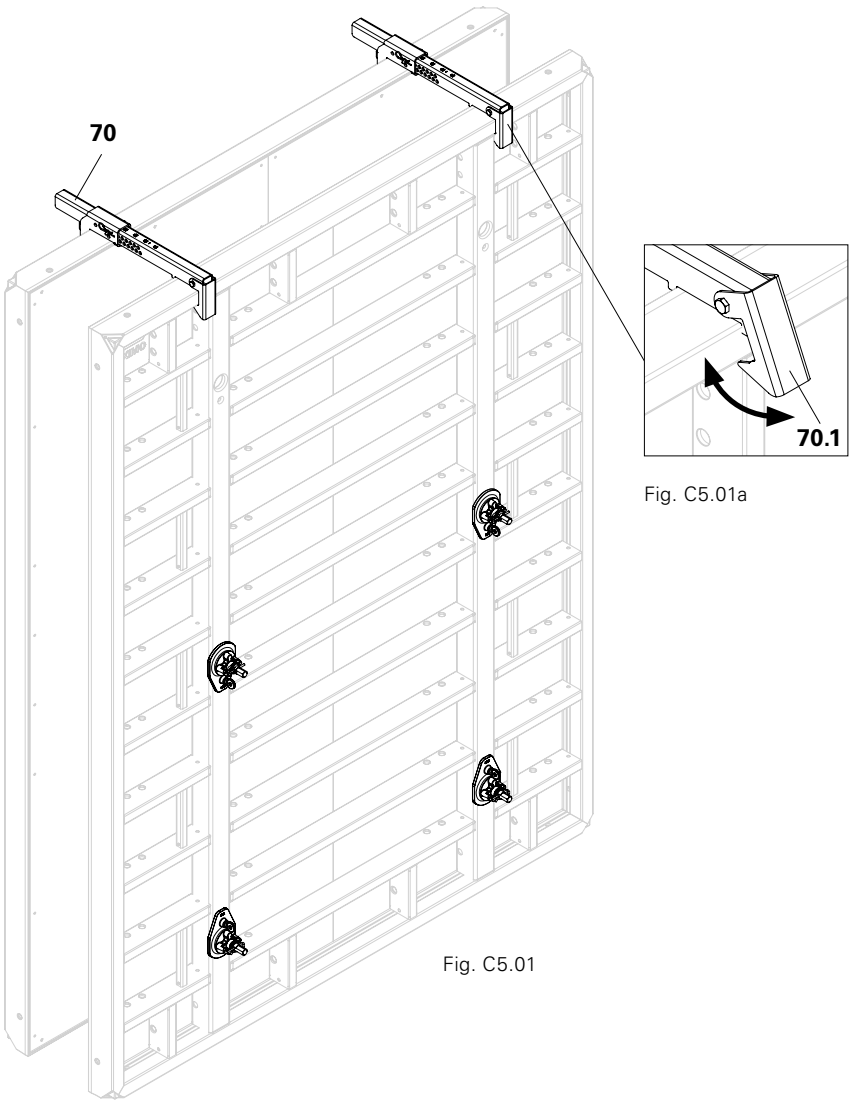


Fig. C5.01a

Fig. C5.01

Wall Thickness Compensator WDA MX 330

Length compensation up to 10 cm.

Components

20 Alignment Coupler BFD	4x
50 WDA MX 330 x ... or timber	1x

No ties required!

The lenght is compensated with Wall Thickness Compensator MX or using timber which has been cut to size (50). Note: number and arrangement of the BFD Alignment Couplers (20).
(Fig. C6.01)

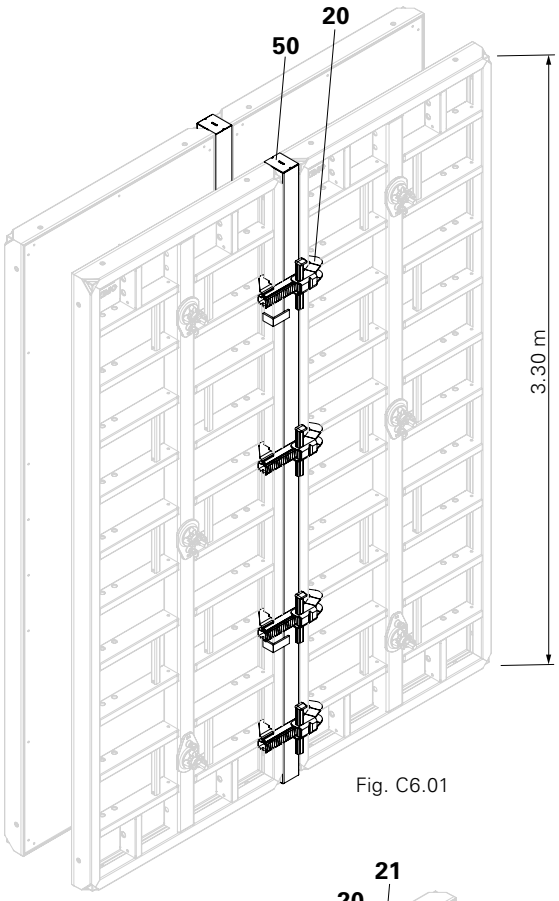


Fig. C6.01

Filler Profile TPP

Length compensation from 20 to 36 cm.

- Perm. fresh concrete pressure: 80 kN/m² for: b ≥ 20 and b < 30 mm.
- Perm. fresh concrete pressure: 60 kN/m² for: b ≥ 30 and b ≤ 36 mm.

Components

20 Alignment Coupler BFD	6x
21 Compensation Waler MAR 85	3x
51 Plywood filler 21 mm	1x
52 Filler Profile TPP	2x

When anchoring, ensure that the tie forces are transferred centrally through the Compensation Waler MAR 85 (21) to the adjacent panels.
(Fig. C6.02b)

Installation (Fig. C6.02 + C6.02a)

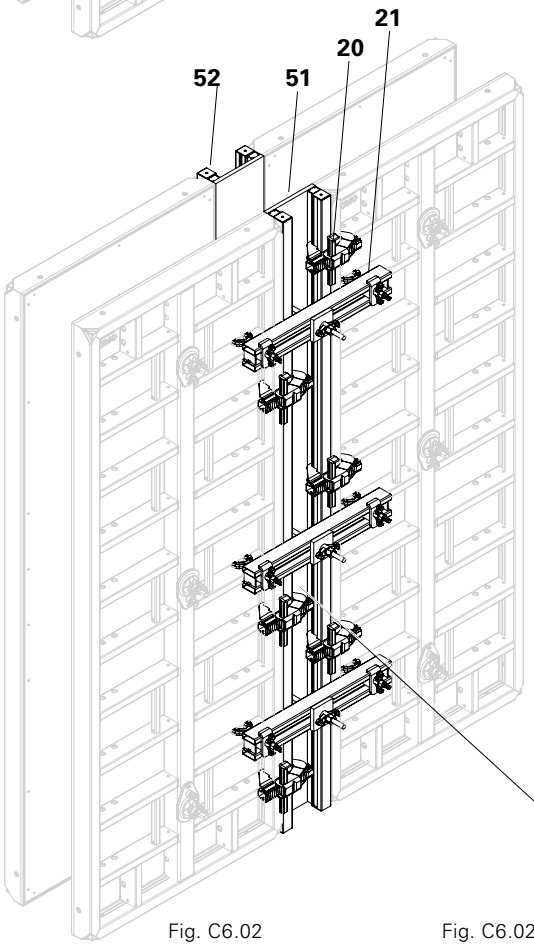


Fig. C6.02

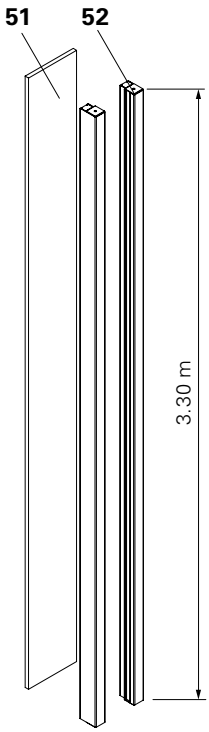


Fig. C5.02a

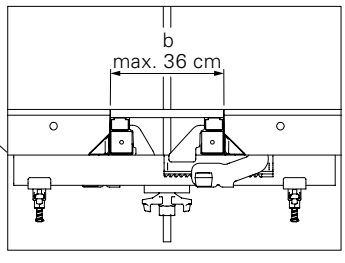


Fig. C6.02b

Stopend Formwork with Panel MX 18, 330 x 30

As Stopend Panel (121) for 30 cm wall thickness.
(Fig. C7.01)

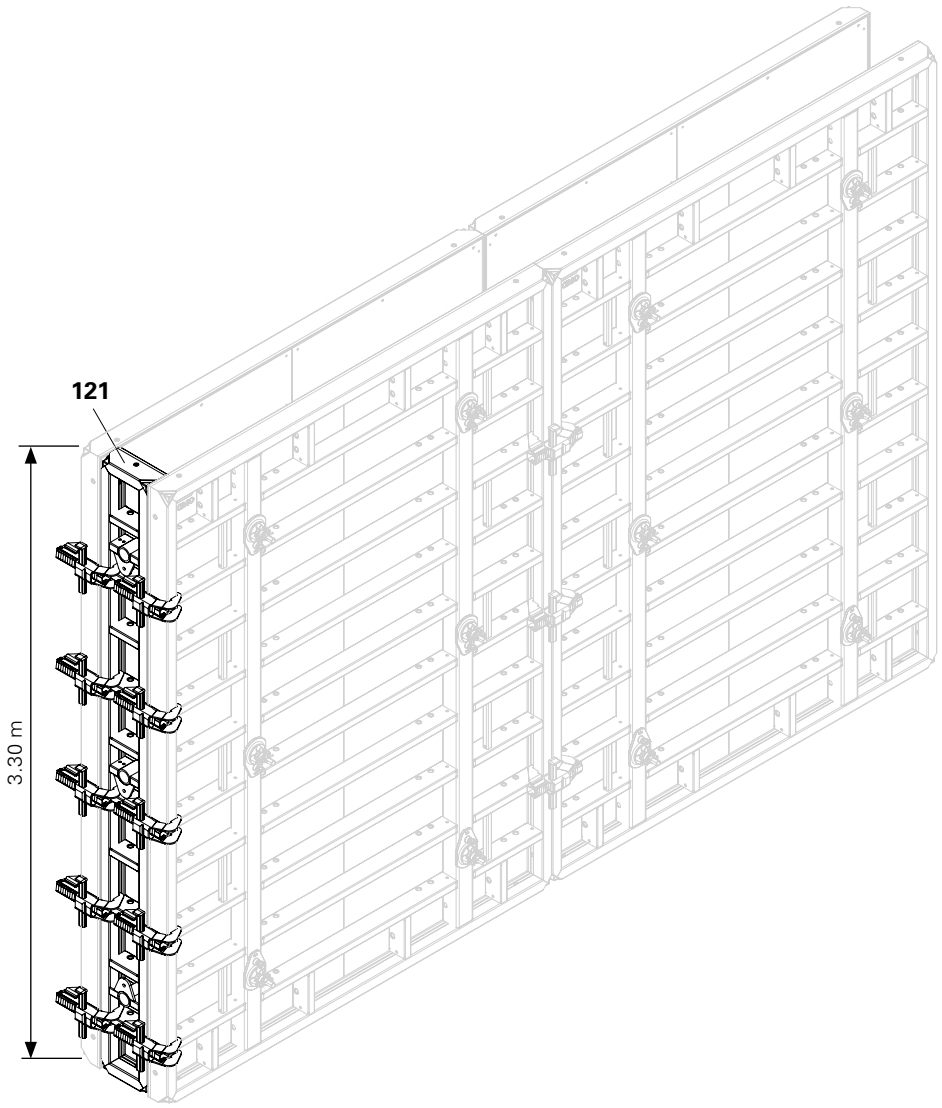


Fig. C7.01

Stopend Formwork with timber and filler plywood

For walls of any thickness.

The fresh concrete pressure of the stopend formwork is transferred to the MAXIMO Panels via the stopend ties and Waler 85.

With Panel MX 18, 330 x 120 at the end of the wall.
(Fig. C7.02 + C7.03)

Also valid for the following panels:
MXI MX 18, 330 x 30
MXI MX 18, 330 x 45
MXI MX 18, 330 x 60
MXI MX 18, 330 x 90

Connecting parts

21	Compensation Waler MAR 85 / alternatively: Waler 85	4x
23	Wingnut Pivot Plate DW 15	14x
25	Tie Rod DW 15	3x
26	Timber	2x
27	Top Tie Bracket-2 AH	6x
28	Stopend Tie TS	8x
51	Plywood filler 21 mm	1x

– Compensation Waler MAR 85 (21) with Stopend Tie (28) and Wingnut Pivot Plate (23), see Fig. C7.03b.
– Top Tie Bracket-2 AH with Tie Rod (25) and Wingnut Pivot Plate (23), see Fig. C7.03a.

With Panel MX 18, 330 x 240 at the end of the wall.
(not shown)

Connecting parts

21	Compensation Waler MAR 85 / alternatively: Waler 85	4x
23	Wingnut Pivot Plate DW 15	8x
26	Timber	2x
28	Stopend Tie TS	8x
51	Plywood filler 21 mm	1x

Compensation Waler MAR 85 (21) with Stopend Tie (28) and Wingnut Pivot Plate (23), see Fig. B6.03b.

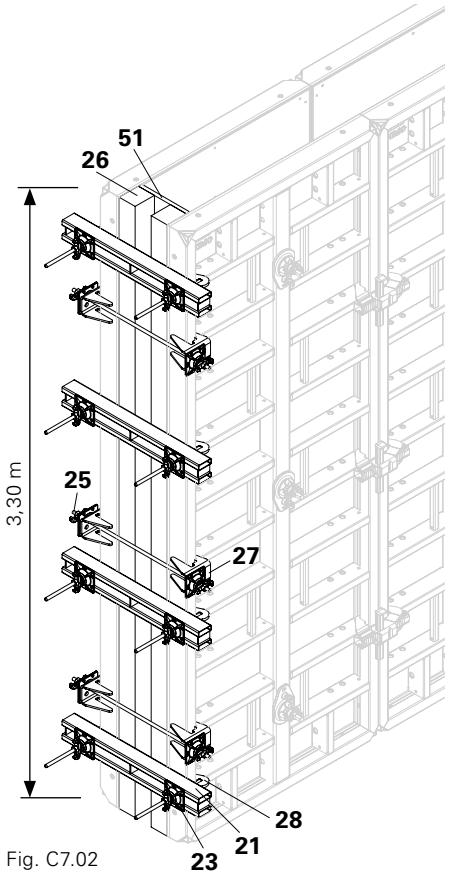


Fig. C7.02

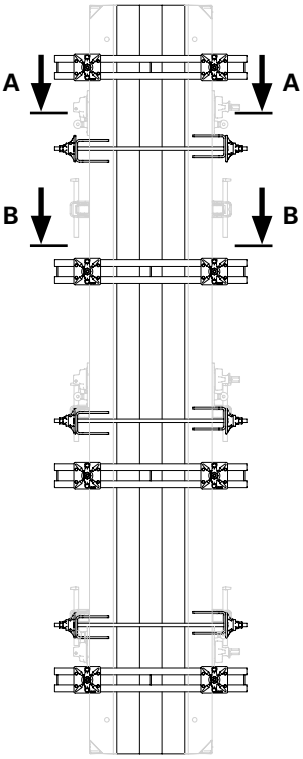


Fig. C7.03

A - A

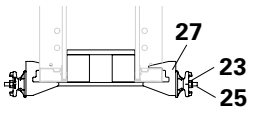


Fig. C7.03a

B - B

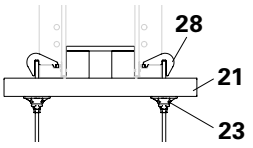


Fig. C7.03b

Extension Guidelines

Horizontal pre-assembly up to H = 6.60 m

Swivel nuts of the tie points must be mounted on the primary formwork!

Panel connections
For height extension units
– H < 6.60 m, Alignment Couplers BFD (20) are to be used on the panel joints. (Fig. C8.01c)
– H = 6.60 m, Alignment Couplers BFD (20) and Compensation Walers MAR 85 (21) are to be used on the panel joints. (Fig. C8.01a + C8.01b)

Assembly
1. The assembly surface must be level.
2. Place timbers or planks in position as support.
3. Pre-assemble extension units in a horizontal position, with the form-lining facing downwards.

MX 18, 330 x 60 / 90 / 120

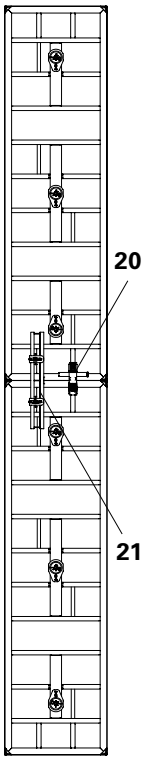


Fig. C8.01a

MX 18, 330 x 240

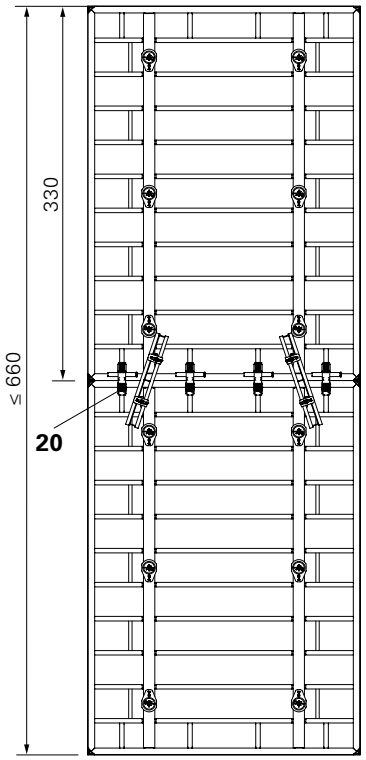


Fig. C8.01b

MX 18, 330 x 240

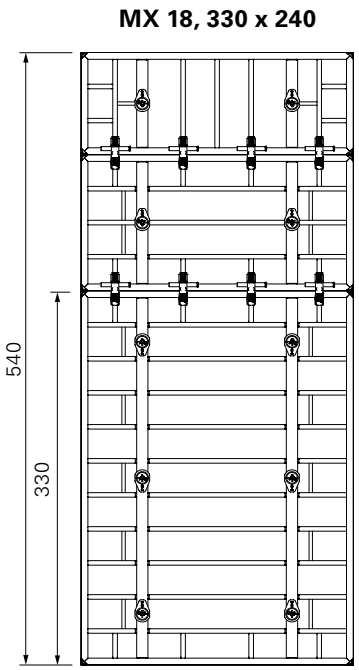


Fig. C8.01c

Erection with the crane
(Fig. C8.02)

– **Do not exceed the permissible load-bearing capacity of the MAXIMO Lifting Hook and crane!**
– **Note: Instructions for Use for the MAXIMO Lifting Hook 1.5 t!**

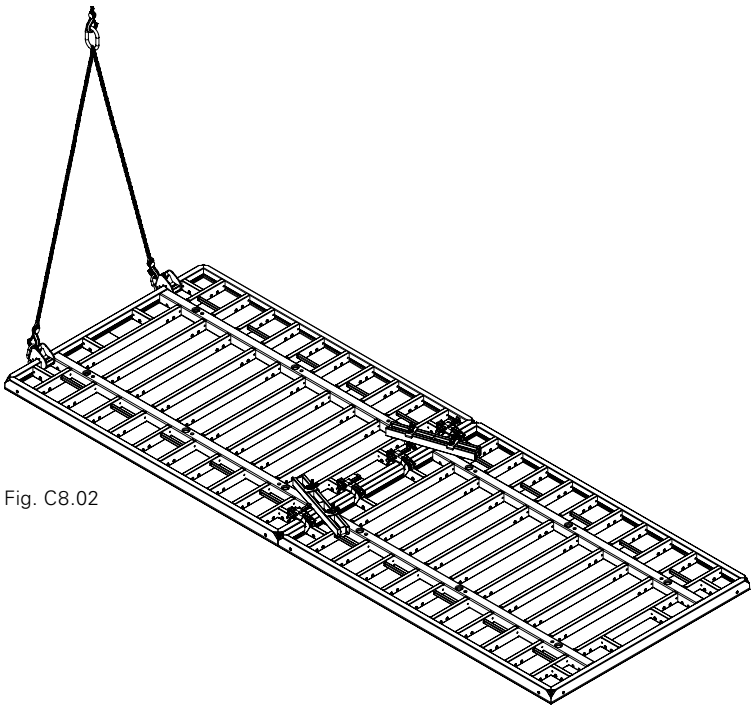


Fig. C8.02

Extension Guidelines

Horizontal pre-assembly up to H = 7.20 m

Swivel nuts of the tie points must be mounted on the primary formwork!

Panel connections
For extension units H > 6.00 m and H ≤ 7.20 m, Alignment Couplers BFD (20) and Compensation Walers MAR 85 (21) are to be used on panel joints. (Fig. C8.03a + C8.03b)

Assembly
1. The assembly surface must be level.
2. Place timbers or planks in position as support.
3. Pre-assemble extension units in a horizontal position, with the form-lining facing downwards.

MX 18, 330 x 240

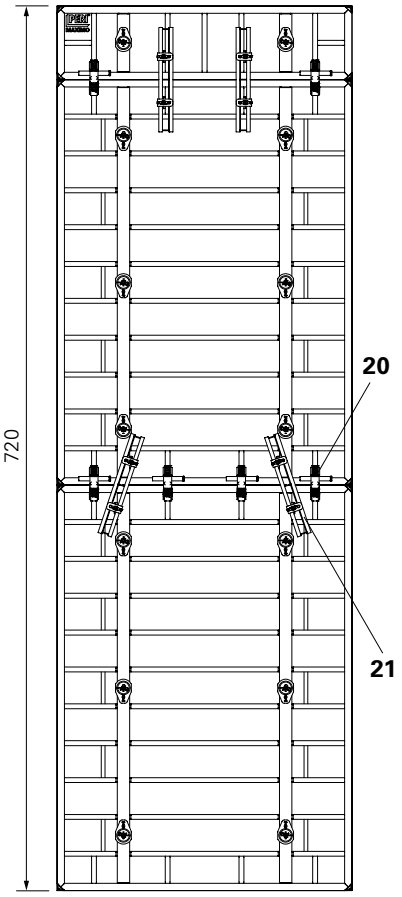


Fig. C8.03a

MX 18, 330 x 240, horizontal panel

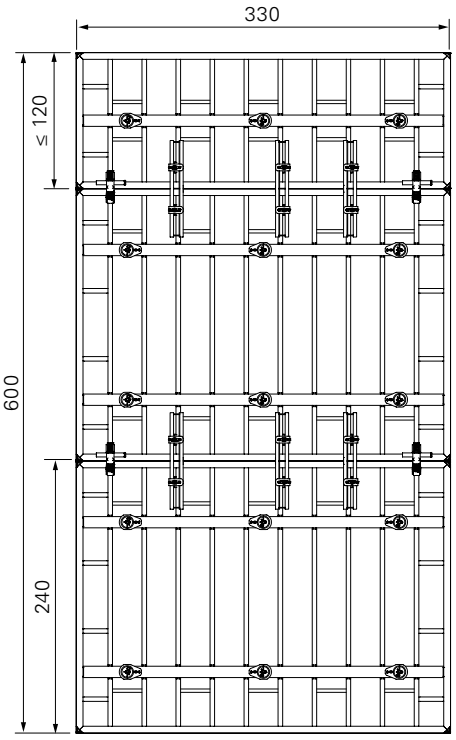


Fig. C8.03b

Erection with the crane
(Fig. C8.04)

- **Do not exceed the permissible load-bearing capacity of the MAXIMO Lifting Hook and crane!**
- **Note: Instructions for Use for the MAXIMO Lifting Hook 1.5 t!**

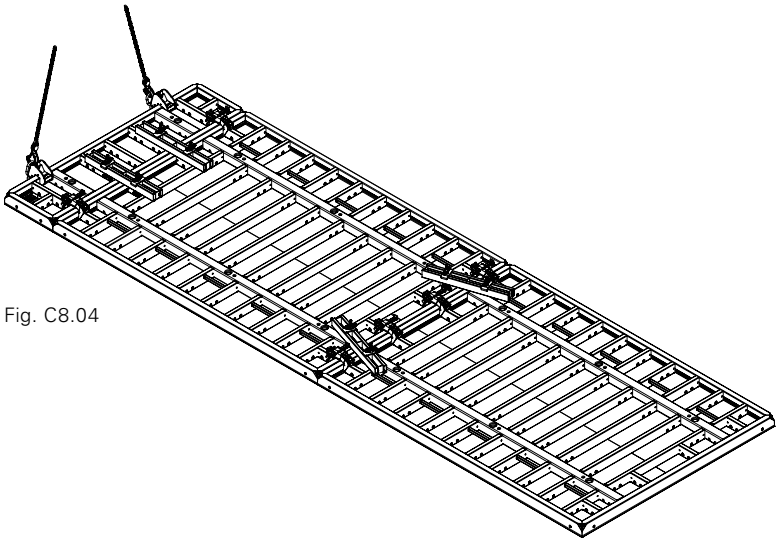


Fig. C8.04

Magnet Cone MX 18

Item no. 127696 (Fig. D1.01)

When using the Magnet Cone MX 18, the inclined position of the tie is redcued to 2.5°.

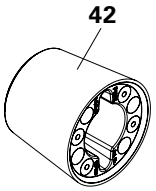


Fig. D1.01

Installation

Before installing the Magnet Cone MX 18, ensure that
- the magnetic cone was completely submerged in a release agent and has been allowed to drain off, and
- the contact surfaces of the magnet are clean.

The Magnet Cone MX 18 (42)
- can be used on one side or on both sides without a spacer tube,
- is held in position at the tie point with magnets.

Installation on one side
(Fig. D1.02a)

Installation on both sides
(Fig. D1.02b)

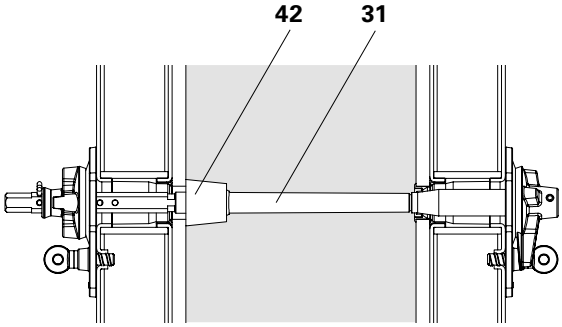


Fig. D1.02a

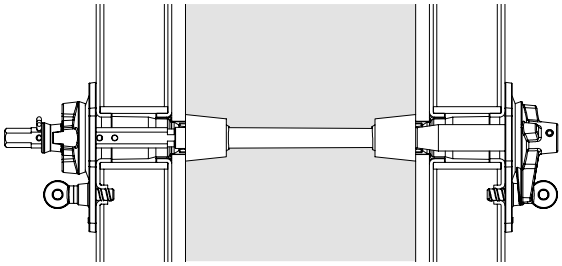


Fig. D1.02b

Removal

- Remove concrete slurry in the Magnet Cone – shortly after striking.
- Remove by means of Magnet Cone Spanner MX 15/18 (43), Item no. 126696. (Fig. D1.03)

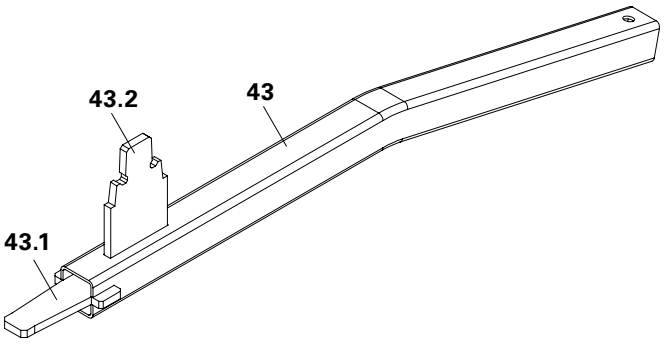


Fig. D1.03

Dismantling

1. Clean hole using the pointed side of the wrench (43.1). Not shown.

2. Insert pointed side of wrench (43.1) into the guide groove of the Magnet Cone from the right, and clean the slot. (Fig. D1.04a)

3. Insert pointed side of wrench (43.1) into the guide groove of the Magnet Cone from the left, and clean the slot. (Fig. D1.04b)

   → Hole and guide grooves of the Magnet Cone are free of concrete slurry.

4. Insert tube supports with wings (43.2) into the cleaned openings. (Fig. D1.04c)

5. Turn the Magnet Cone Spanner. (Fig. D1.04d)
   → Magnet Cone MX 18 is screwed out.

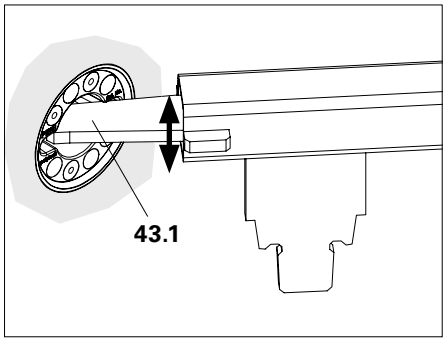


Fig. D1.04a

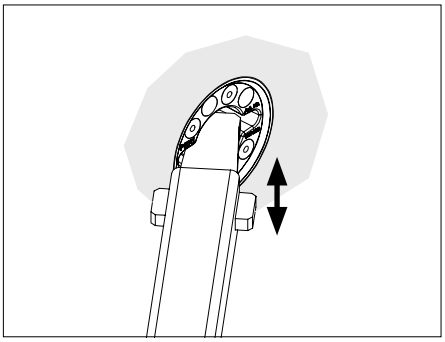


Fig. D1.04b

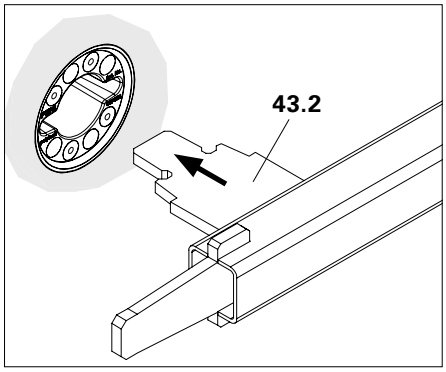


Fig. D1.04c

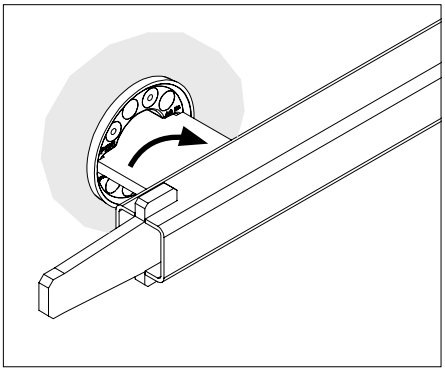


Fig. D1.04d

Closing the cone openings

PERI "DK / SK System" Tie Technology can be used for special requirements such as architectural concrete or waterproof walls – see "PERI Tie Technology" brochure.

Follow the Instructions of Use for concreting cones and the safety data sheet for sealing compounds.

Assembly

1. Apply prepared sealing compound or Repoxal to front conical part of the Concreting Cone.
2. Insert Concreting Cone into the tie hole.
   → Tie hole is closed.

Examples

– Smooth surface with DK Concrete Cone UNI 58/52, Item no. 031643.
– Sealing Compound, Item no. 108136.
(Fig. D1.05)

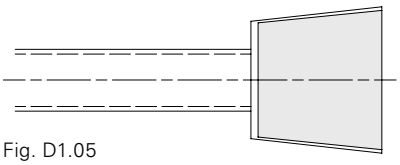


Fig. D1.05

– Recessed surface with DK Concrete Cone DW 15/58-30, Item No. 031550.
– Repoxal, Item no. 108136.
(Fig. D1.06)

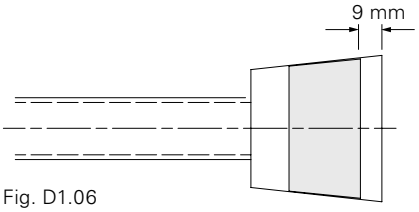


Fig. D1.06

– Shadow joint with DK Concrete Cone Architectural Concrete DW 15/58-52, Item no. 031641.
– Sealing Compound, Item no. 108136.
(Fig. D1.07)

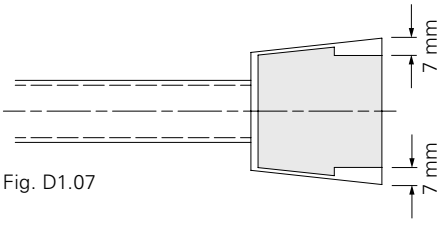


Fig. D1.07

D2 90° Corners with Inside Corner MXI 18, 270/330 x 60

Wall Thicknesses 15 – 30 cm
Height (H) 2.70 m or 3.30 m

Outside Corner MXA 270/330 x35

Perm. fresh concrete pressure: 80 kN/m²

Components

20	Alignment Coupler BFD
101/121	Panel MX 18, 270/330 x 30
106/126	Panel MX 18, 270/330 x 240
140/142	Wall Thickness Compensator WDA MX or filler timber supplied by contractor ≤ 10 cm
150/158	Outside Corner MXA 270/330 x 35
152/160	Inside Corner MXI 18, 270/330 x 60

Examples
- Wall thickness 15: Fig. D2.01 + D1.06a/c + D2.06b/d
- Wall thickness 17.5: Fig. D2.02 + D1.06a/c + D2.06b/d
- Wall thickness 20: Fig. D2.03 + D1.06a/c + D2.06b/d
- Wall thickness 24 / 25: Fig. D2.04 + D1.06a/c + D2.06b/d
- Wall thickness 30: Fig. D2.05 + D1.06a/c + D2.06b/d

Compensations
Wall thickness 15 + 17.5 cm: external compensation
Wall thickness 20 cm: without compensation
Wall thickness 24 + 25 + 30 cm: external compensation

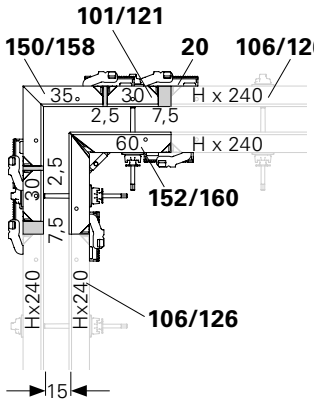


Fig. D2.01

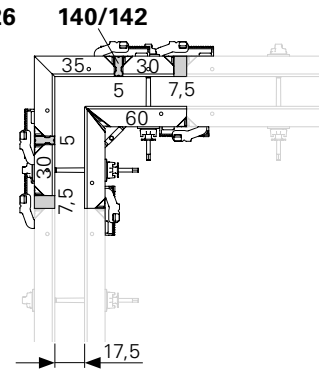


Fig. D2.02

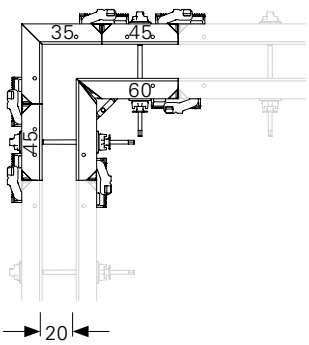


Fig. D2.03

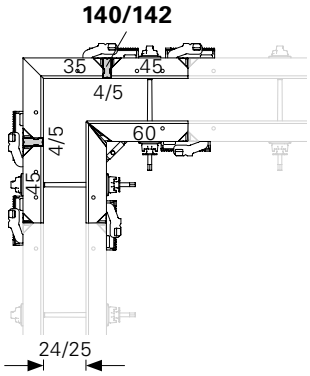


Fig. D2.04

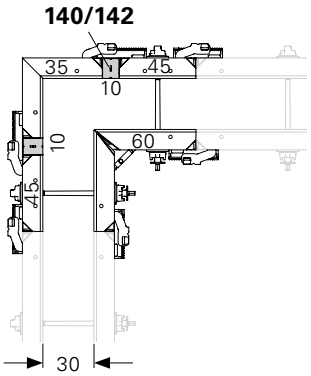


Fig. D2.05

Wall Thicknesses 30 – 40 cm
Height 2.70 m or 3.30 m

Outside Corner MXA 270/330 x 45

Perm. fresh concrete pressure: 80 kN/m²

Components

20	Alignment Coupler BFD
106/126	Panel MX 18, 270/330 x 240
140/142	Wall Thickness Compensator WDA MX or filler timber supplied by contractor ≤ 10 cm
151/159	Outside Corner MXA 270/330 x 45
152/160	Inside Corner MXI 18, 270/330 x 60

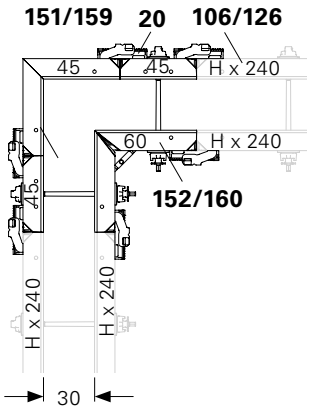


Fig. D2.06

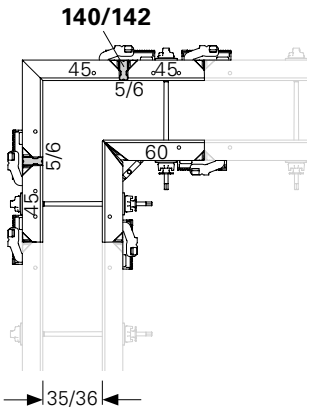


Fig. D2.07

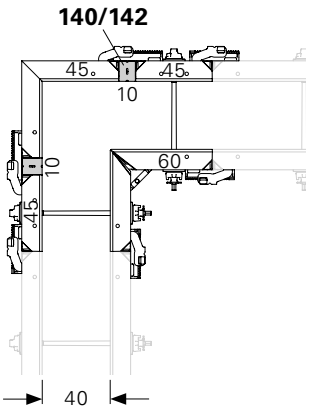


Fig. D2.08

Examples
- Wall thickness 30: Fig. D2.06 + D1.06a/c + D2.06b/d
- Wall thickness 35 / 36: Fig. D2.07 + D1.06a/c + D2.06b/d
- Wall thickness 40: Fig. D2.08 + D1.06a/c + D2.06b/d

Compensations
- Wall thickness 30 cm: without compensation
- Wall thickness 35 + 40 cm: external compensation

D2 90° Corners with Inside Corner MXI 18, 270/330 x 60

Arrangement of the Alignment Couplers
Outside Corner MXA height x 45 / ... x 35

Height 270 cm
(Fig. D2.06a + D2.06b)

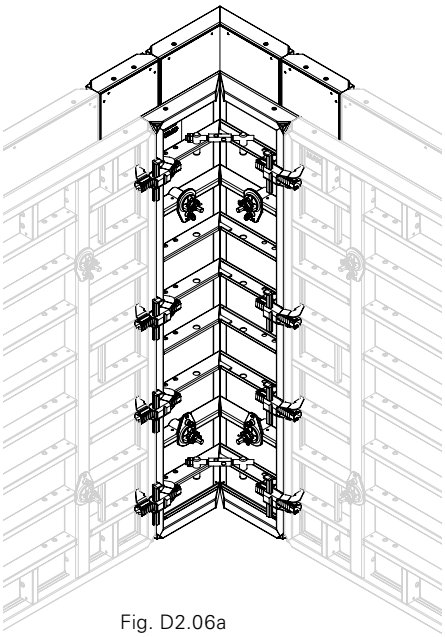


Fig. D2.06a

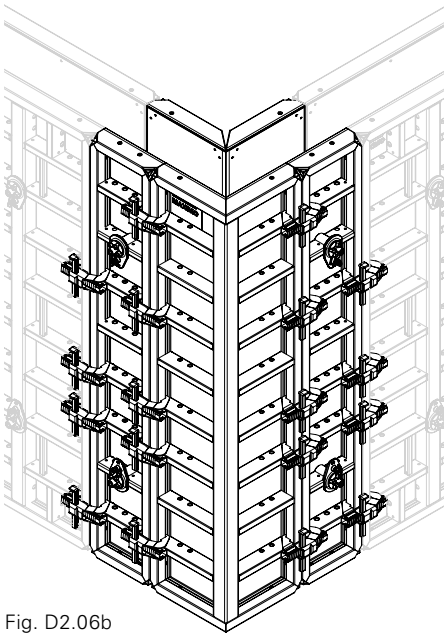


Fig. D2.06b

Height 330 cm
(Fig. D2.06c + D2.06d)

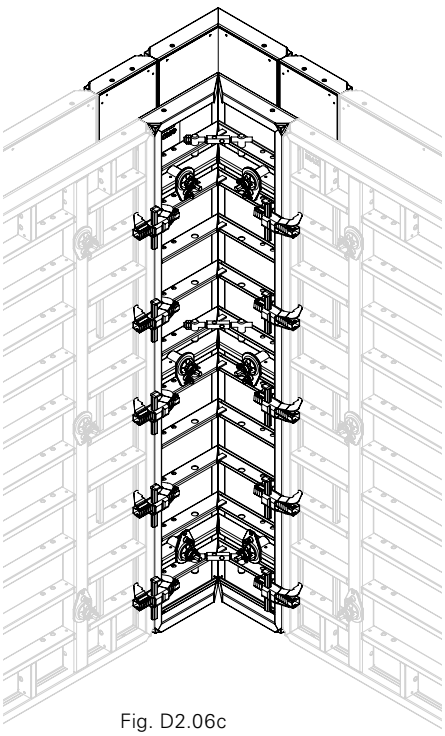


Fig. D2.06c

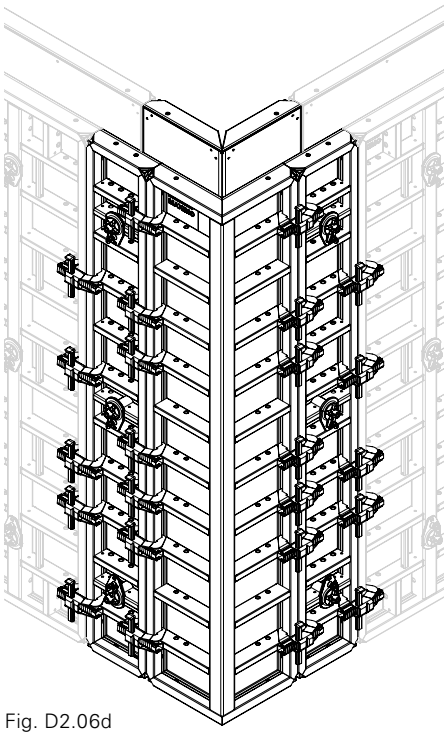


Fig. D2.06d

D2 90° Corners with Inside Corner MXI 18, 270/330 x 60

Wall Thicknesses > 40 – 60 cm
Height (H) 2.70 m / 3.30 m

Outside Corner MXA 270/330 x 45

Perm. fresh concrete pressure: 60 kN/m²

Components

20	Alignment Coupler BFD
21	Compensation Waler MAR 85-3
22	Compensation Waler MAR 170-3
100/120	Panel MXM 18, 270/330 x 60
101/121	Panel MX 18, 270/330 x 30
102/122	Panel MX 18, 270/330 x 45
106/126	Panel MX 18, 270/330 x 240
140/142	Wall Thickness Compensator WDA MX or filler timber supplied by contractor ≤ 10 cm
152/160	Inside Corner MXI 18, 270/330 x 60

Examples
- Wall thickness 45:
  Fig. D2.09 + D2.09a/c + D2.09b/d
- Wall thickness 50:
  Fig. D2.10 + D2.09a/c + D2.09b/d
- Wall thickness 55:
  Fig. D2.11 + D2.09a/c + D2.09b/d
- Wall thickness 60:
  Fig. D2.12 + D2.09a/c + D2.09b/d

Compensations
Wall thickness:
without compensation
Wall thickness 50 + 55 cm:
external compensation
Wall thickness 60 cm:
without compensation

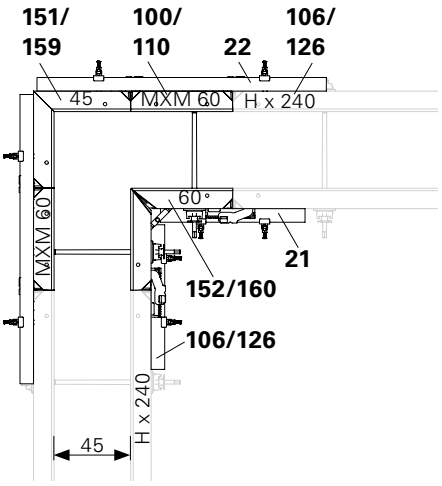


Fig. D2.09

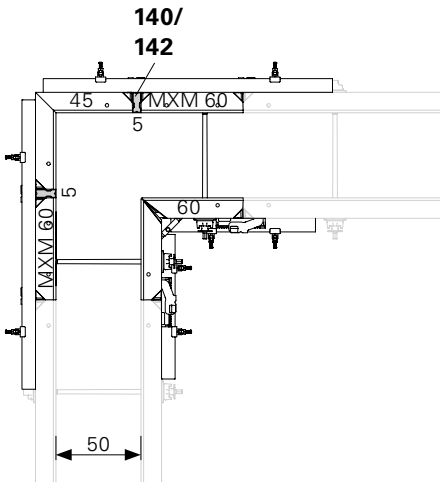


Fig. D2.10

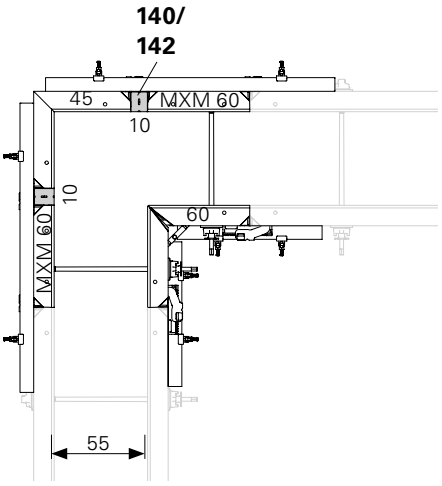


Fig. D2.11

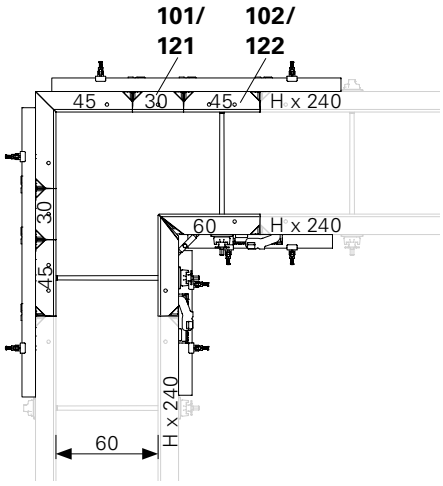


Fig. D2.12

D2 90° Corners with Inside Corner MXI 18, 270/330 x 60

Arrangement of the Alignment Couplers and Compensation Walers

Height 270 cm
(Fig. D2.09a + D2.09b)

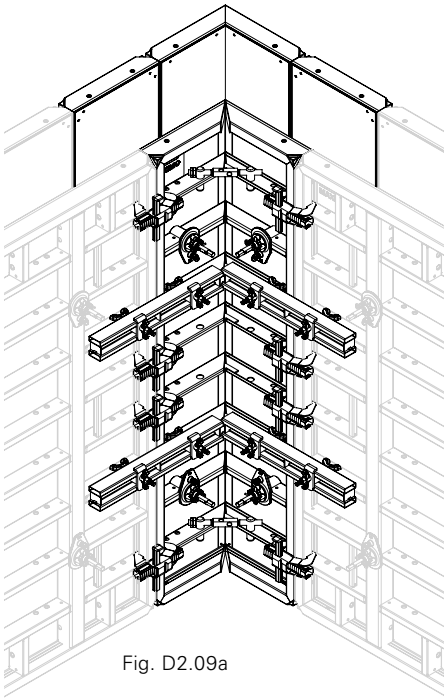


Fig. D2.09a

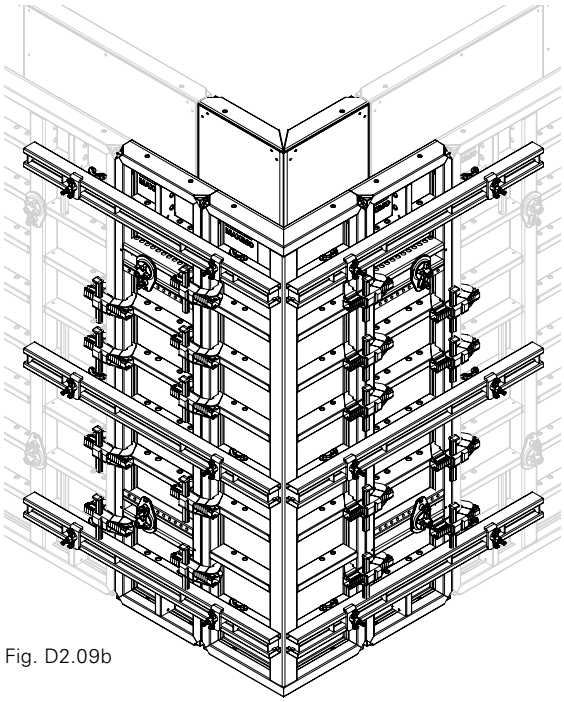


Fig. D2.09b

Height 330 cm
(Fig. D2.09c + D2.09d)

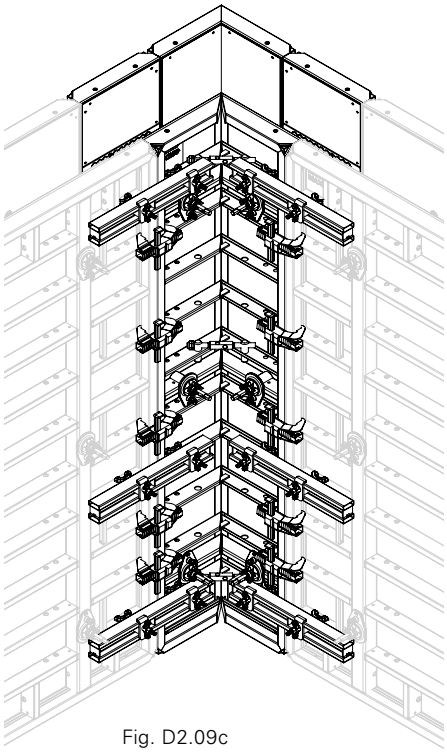
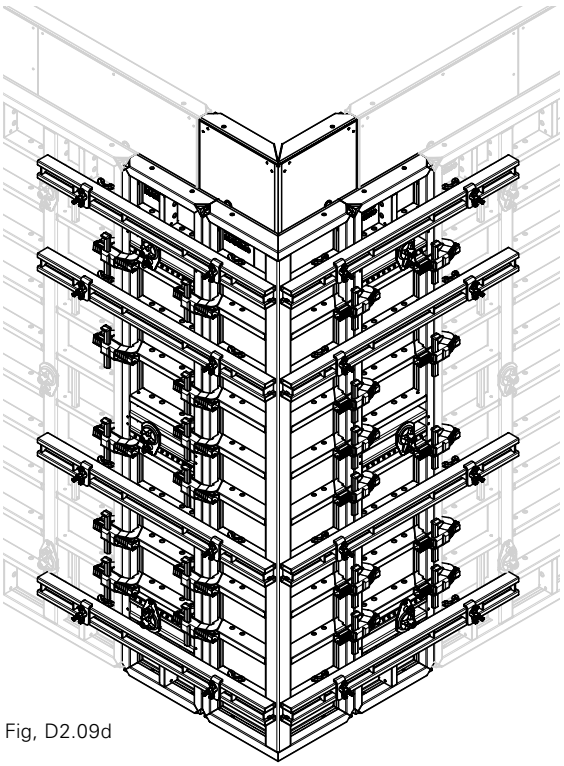


Fig. D2.09c



Fig, D2.09d

D3 90° T-junctions with Inside Corner MXI 18, 270/330 x 60

Wall Thicknesses 15 – 40 cm
Height (H) 2.70 m or 3.30 m

Perm. fresh concrete pressure: 80 kN/m²

Components

20	Alignment Coupler BFD
22	Compensation Waler MAR 170-3
102/122	Panel MX 18, 270/330 x 45
103/123	Panel MX 18, 270/330 x 60
106/126	Panel MX 18, 270/330 x 240
140/142	Wall Thickness Compensator WDA MX 270/330 or filler timber supplied by contractor ≤10 cm
152/160	Inside Corner MXI 18, 270/330 x 60

Assembly

1. Form T-junction with Inside Corner MXI 18, H x 60 (152/160).
2. Form the opposite straight wall with Panel MX 18, H x 45 (102/122) or MX 18, H x 60 (103/123).
3. Install one Panel MX 18, H x 45 (102/122) each on the right and on the left.
4. Install Wall Thickness Compensator (140/142) – according to the wall thickness, if necessary.
5. On the straight wall, install Compensation Waler MAR 170 (22) centrally to the outgoing wall.

Attach the double hook of the Compensation Waler to the middle holes. (Fig. D3.08)

Examples

– Wall thickness 15:
  Fig. D3.01 + D3.05a/c + D3.05b/d
– Wall thickness 17.5:
  Fig. D3.02 + D3.05a/c + D3.05b/d
– Wall thickness 20:
  Fig. D3.03 + D3.05a/c + D3.05b/d
– Wall thickness 24/25:
  Fig. D3.04 + D3.05a/c + D3.05b/d
– Wall thickness 30:
  Fig. D3.05 + D3.05a/c + D3.05b/d
– Wall thickness 35/36:
  Fig. D3.06 + D3.05a/c + D3.05b/d
– Wall thickness 40:
  Fig. D3.07 + D3.05a/c + D3.05b/d

Compensations

– Wall thickness 15 + 30 cm:
  without compensation
– Wall thickness 17.5 + 20 + 24 + 25 + wall thickness 35 + 36 + 40 cm:
  external compensation

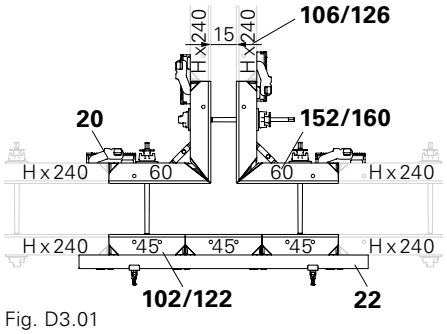


Fig. D3.01

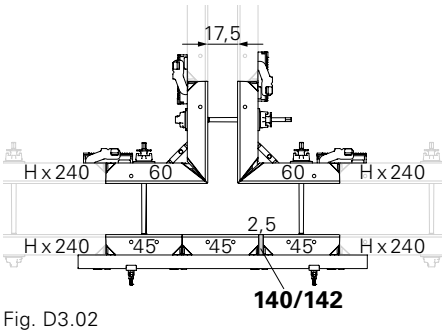


Fig. D3.02

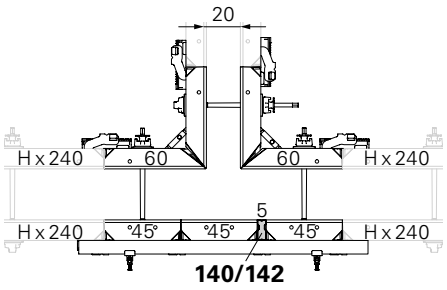


Fig. D3.03

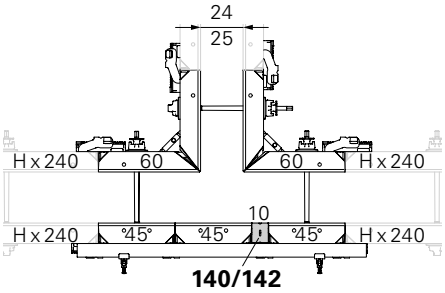


Fig. D3.04

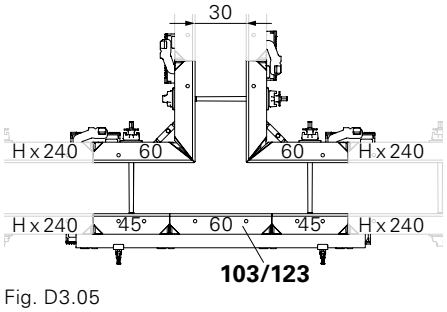


Fig. D3.05

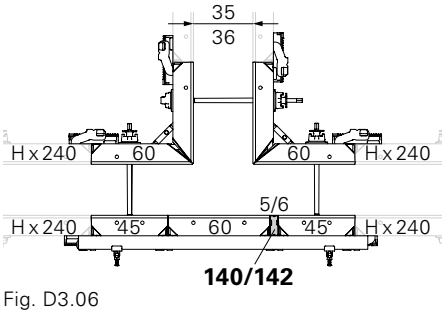


Fig. D3.06

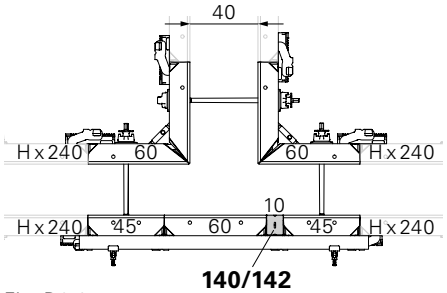


Fig. D3.07

„X“
from Fig. D3.05b

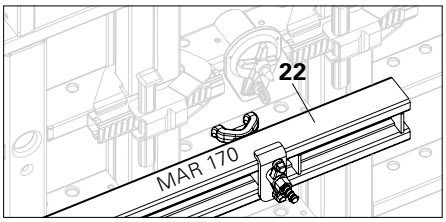


Fig. D3.08

With two Wall Thickness Compensators WDA MX (not shown): install one WDA MX each on the right and left of the middle panel.

D3 90° T-junctions with Inside Corner MXI 18, 270/330 x 60

Arrangement of the Alignment Couplers
Outside Corner MXA height x 45 /... x 35

Height 270 cm
(Fig. D3.05a + D3.05b)

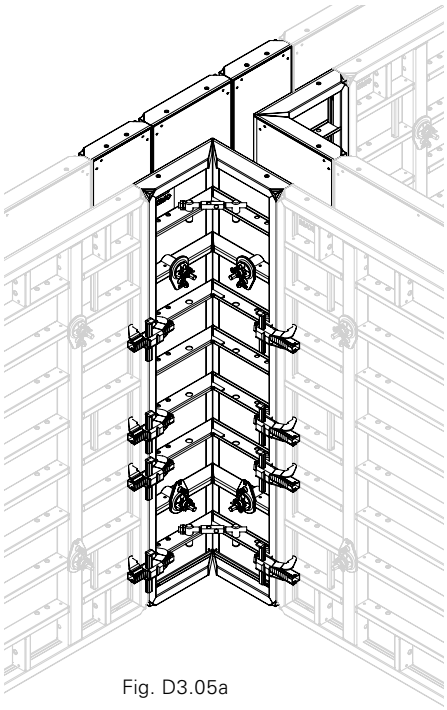


Fig. D3.05a

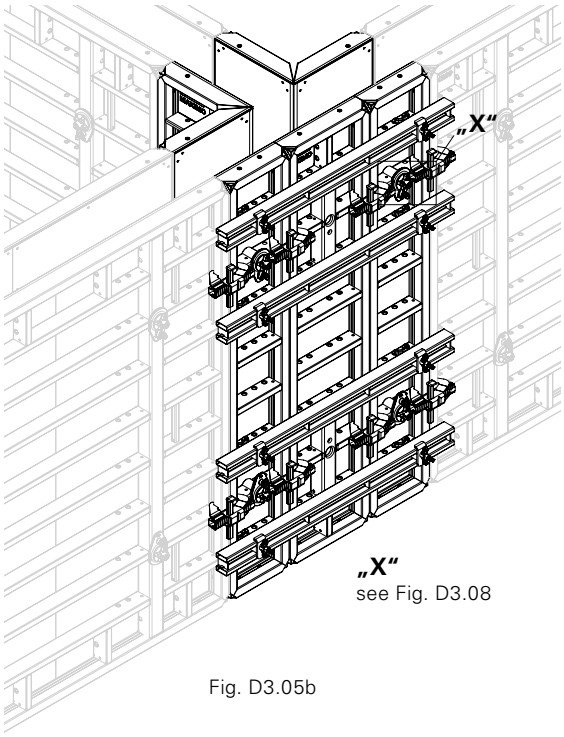


Fig. D3.05b

Height 330 cm
(Fig. D3.05c + D3.05d)

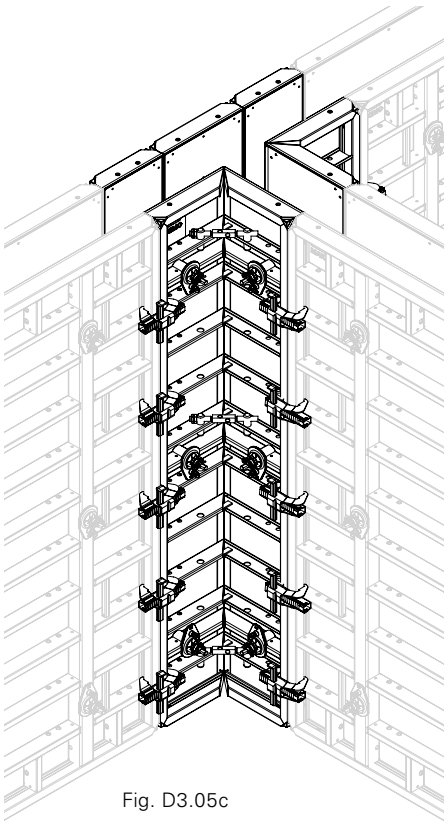


Fig. D3.05c

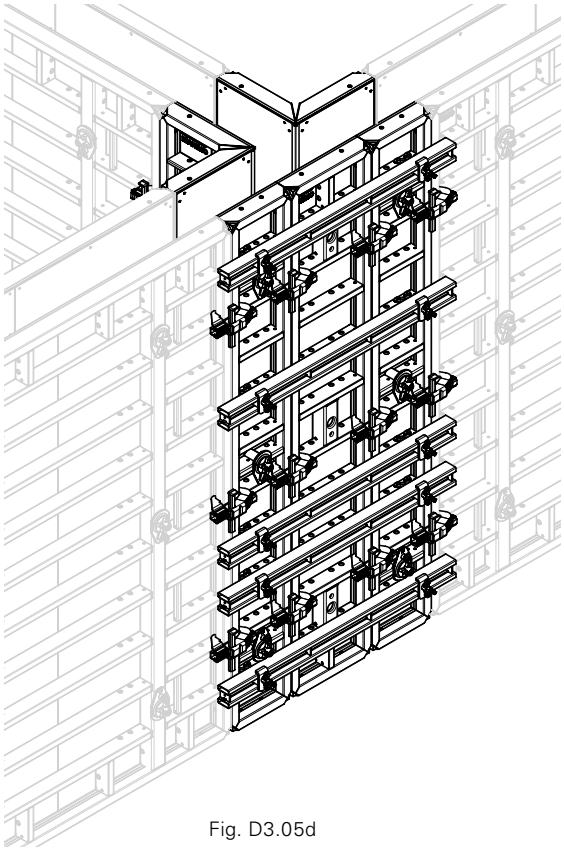


Fig. D3.05d

D3 90° T-junctions with Inside Corner MXI 18, 270/330 x 60

Wall Thicknesses > 40 – 60 cm
Height (H) 2.70 m or 3.30 m

Perm. fresh concrete pressure: 60 kN/m²

Components

20	Alignment Coupler BFD
23	Wingnut Pivot Plate DW 15
25	Tie Rod DW 15
29	Steel Waler SRU 197 U120
102/122	Panel MX 18, 270/330 x 45
103/123	Panel MX 18, 270/330 x 60
106/126	Panel MX 18, 270/330 x 240
140/142	Wall Thickness Compensator WDA MX 270/330 or filler timber supplied by contractor ≤ 10 cm
152/160	Inside Corner MXI 18, 270/330 x 60

Assembly
1. Form T-junction with Inside Corner MXI 18, H x 60 (152/160).
2. Form the opposite straight wall with Panel MX 18, H x 45 (102/122) or MX 18, H x 60 (103/123).
3. Install one Panel MX 18, H x 60 (103/123) each on the right and left.
4. Install Wall Thickness Compensator (140/142) – according to the wall thickness, if necessary.
5. On the straight wall, install the Steel Waler (25) with Hook Tie (24) and Wingnut Pivot Plate (23) centrally to the T-junction.

Examples
– Wall thickness 45:
  Fig. D3.09 + D3.09a/c + D3.09b/d
– Wall thickness 50:
  Fig. D3.10 + D3.09a/c + D3.09b/d
– Wall thickness 55:
  Fig. D3.11 + D3.09a/c + D3.09b/d
– Wall thickness 60:
  Fig. D3.12 + D3.09a/c + D3.09b/d

Compensations
Wall thickness 45 cm + 60 cm:
without compensation
Wall thickness 50 cm + 55 cm:
external compensation

With two Wall Thickness Compensators WDA MX (not shown):
install one WDA MX each on the right and left of the middle panel.

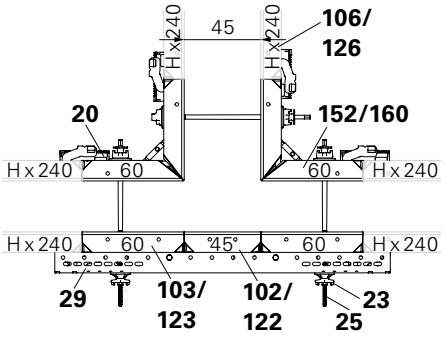


Fig. D3.09

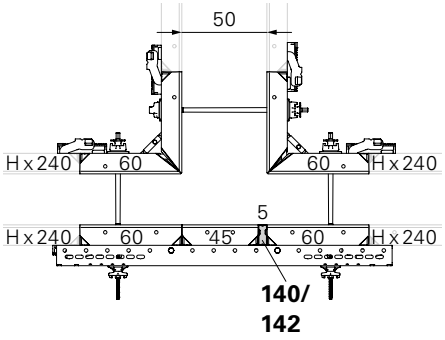


Fig. D3.10

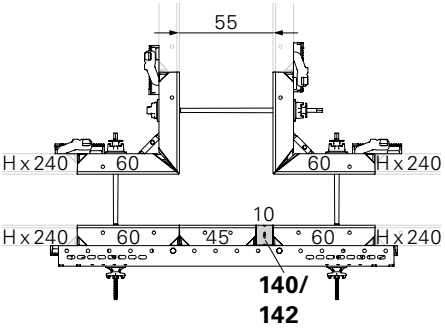


Fig. D3.11

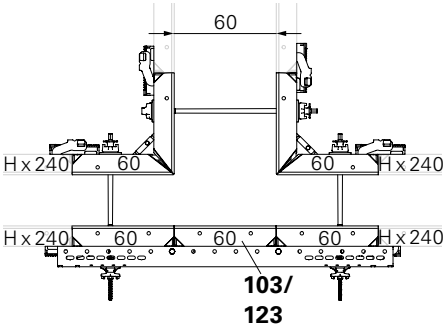


Fig. D3.12

D3 90° T-junctions with Inside Corner MXI 18, 270/330 x 60

Arrangement of the Alignment Couplers
Outside Corner MXA height x 45 /... x 35

Height 270 cm
(Fig. D3.09a + D3.09b)

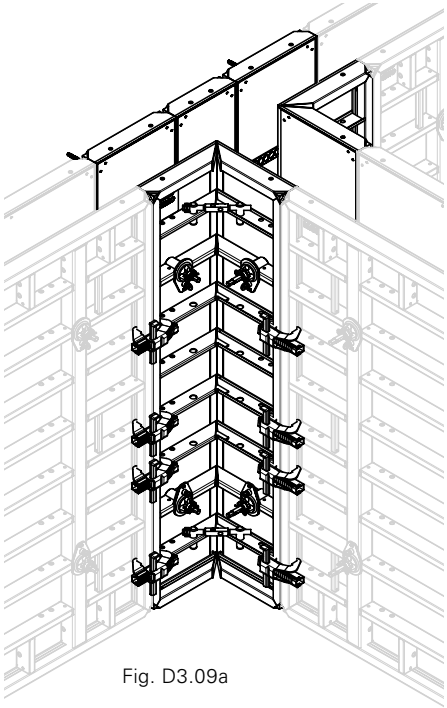


Fig. D3.09a

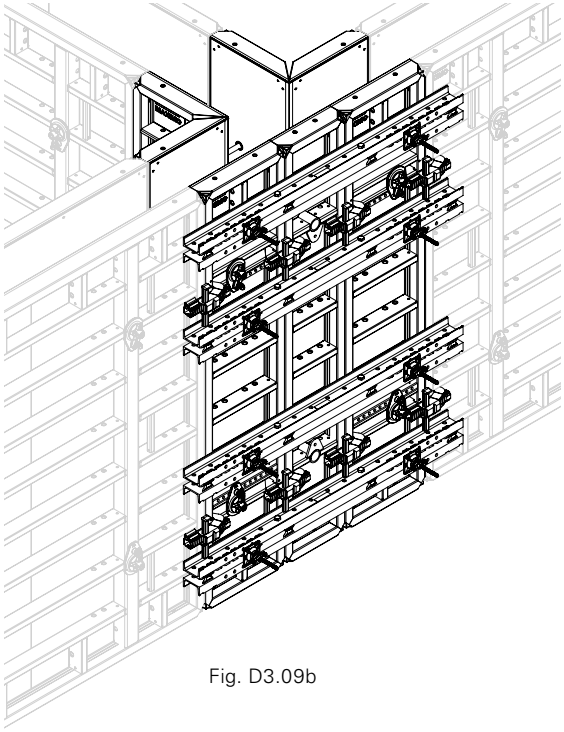


Fig. D3.09b

Height 330 cm
(Fig. D3.09c + D3.09d)

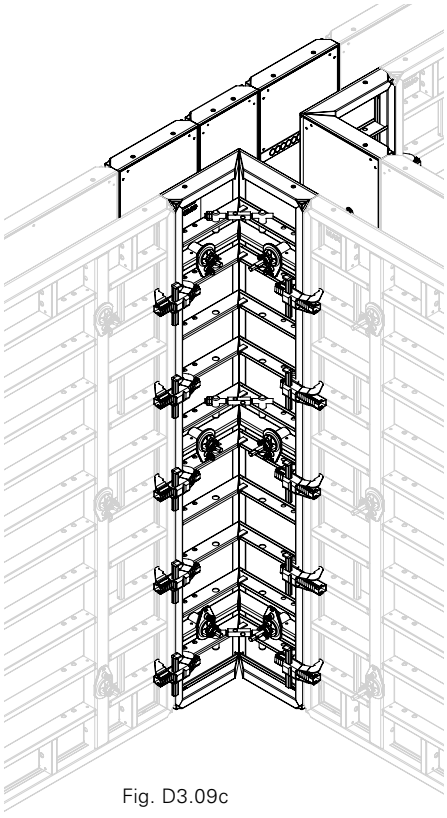
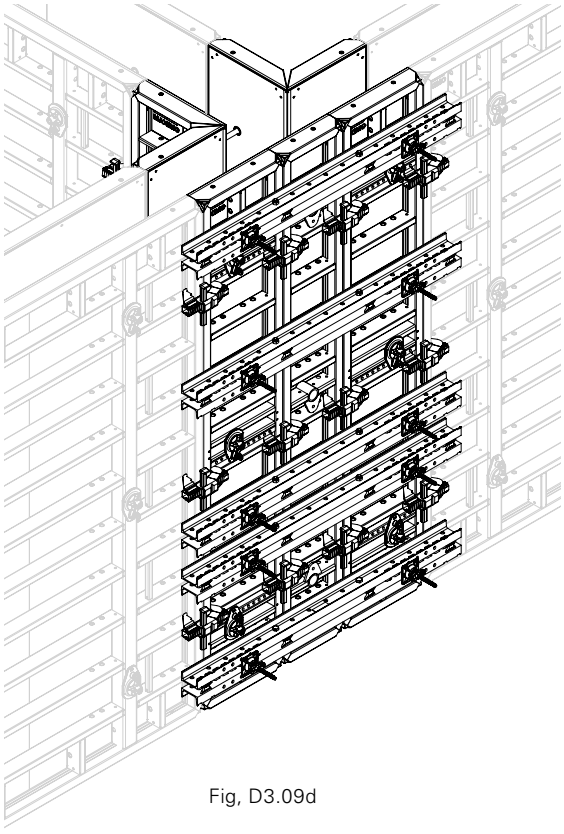


Fig. D3.09c



Fig, D3.09d

D4 90° Corners for 80 cm Wall Thickness

Inside Corner MXI 18, 270/330 x 50/20

Outside Corner MXA 18, 270/330 x 45

Perm. fresh concrete pressure: 60 kN/m²

Components

19	Waler Stop
20	Alignment Coupler BFD
23	Wingnut Pivot Plate DW 15
24	Hook Tie DW 15/400
25	Tie Rod DW 15
29	Steel Waler SRU 247 U120
36	Tie Rod DW 20
37	Spacer Tube DR 28
38	DK Sealing Cone DW 30/55
39	Wingnut Pivot Plate DW 20
44	Wingnut DW 15
48	Wedge KZ
49	Tie Yoke SW
101/121	Panel MX 18, 270/330 x 30
102/122	Panel MX 18, 270/330 x 45
103/123	Panel MX 18, 270/330 x 60
106/126	Panel MX 18, 270/330 x 240
140/142	Wall Thickness Compensator WDA MX 270/330 or filler timber supplied by contractor ≤ 10 cm
151/159	Outside Corner MXA 18, 270/330 x 45
153/161	Inside Corner MXI 18, 270/330 x 60

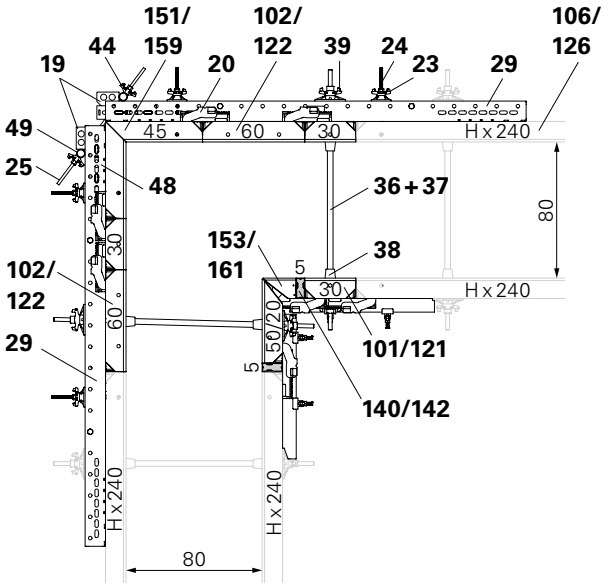


Fig. D4.01

Examples

– Wall thickness 80 / Height 270:
  Fig. D4.01 + D4.01a + D4.01b.
– Wall thickness 80 / Height 330:
  Fig. D4.01 + D4.01c + D4.01d.

D4 90° Corners for 80 cm Wall Thickness

Arrangement of the Alignment Couplers and Steel Walers

Height 270 cm
(Fig. D4.01a + D4.01b)

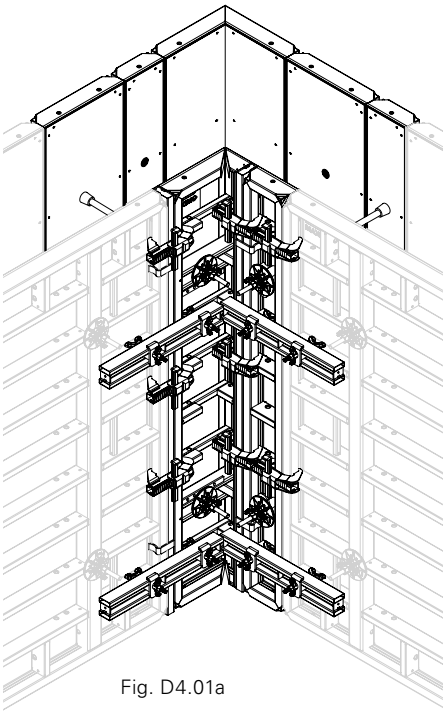


Fig. D4.01a

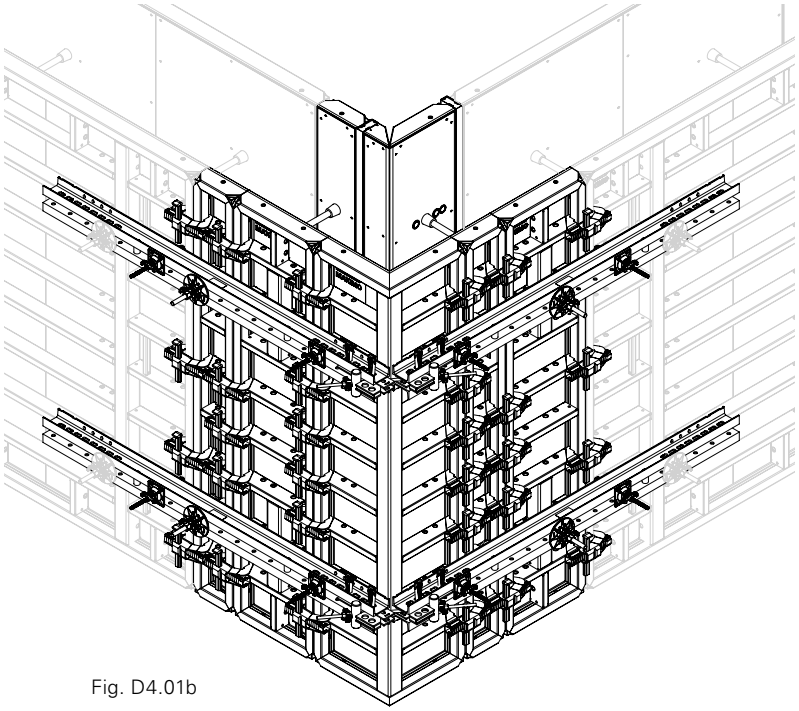


Fig. D4.01b

Height 330 cm
(Fig. D4.01c + D4.01d)

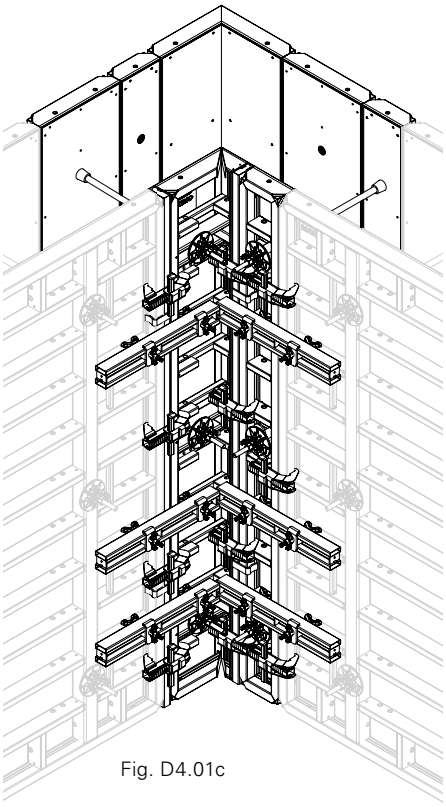


Fig. D4.01c

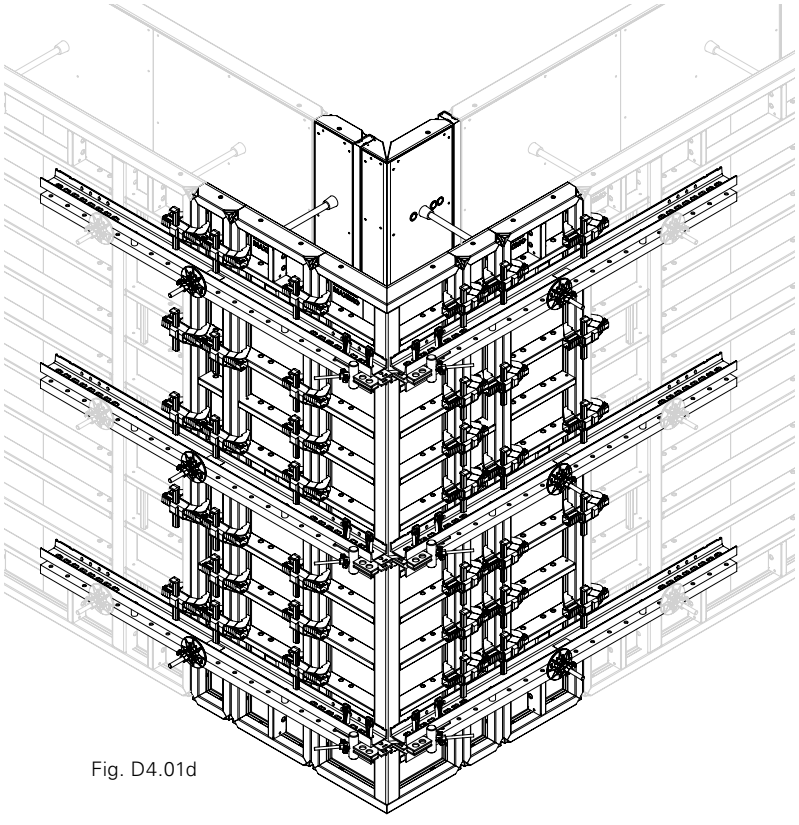


Fig. D4.01d

D4 90° Corners for 80 cm Wall Thickness

Inside Corner MXI 18, 270/330 x 60

Outside Corner MXA 18, 270/330 x 45

Perm. fresh concrete pressure: 60 kN/m²

Components

19	Waler Stop
20	Alignment Coupler BFD
23	Wingnut Pivot Plate DW 15
24	Hook Tie DW 15/400
25	Tie Rod DW 15
29	Steel Waler SRU 247 U120
36	Tie Rod DW 20
37	Spacer Tube DR 28
38	DK Sealing Cone DW 30/55
39	Wingnut Pivot Plate DW 20
44	Wingnut DW 15
48	Wedge KZ
49	Tie Yoke SW
102/122	Panel MX 18, 270/330 x 45
103/123	Panel MX 18, 270/330 x 60
106/126	Panel MX 18, 270/330 x 240
140/142	Wall Thickness Compensator WDA MX 270/330 or filler timber supplied by contractor ≤ 10 cm
151/159	Outside Corner MXA 18, 270/330 x 45
153/161	Inside Corner MXI 18, 270/330 x 60

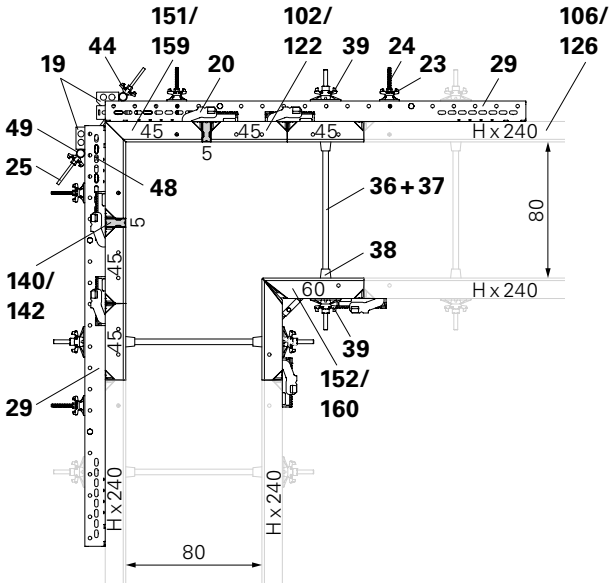


Abb. D4.02

Examples

– Wall thickness 80 / Height 270:
  Fig. D4.02 + D4.02a + D4.02b.
– Wall thickness 80 / Height 330:
  Fig. D4.02 + D4.02c + D4.02d.

D4 90° Corners for 80 cm Wall Thickness

Arrangement of the Alignment Couplers and Steel Walers

Height 270 cm
(Fig. D4.02a + D4.02b)

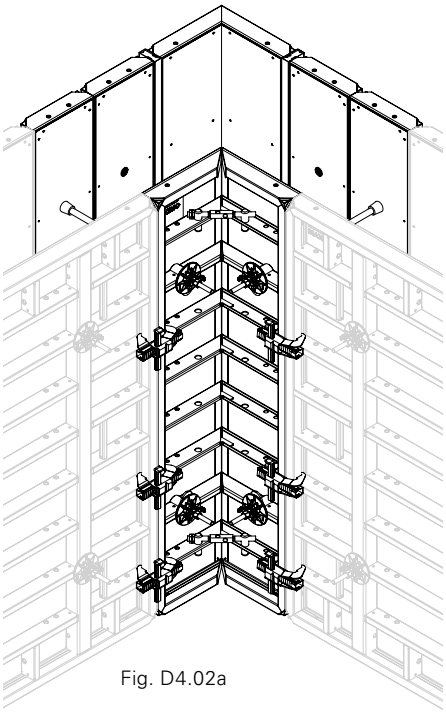


Fig. D4.02a

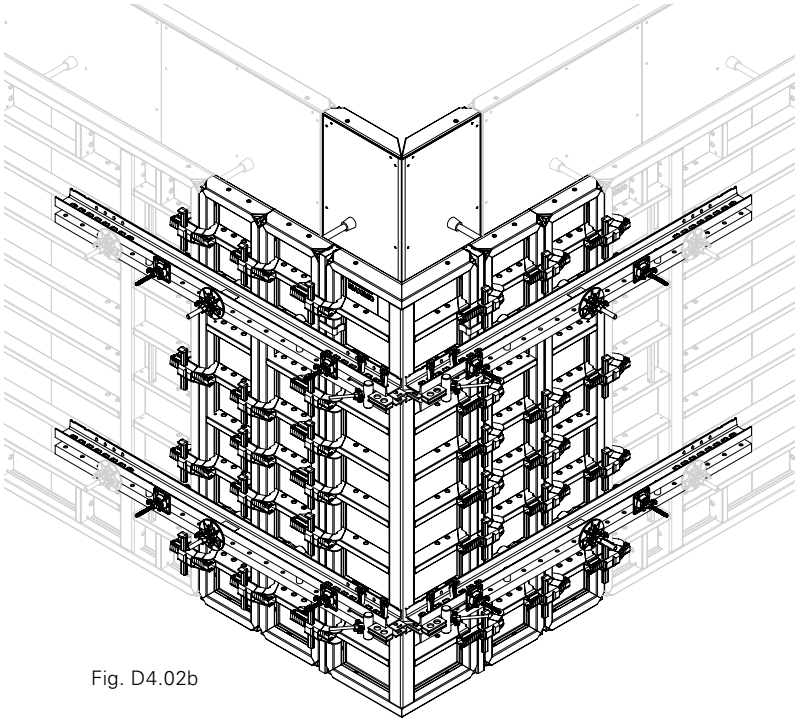


Fig. D4.02b

Height 330 cm
(Fig. D4.02c + D4.02d)

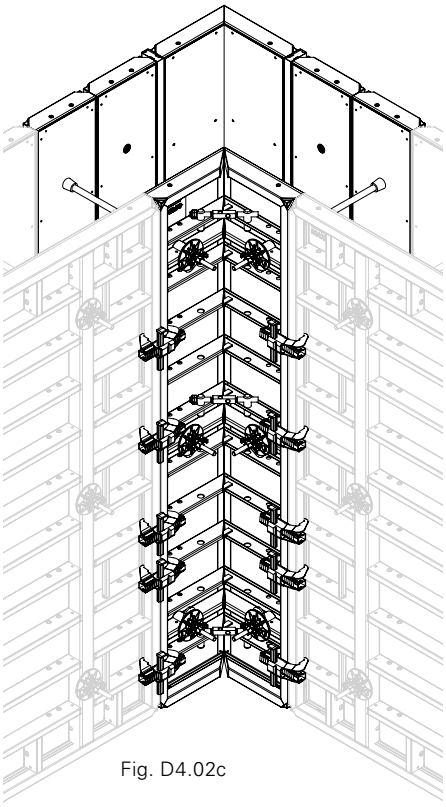


Fig. D4.02c

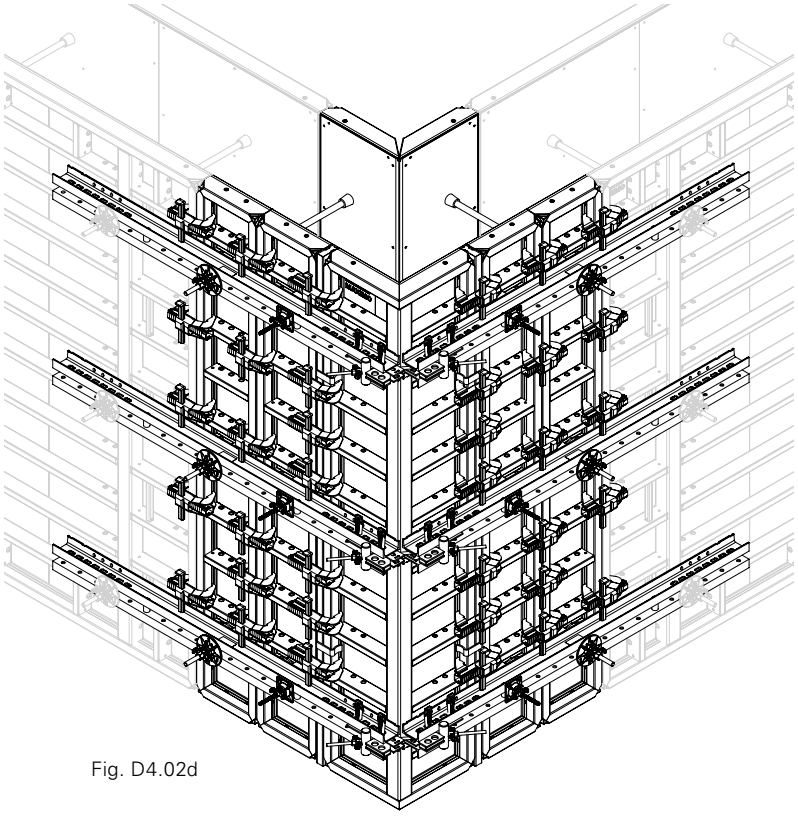


Fig. D4.02d

Shaft Corner MXSE 18

Not permissible for other formwork systems!

Panel heights
Four panel heights allow fast striking and moving of the shaft formwork.
– 1.20 m (Fig. D5.01a)
– 2.70 m (Fig. D5.01b)
– 3.30 m (Fig. D5.01c)

Components

80	Shaft Corner MXSE 18, height
80.1	Tie Point
80.2	Load-bearing point 2 t
80.3	Bolts and cotter pins
80.4	Openings for shuttering and striking
80.5	Positioning Waler MXSE
81	Shaft Corner MXSE 18, 120
82	Shaft Corner MXSE 18, 270
84	Shaft Corner MXSE 18, 330

Horizontally pre-assemble the shaft formwork.
(Fig. D5.02a + D5.03a)

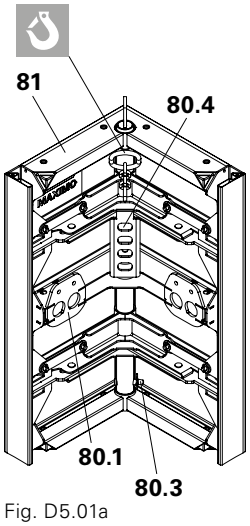


Fig. D5.01a

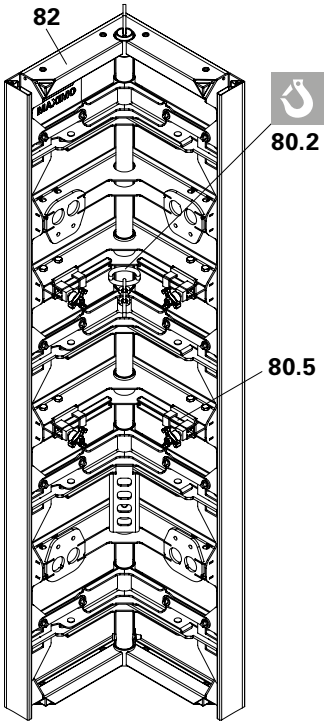


Fig. D5.01b

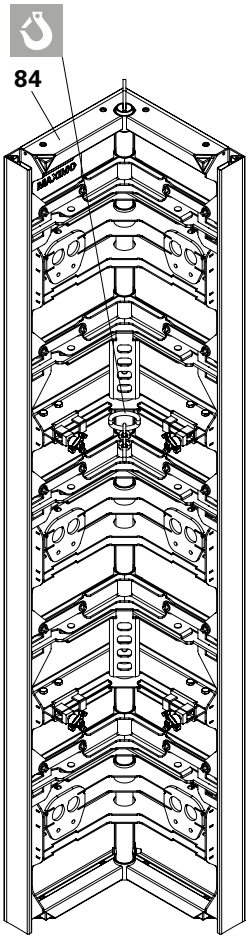


Fig. D5.01c

Crane lifting gear

Lifting Hook MAXIMO 1.5 t

For use with:
two Shaft Corners MXSE 18,
height 270/330 (82/84) and
two Inside Corners MXI 18,
height 270/330 x 50/20 (153/161).

Components

153/ 161	Inside Corner MXI 18, 270/330 x 50/20	2x
82/84	Shaft Corner MXSE 18, 270/330	2x
16	Lifting Hook MAXIMO 1.5 t	2x

- **Perm. load-bearing capacity of the lifting hook: 1.5 t.**
- **Take into consideration Instructions for Use for the Lifting Hook MAXIMO 1.5 t!**

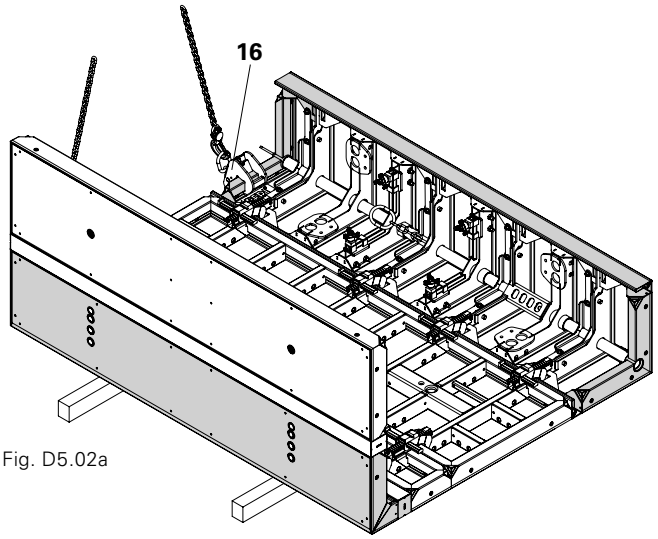


Fig. D5.02a

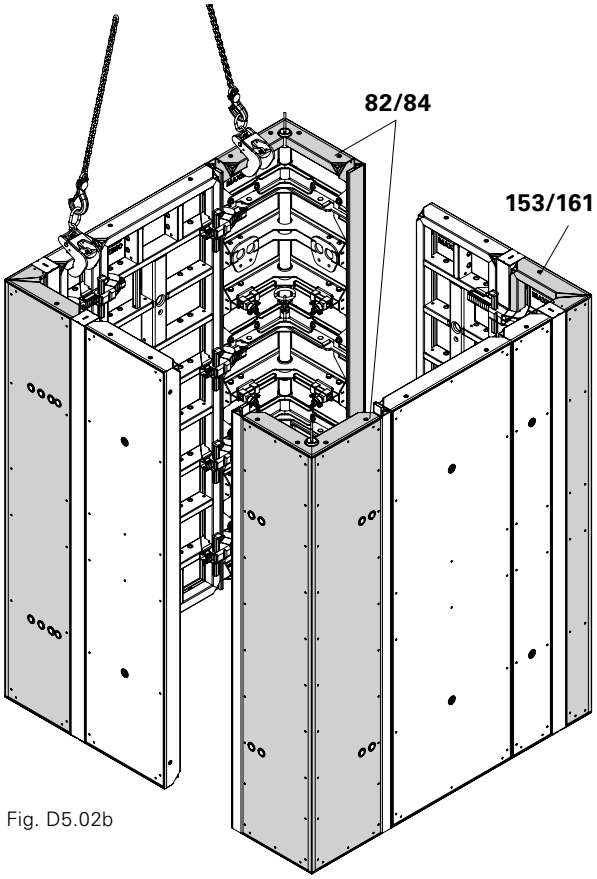


Fig. D5.02b

Lifting Gear Combi MX

For use with:
four Shaft Corners MXSE 18,
height 270/330 (82/84).

Components

82/84	Shaft Corner MXSE 18, 270/330	4x
15	Lifting Gear Combi MX	1x

- **Perm. load capacity of the load-bearing points: 2 t.**
- **Take into consideration Instructions for Use for the Lifting Gear Combi MX!**

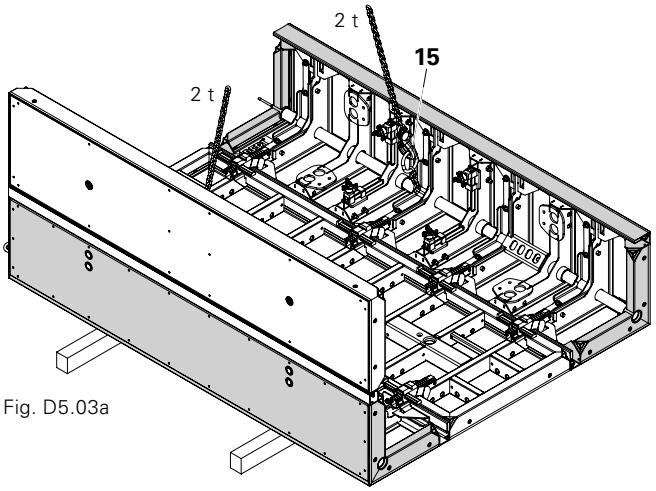


Fig. D5.03a

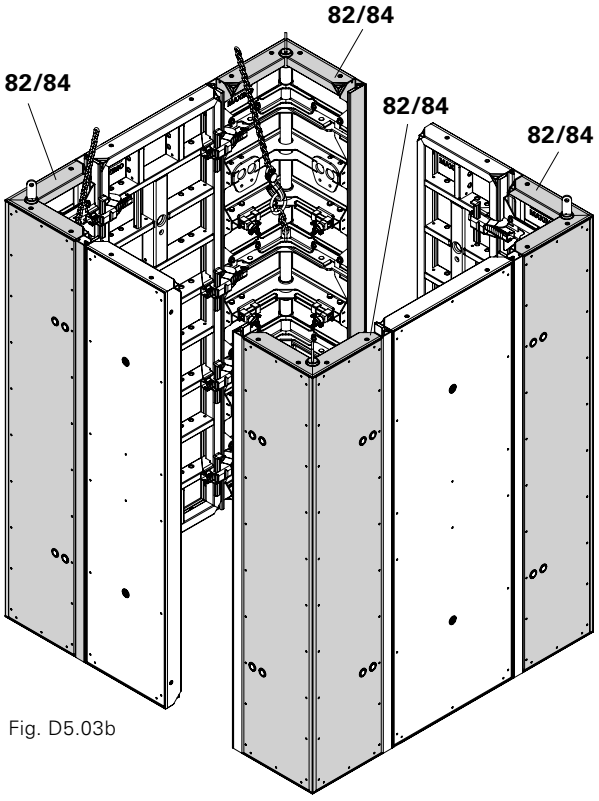


Fig. D5.03b

Shaft Corner MXSE 18, 270

Two Shaft Corners MXSE 18, 270
and
two Inside Corners MXI 18, 270 x 50/20

Height 270 cm

Corners of the inner shaft wall
Components

20	Alignment Coupler BFD
82	Shaft Corner MXSE 18, 270
153	Inside Corner MXI 18, 270 x 50/20
101/102/ 103/104	Panel MX 18, 270 x 30/45/60/90

Arrangement of the Alignment Couplers BFD
Shown:
– Shaft dimensions: 2.30 m x 2.60 m.
– Wall thickness 25 cm.
(Fig. D5.04)

Shaft Corner MXSE 18, 270 (82).
(Fig. D5.04a)

Inside Corner MXI 18, 270 x 50/20 (153).
(Fig. D5.04b)

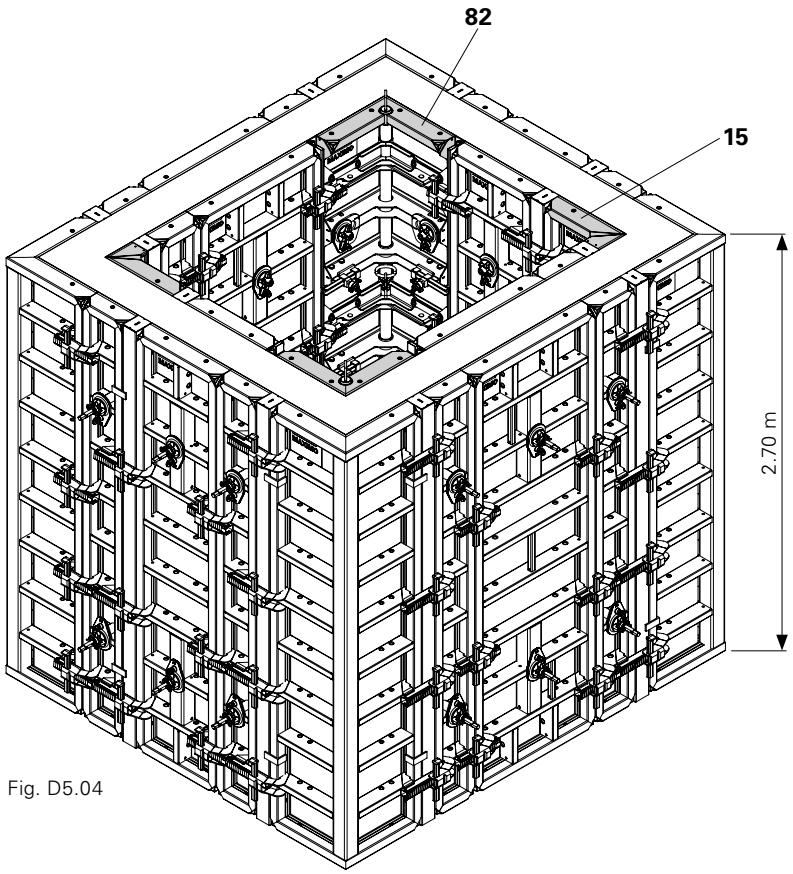


Fig. D5.04

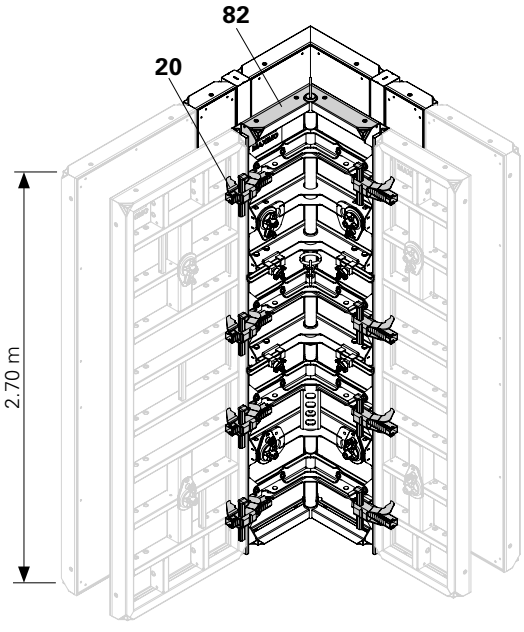


Fig. D5.04a

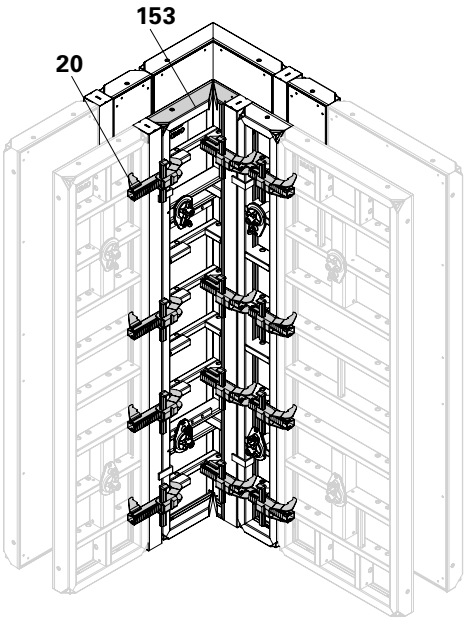


Fig. D5.04b

Four Shaft Corners MXSE 18, 270

Height 270 cm

Corners of the inner shaft wall
Components

20	Alignment Coupler BFD
82	Shaft Corner MXSE 18, 270
104/ 105/106	Panel MX 18, 270 x 90/120/240

Arrangement of the Alignment Couplers BFD
Shown:
– Shaft dimensions: 2.30 m x 2.60 m.
– Wall thickness 25 cm.
(Fig. D5.05)

Shaft Corner MXSE 18, 270 (82).
(Fig. D5.05a)

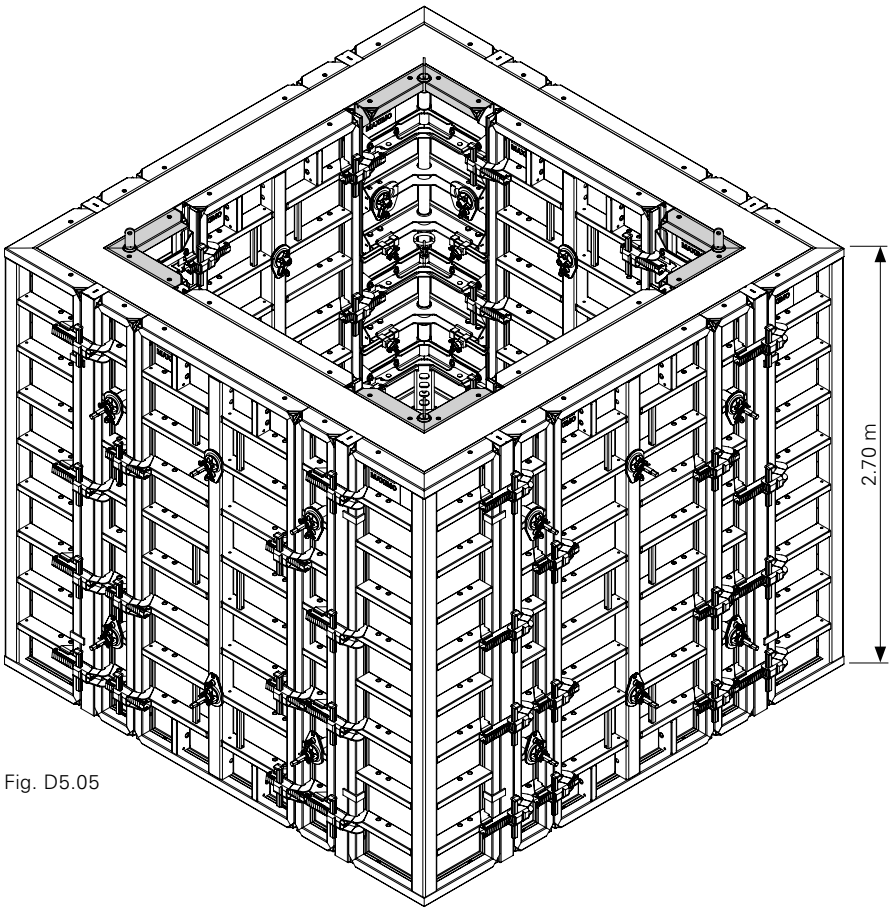


Fig. D5.05

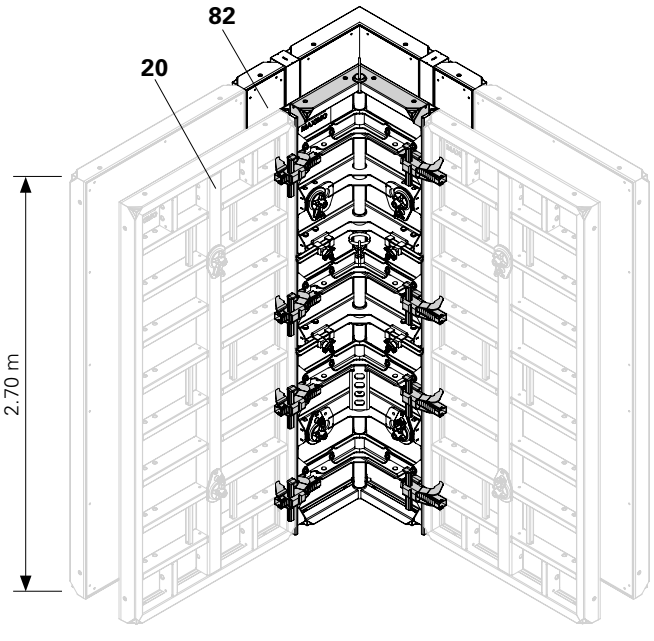


Fig. D5.05a

Shaft Corner MXSE 18, 330

Two Shaft Corners MXSE 18, 330
and
two Inside Corners MXI 18, 330 x 50/20

Height 330 cm

Corners of the inner shaft wall
Components

20	Alignment Coupler BFD
84	Shaft Corner MXSE 18, 330
161	Inside Corner MXI 18, 330 x 50/20
121/122/ 123/124	Panel MX 18, 330 x 30/45/60/90

Arrangement of the Alignment Couplers BFD
Shown:
– Shaft dimensions: 2.30 m x 2.60 m.
– Wall thickness 25 cm.
(Fig. D5.06)

Shaft Corner MXSE 18, 330 (84).
(Fig. D5.06a)

Inside Corner MXI 18, 330 x 50/20 (161).
(Fig. D5.06b)

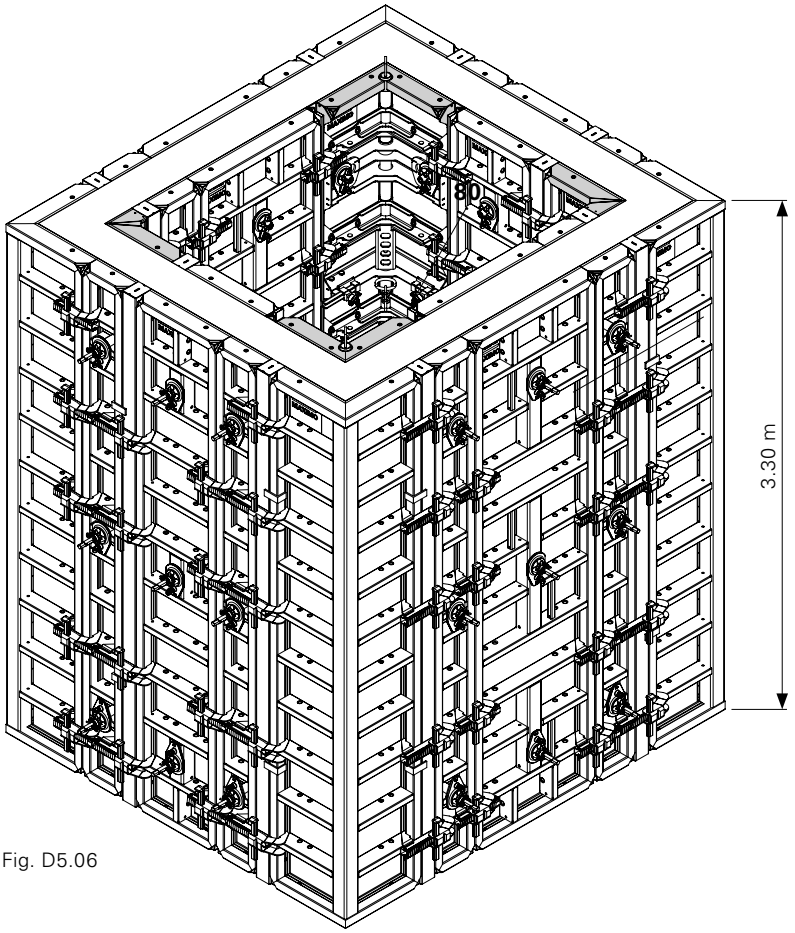


Fig. D5.06

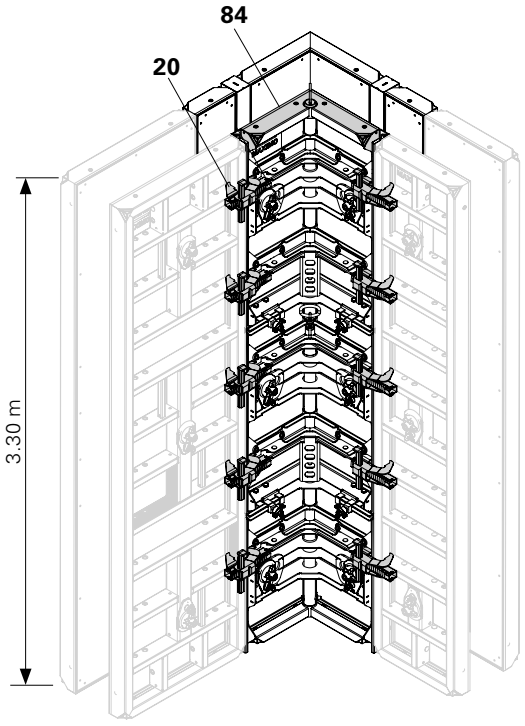


Fig. D5.06a

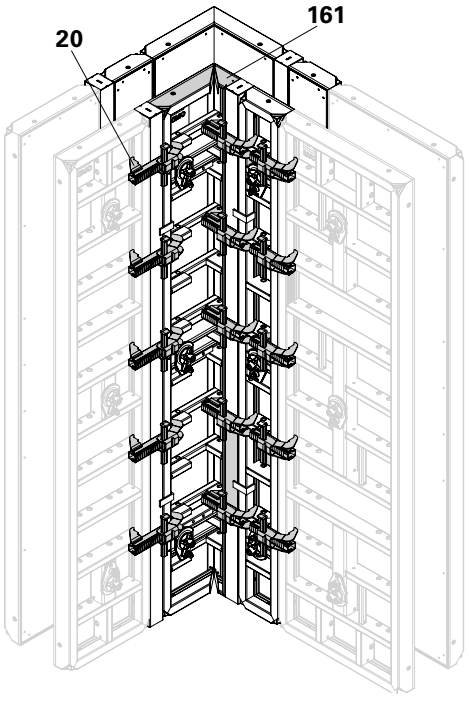


Fig. D5.06b

D5 Shaft Formwork

Four Shaft Corners MXSE 18, 330

Height 330 cm

Corners of the inner shaft wall
Components

20	Alignment Coupler BFD
84	Shaft Corner MXSE 18, 330
124/ 125/126	Panel MX 18, 330 x 90/120/240

Arrangement of the Alignment Couplers BFD
Shown:
– Shaft dimensions: 2.30 m x 2.60 m.
– Wall thickness 25 cm.
(Fig. D5.07)

Shaft Corner MXSE 18, 330 (84).
(Fig. D5.07a)

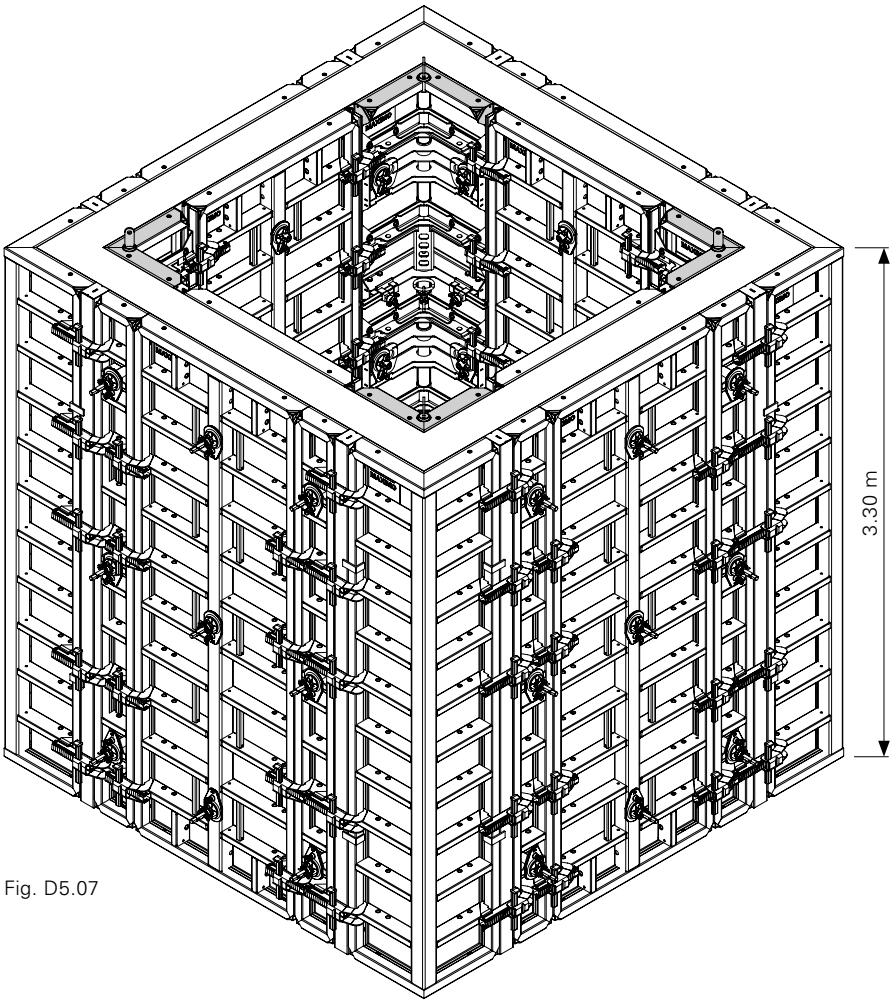


Fig. D5.07

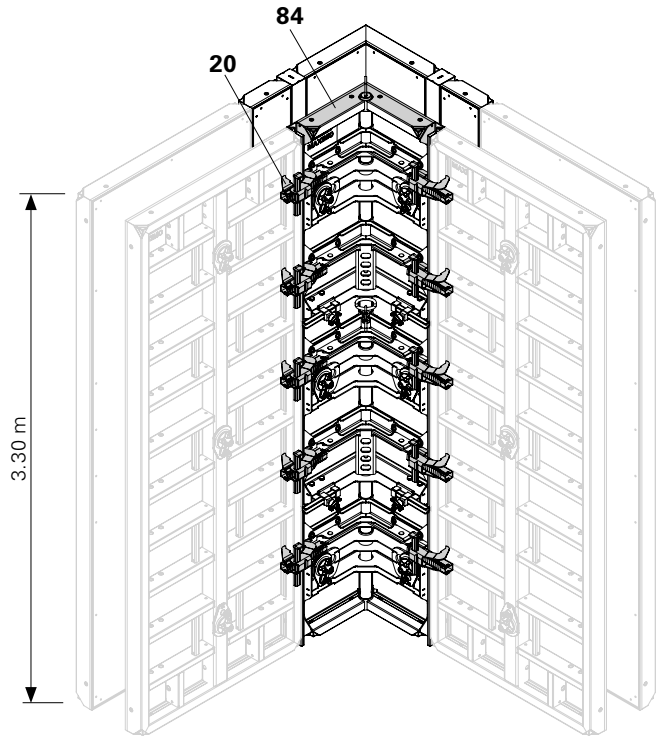


Fig. D5.07a

Shuttering

Before shuttering, check Tube and remove Transportation Securing Pins 20 x 102.
Mount Swivel Nut MX 18 on the internal formwork.

Shuttering

1. Insert formwork lever into the opening (80.4) and press upwards.
   → The tube slides downwards.
2. Secure tube by means of pins 20 x 102 and cotter pins 5/1 (80.3). (Fig. D5.08 + D5.08b)
3. Push the slider of the Positioning Waler (80.5) over the profile until there is a flush fit and tighten the wingnuts. (Fig. D5.08 + D5.08a)

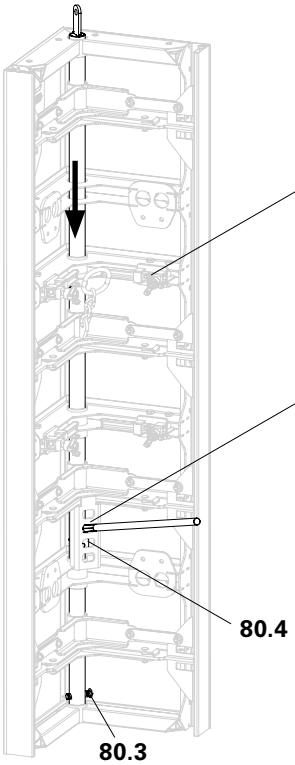


Fig. D5.08

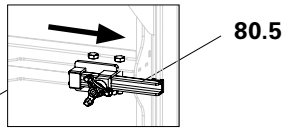


Fig. D5.08a

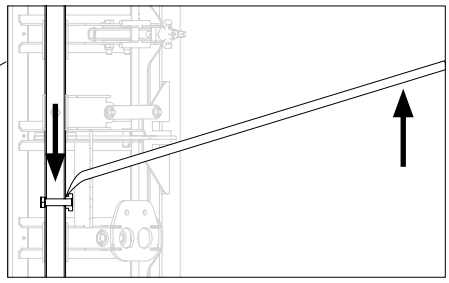


Fig. D5.08b

Striking

Perm. load capacity of 2 t per load-bearing point!
Do not exceed the crane capacity!

Preparation

1. Remove tie points.
2. Loosen wingnuts on the Positioning Waler and push the slider back. (Fig. D5.09 + D5.09a)
3. Attach crane slings:
   – with four shaft corners, use all 4 load-bearing points,
   – with two shaft corners, use 2 load-bearing points.
4. Tension crane slings. (Fig. D5.09c)
5. Press crowbar downwards.
   → The tube slides upwards and the striking position has been adjusted.
6. Pull the complete internal formwork upwards, and move.
7. Insert pins 20 x 102 into the tube and secure with cotter pins 5/1 (80.3). (Fig. D5.09 + D5.09b)
   → Transport safety.

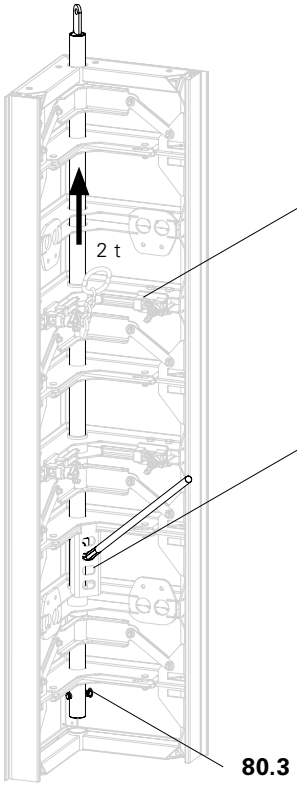


Fig. D5.09

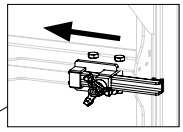


Fig. D5.09a

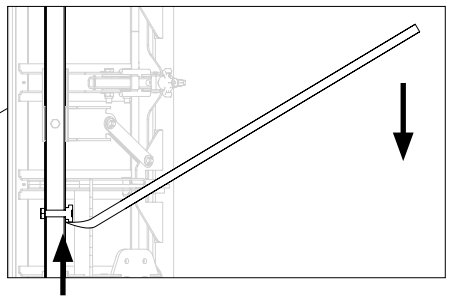


Fig. D5.09b

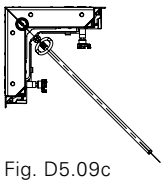


Fig. D5.09c

Shaft with two Shaft Corners MXSE 18

The striking dimensions are reduced by 17.5 mm on each side of the shaft. (Fig. D5.10)

With boxouts, e.g. for doors or windows, be careful of nails of the mounting parts in the formlining!

shuttered

struck

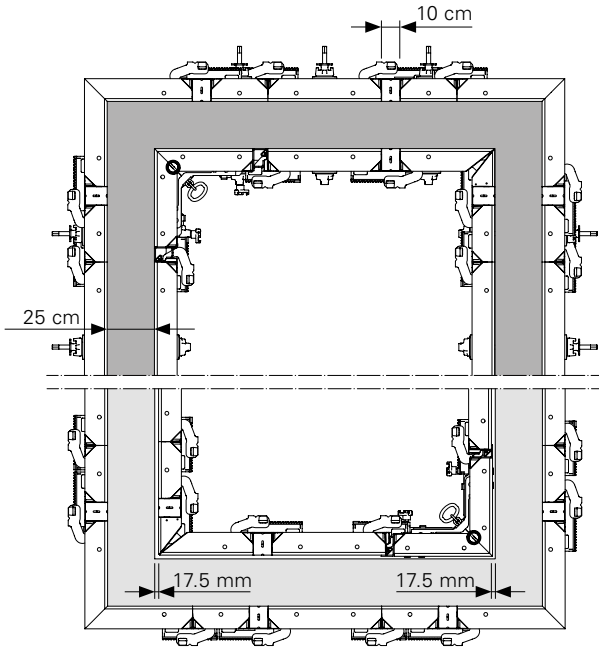


Fig. D5.10

Shaft with four Shaft Corners MXSE 18

The striking dimensions are reduced by 35 mm on each side of the shaft. (Fig. D5.11)

shuttered

struck

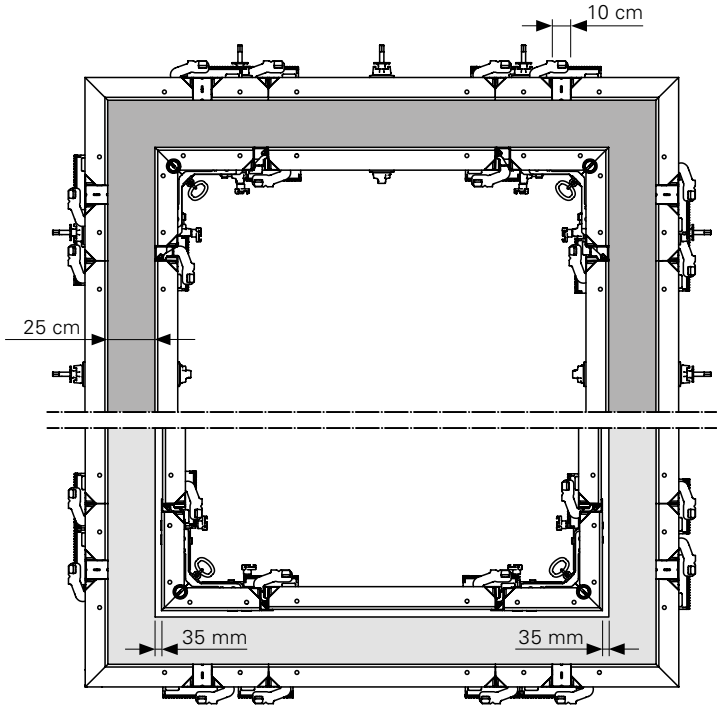


Fig. D5.11

Wall Thicknesses

Dimension specifications in mm.

Shaft with two Shaft Corners MXSE 18

Shaft with four Shaft Corners MXSE 18

Wall thickness 150
(Fig. D5.12a + D5.12b)

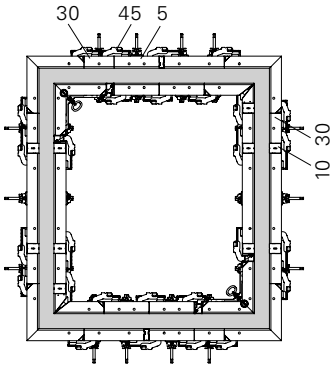


Fig. D5.12a

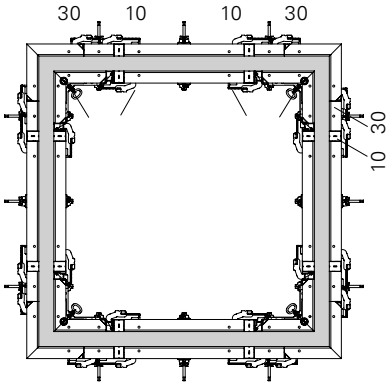


Fig. D5.12b

Wall thickness 200
(Fig. D5.13a + D5.13b)

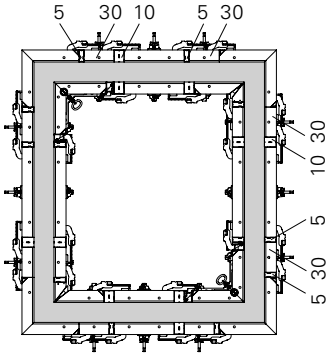


Fig. D5.13a

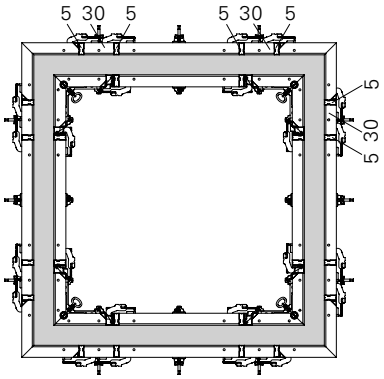


Fig. D5.13b

Wall thickness 250
(Fig. D5.14a + D5.14b)

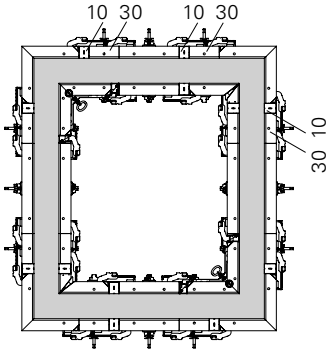


Fig. D5.14a

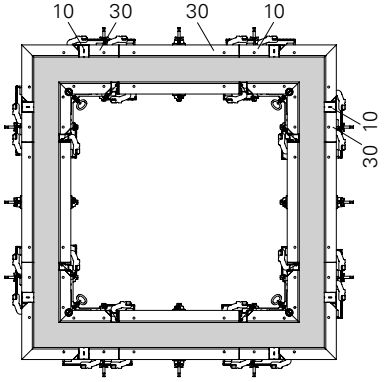


Fig. D5.14b

Wall thickness 300
(Fig. D5.15a + D5.15b)

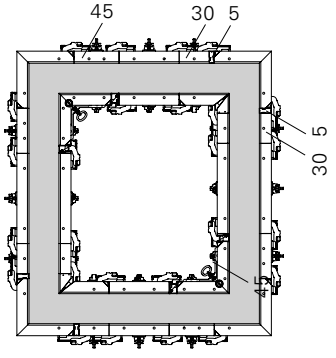


Fig. D5.15a

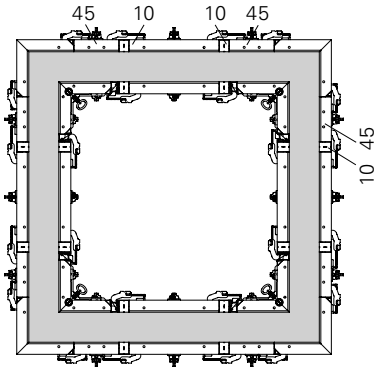


Fig. D5.15b

Extensions

(Fig. D5.16 + D5.16a + D5.16b + D5.16c)

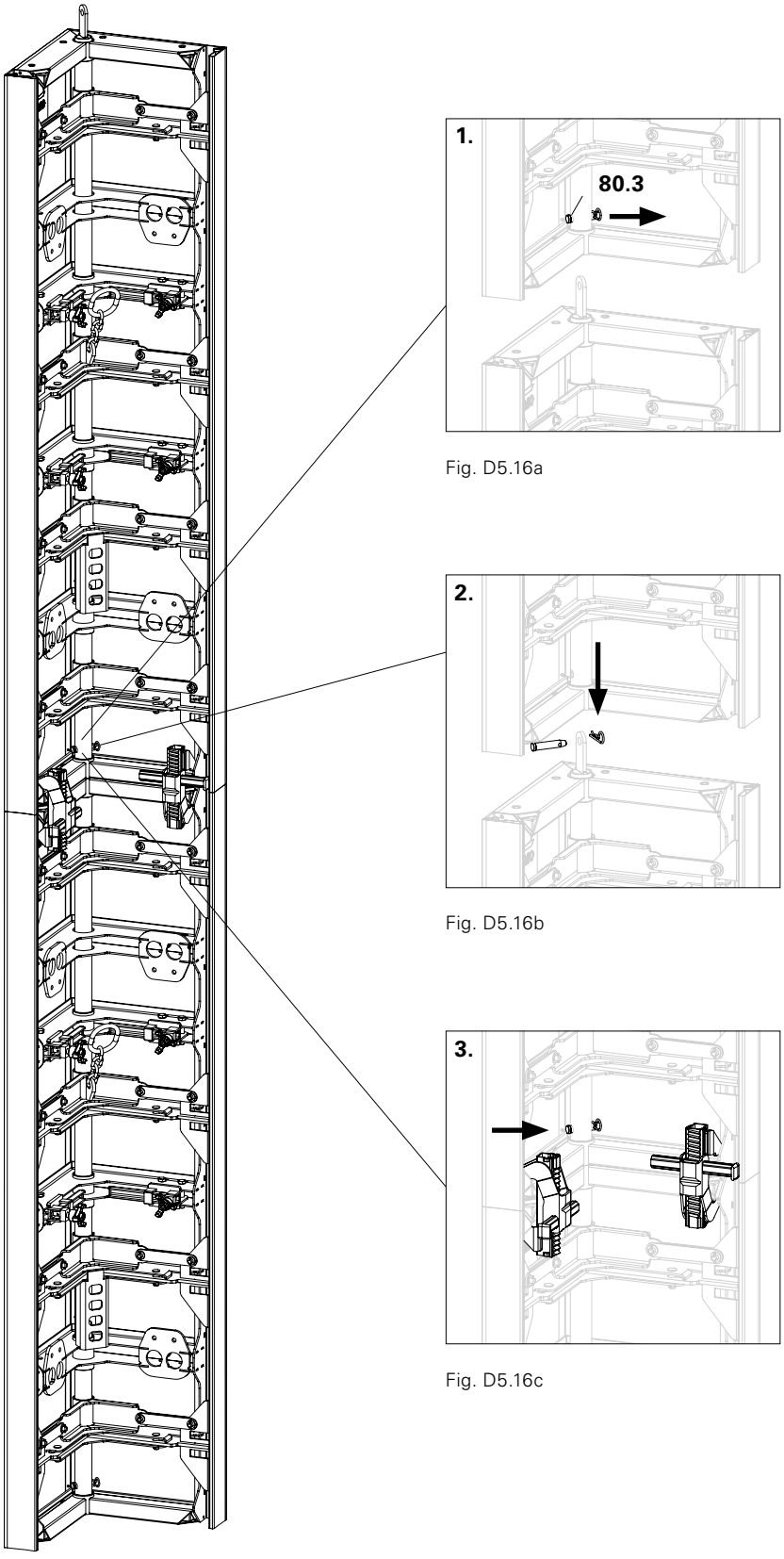


Fig. D5.16a

Fig. D5.16b

Fig. D5.16c

Fig. D5.16

D6 Sealing Replacement

Removing the sealing

Prepare the Removable Tool MX
Turn back Removable Tool MX (95). (Fig. D6.01)

Starting position on the panel
Replacement of Sealing MX 18 or modification to Sealing MX 15 (10.1). (Fig. D6.02)

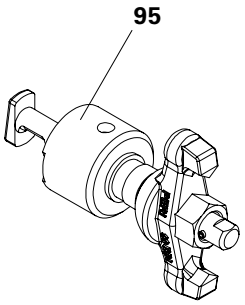


Fig. D6.01

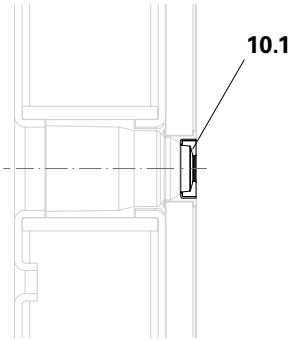


Fig. D6.02

Using the Removable Tool MX

1. Screw in the Extraction Head (95.1) with the thick end at an angle into the sealing until the Extraction Head is positioned inside the sealing. (Fig. D6.03a + D6.03b)

2. Turn the Removable Tool MX towards the panel until the Extractor Bell (95.2) rests against it. (Fig. D6.04a)

3. Secure the Extractor Bell and continue turning until the sealing is released.

4. Screw out the Extraction Head from the sealing. (Fig. D6.04b)

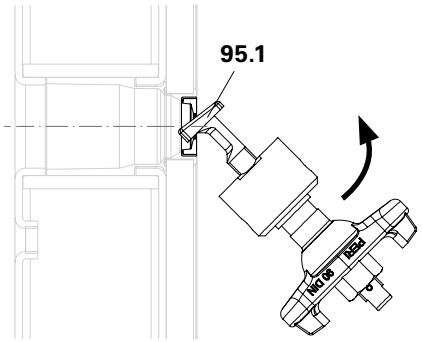


Fig. D6.03a

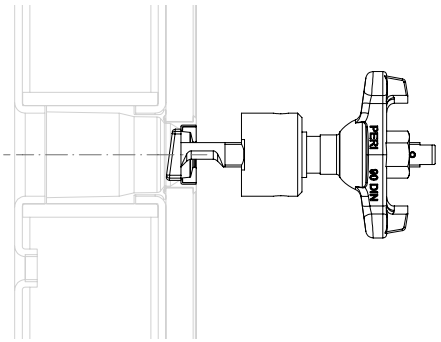


Fig. D6.03b

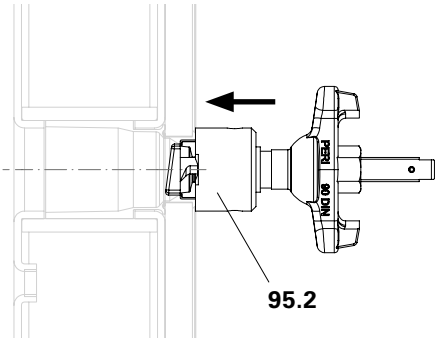


Fig. D6.04a

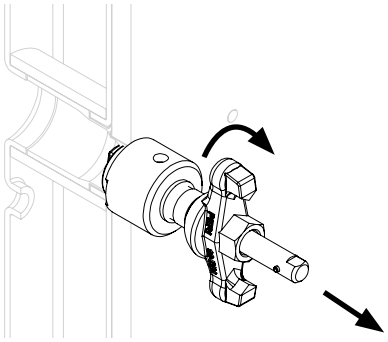


Fig. D6.04b

Inserting the sealing

Inner side of panel

1. Place new sealing on the opening.
   (Fig. D6.05a)

2. Install sealing using hammer and plate until flush fit is achieved.
   (Fig. D6.05b)

   → The sealing has now been replaced.
   (Fig. D6.06)

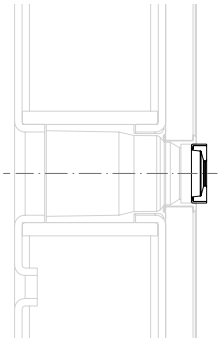


Fig. D6.05a

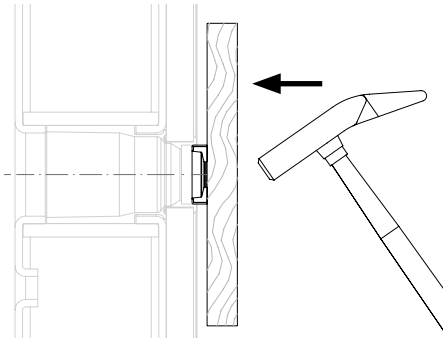


Fig. D6.05b

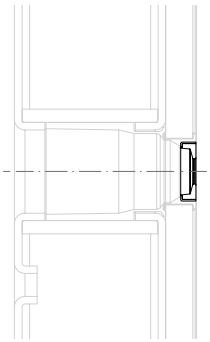
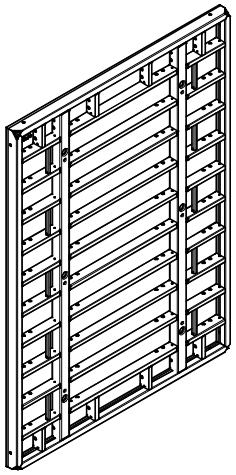
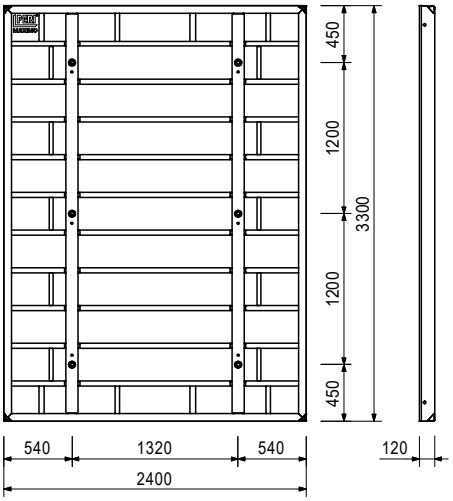


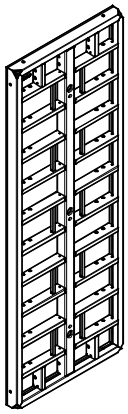
Fig. D6.06

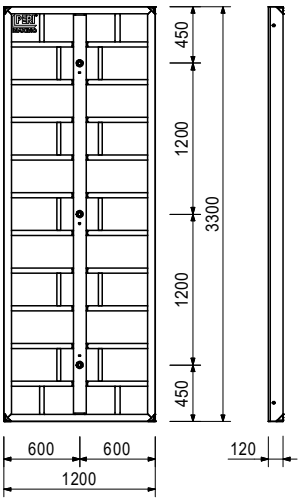
Item no.	Weight kg	
124093	408,000	**Panel MX 18, 330 x 240** 7.920 m². Panel with 18 mm plywood.



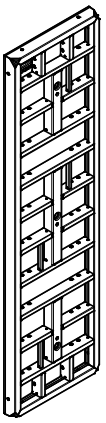


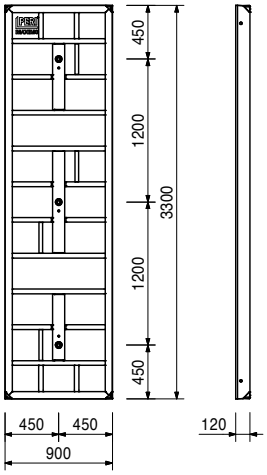
124126	226,000	**Panel MX 18, 330 x 120** 3.960 m². Panel with 18 mm plywood.



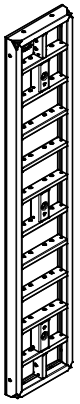


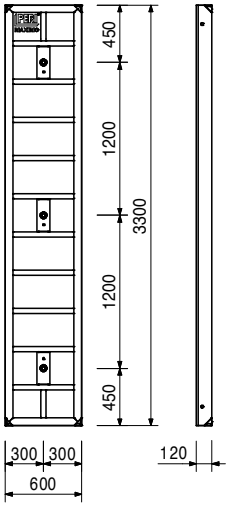
124127	172,000	**Panel MX 18, 330 x 90** 2.970 m². Panel with 18 mm plywood.





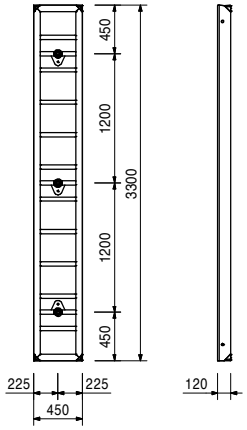
Item no.	Weight kg	
124128	118,000	**Panel MX 18, 330 x 60** 1.980 m². Panel with 18 mm plywood.





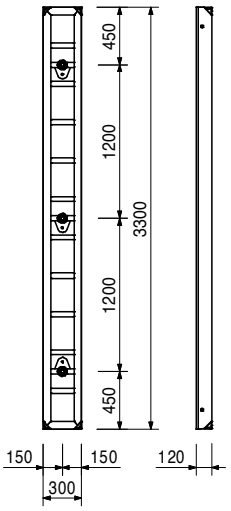
124129	99,900	**Panel MX 18, 330 x 45** 1.485 m². Panel with 18 mm plywood.





124130	79,600	**Panel MX 18, 330 x 30** 0.990 m². Panel with 18 mm plywood.

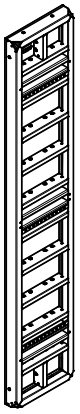


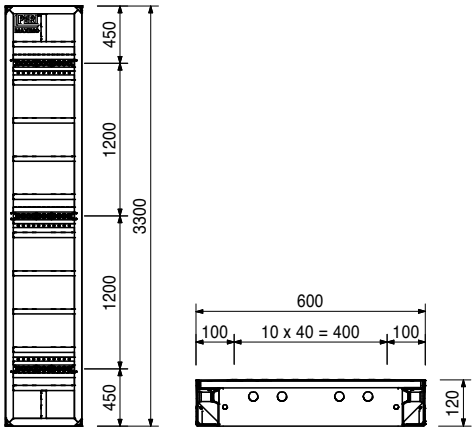


Item no.	Weight kg
124163	141,000

Multi Panel MXM 18, 330 x 60
1.980 m². Panel with 18 mm plywood.
For oblique angles, wall connections etc.

Complete with
33 pc. 125099 Plug MXM 18, Ø 26
33 pc. 123604 Sealing MX 18

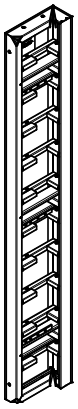


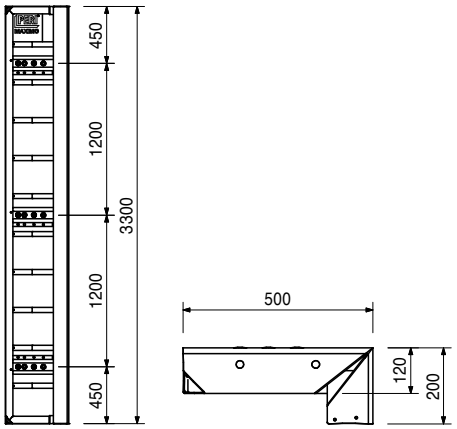


124190	136,000

Inside Corner MXI 18, 330 x 50/20
2.310 m². Panel with 18 mm plywood.
For 90° internal corner.

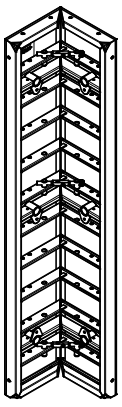
Complete with
12 pc. 125099 Plug MXM 18, Ø 26
12 pc. 123604 Sealing MX 18

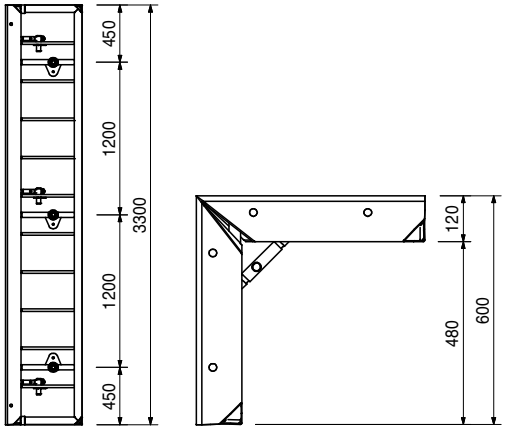




124195	206,000

Inside Corner MXI 18, 330 x 60
3.960 m². Panel with 18 mm plywood.
For 90° internal corners.

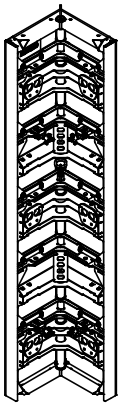


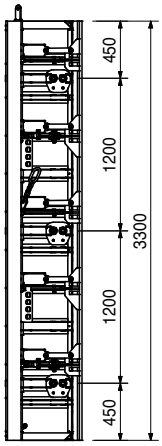


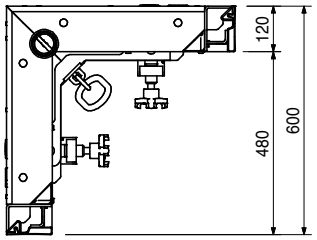
Item no.	Weight kg
125284	401,000

Shaft Corner MXSE 18, 330
Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

Complete with
4 pc. 126263 Position Latch MXSE.
Technical Data
Permissible load-bearing point capacity 2.0 t.

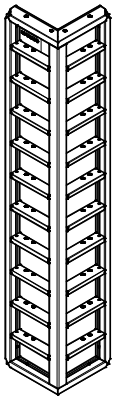


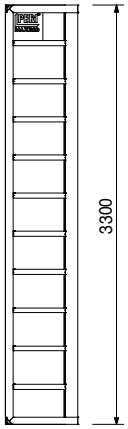


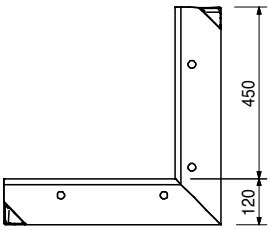


114478	192,000

Outside Corner MXA 330 x 45
2.970 m². Panel with 18 mm plywood.
For 90° external corners.

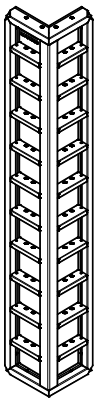


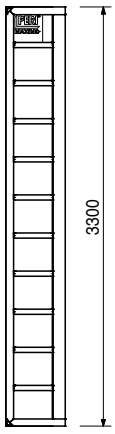


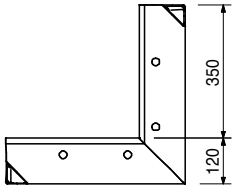


114486	170,000

Outside Corner MXA 330 x 35
2.310 m². Panel with 18 mm plywood.
For 90° external corners.



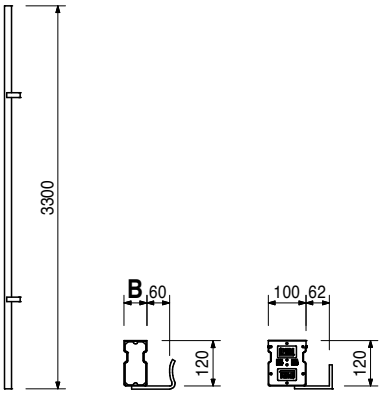




Item no.	Weight kg		
		Wall Thickness Compensations WDA MX 330	**B**
114842	17,800	**Wall Thickness Comp. WDA MX 330 x 4**	40
114826	18,900	**Wall Thickness Comp. WDA MX 330 x 5**	50
114846	20,200	**Wall Thickness Comp. WDA MX 330 x 6**	60
114394	12,100	**Wall Thickness Comp. WDA MX 330 x 10, Alu**	100

For adjusting to wall thicknesses.

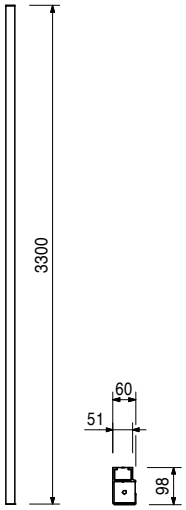




101829	9,820	**Filler Profile TPP 330, Alu**

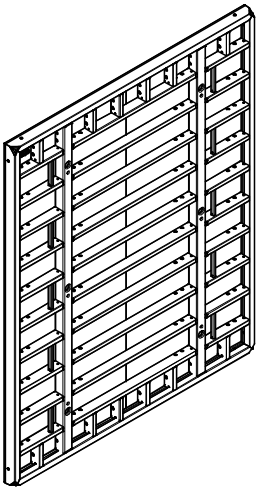
For compensation with 21 mm filler plates.

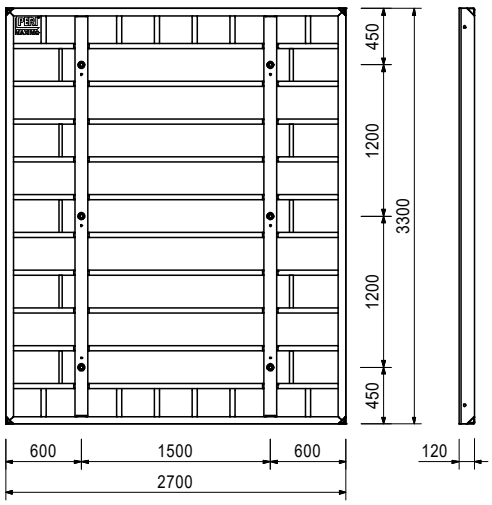




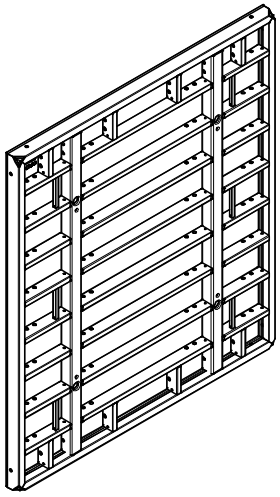
124131	446,000	**Panel MX 18, 330 x 270**

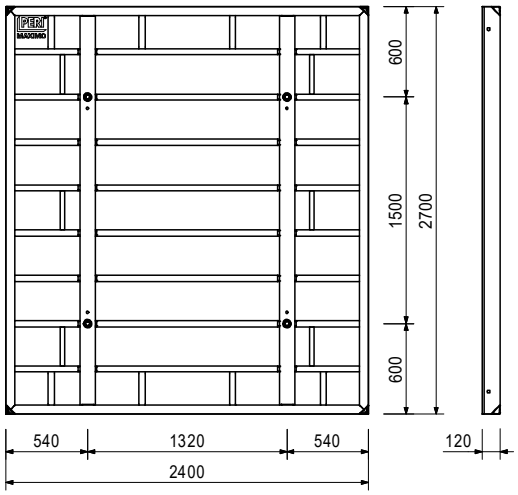
8.910 m². Panel with 18 mm plywood.



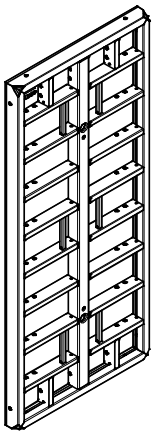


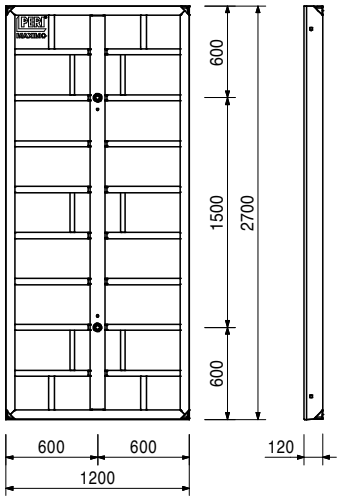
Item no.	Weight kg	
124132	336,000	**Panel MX 18, 270 x 240** 6.480 m². Panel with 18 mm plywood.



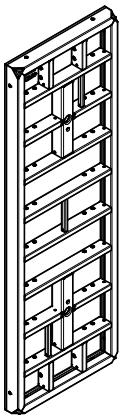


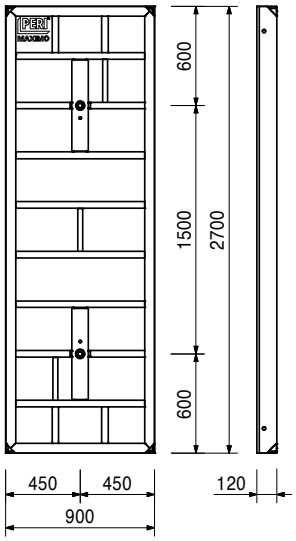
124134	186,000	**Panel MX 18, 270 x 120** 3.240 m². Panel with 18 mm plywood.



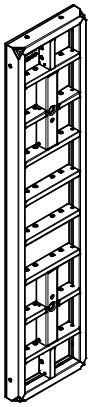


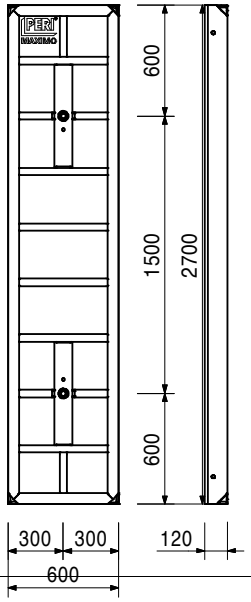
124138	135,000	**Panel MX 18, 270 x 90** 2.430 m². Panel with 18 mm plywood.



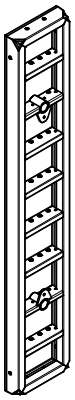


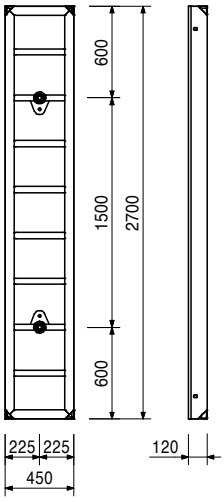
Item no.	Weight kg	
124135	104,000	**Panel MX 18, 270 x 60** 1.620 m². Panel with 18 mm plywood.





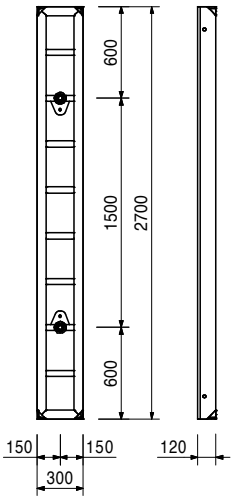
124136	77,600	**Panel MX 18, 270 x 45** 1.215 m². Panel with 18 mm plywood.





124137	62,800	**Panel MX 18, 270 x 30** 0.810 m². Panel with 18 mm plywood.

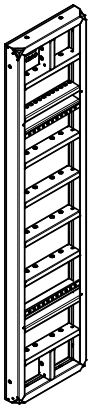


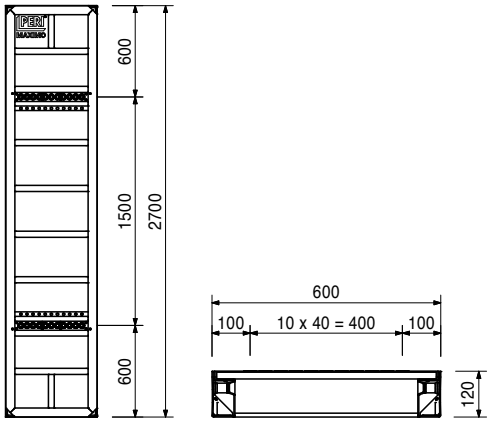


Item no.	Weight kg
124188	108,000

Multi Panel MXM 18, 270 x 60
1.620 m². Panel with 18 mm plywood.
For oblique angles, wall connections etc.

Complete with
22 pc. 125099 Plug MXM 18, Ø 26
22 pc. 123604 Sealing MX 18

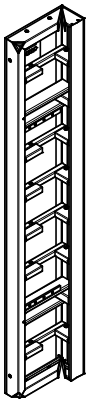


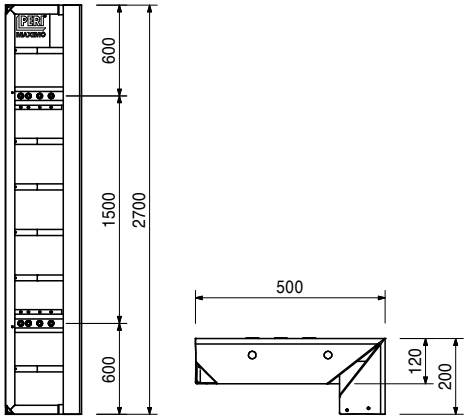


124191	103,000

Inside Corner MXI 18, 270 x 50/20
1.890 m². Panel with 18 mm plywood.
For 90° internal corner.

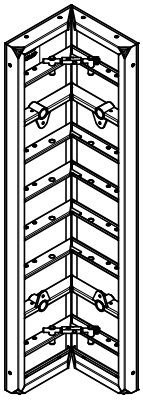
Complete with
8 pc. 125099 Plug MXM 18, Ø 26
8 pc. 123604 Sealing MX 18

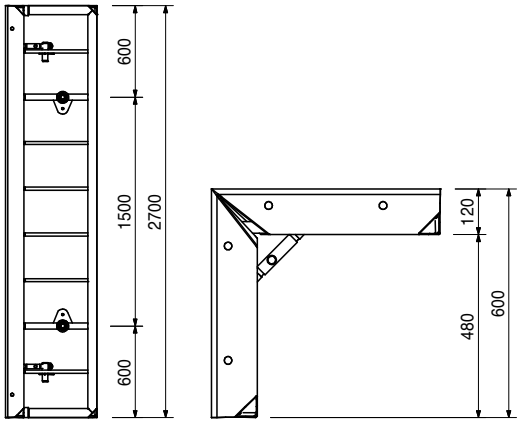




124196	156,000

Inside Corner MXI 18, 270 x 60
3.240 m². Panel with18 mm plywood.
For 90° internal corners.

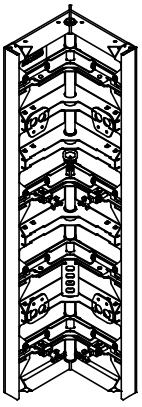


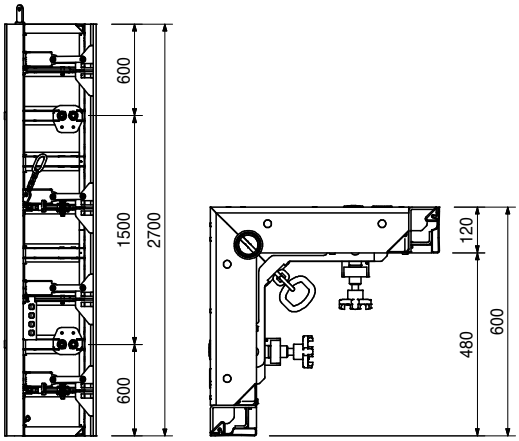


Item no.	Weight kg
125286	306,000

Shaft Corner MXSE 18, 270
Panel for forming 90° inside corners along with striking and moving complete internal shaft formwork units.

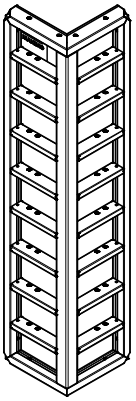
Complete with
4 pc. 126263 Position Latch MXSE.
Technical Data
Permissible load-bearing point capacity 2.0 t.

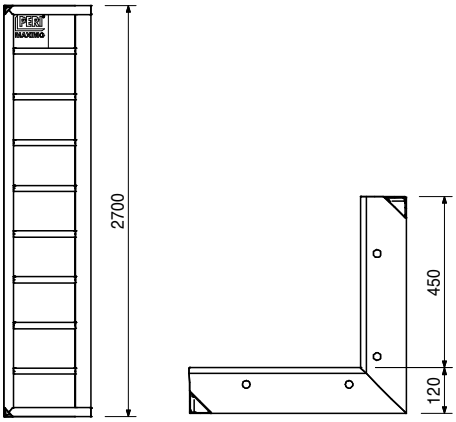




112806	159,000

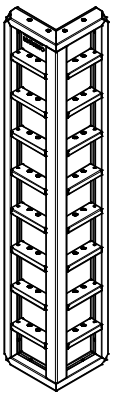
Outside Corner MXA 270 x 45
2.430 m². Panel with 18 mm plywood.
For 90° external corners.

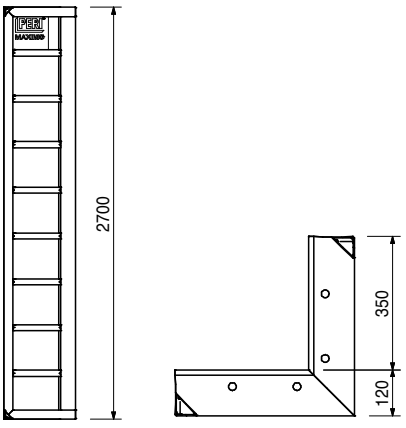




112667	141,000

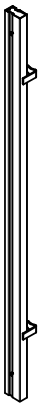
Outside Corner MXA 270 x 35
1.890 m². Panel with 18 mm plywood.
For 90° external corners.

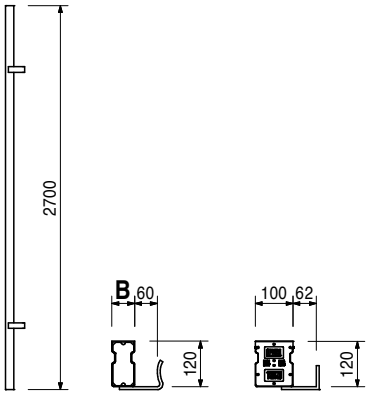




Item no.	Weight kg		
		Wall Thickness Compensations WDA MX 270	**B**
114165	14,700	**Wall Thickness Comp. WDA MX 270 x 4**	40
114186	15,700	**Wall Thickness Comp. WDA MX 270 x 5**	50
114174	16,800	**Wall Thickness Comp. WDA MX 270 x 6**	60
114128	10,000	**Wall Thickness Comp. WDA MX 270 x 10, Alu**	100

For adjusting to wall thicknesses.

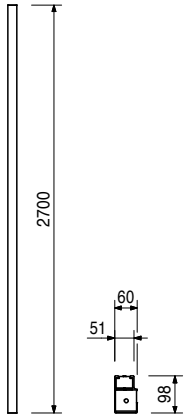




101813	8,040	**Filler Profile TPP 270, Alu**

For compensation with 21 mm filler plates.

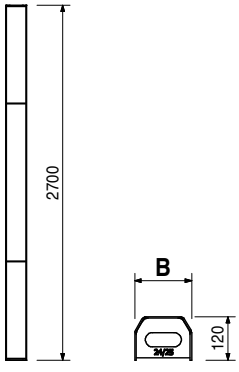




		Stopend Panels TRIO MT without waterstop	**B**
023061	27,500	**Stopend Panel TRIO MT 270 x 20**	118
023062	30,400	**Stopend Panel TRIO MT 270 x 24/25**	158
023064	37,300	**Stopend Panel TRIO MT 270 x 30**	218
023065	41,300	**Stopend Panel TRIO MT 270 x 35/36**	268

Centre piece without waterstop bar installation for stopend formwork.

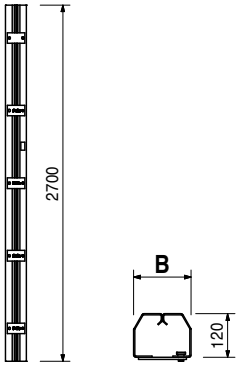




Item no.	Weight kg		B
		Stopend Panels TRIO MTF with waterstop	
023074	29,200	**Stopend Panel TRIO MTF 270 x 20**	118
023075	33,400	**Stopend Panel TRIO MTF 270 x 24/25**	158
023077	38,600	**Stopend Panel TRIO MTF 270 x 30**	218
023076	42,500	**Stopend Panel TRIO MTF 270 x 35/36**	268

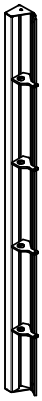
Centre piece with waterstop bar installation for stopend formwork.

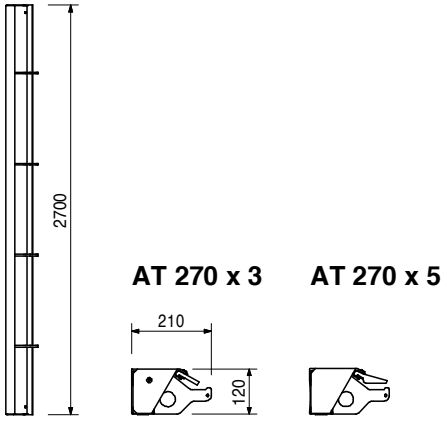




		Stopend Panels TRIO AT	**Note**
023060	17,200	**Stopend Panel TRIO AT 270 x 3**	Concrete cover approx. 30 or 50 mm.
105953	19,000	**Stopend Panel TRIO AT 270 x 5**	

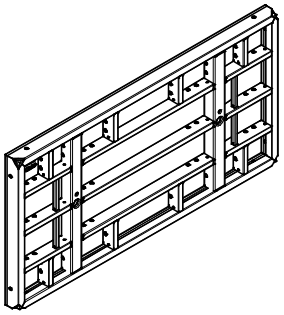
External piece for stopend formwork.

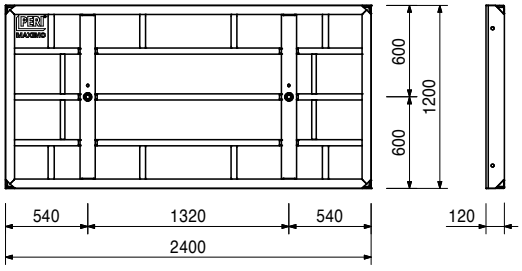




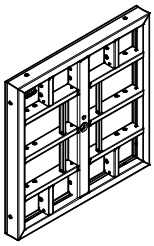
124139	166,000	**Panel MX 18, 120 x 240**

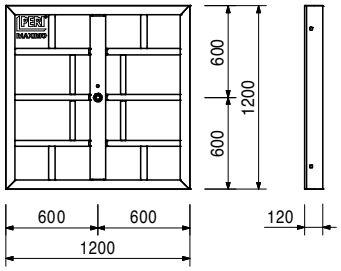
2.880 m². Panel with 18 mm plywood.



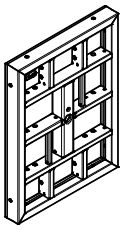


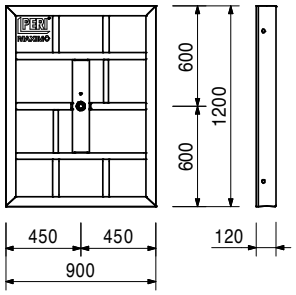
Item no.	Weight kg	
124142	90,700	**Panel MX 18, 120 x 120** 1.440 m². Panel with 18 mm plywood.



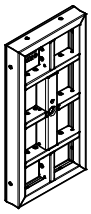


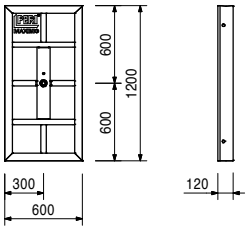
124143	67,700	**Panel MX 18, 120 x 90** 1.080 m². Panel with 18 mm plywood.



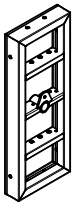


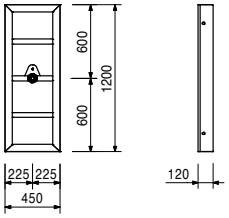
124144	51,200	**Panel MX 18, 120 x 60** 0.720 m². Panel with 18 mm plywood.





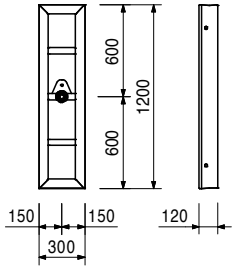
124145	37,100	**Panel MX 18, 120 x 45** 0.540 m². Panel with 18 mm plywood.



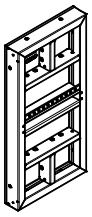


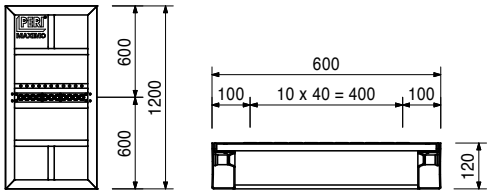
Item no.	Weight kg	
124146	27,400	**Panel MX 18, 120 x 30** 0.360 m². Panel with 18 mm plywood.



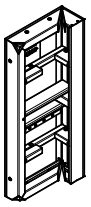


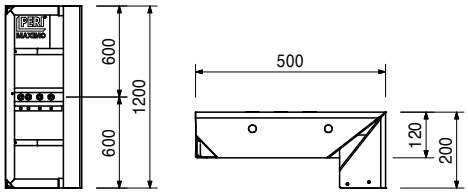
124189	53,700	**Multi Panel MXM 18, 120 x 60** 0.720 m². Panel with 18 mm plywood. For oblique angles, wall connections etc. **Complete with** 11 pc. 125099 Plug MXM 18, Ø 26 11 pc. 123604 Sealing MX 18



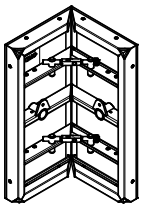


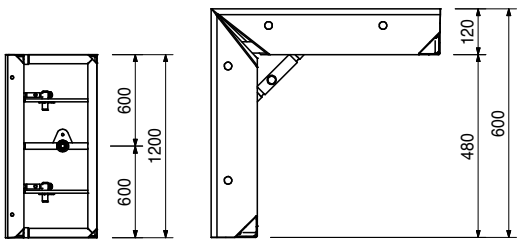
125277	48,800	**Inside Corner MXI 18, 120 x 50/20** 0.840 m². Panel with 18 mm plywood. For 90° internal corners. **Complete with** 4 pc. 125099 Plug MXM 18, Ø 26 4 pc. 123604 Sealing MX 18



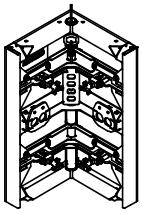


124197	80,500	**Inside Corner MXI 18, 120 x 60** 1.440 m². Panel with 18 mm plywood. For 90° internal corners.

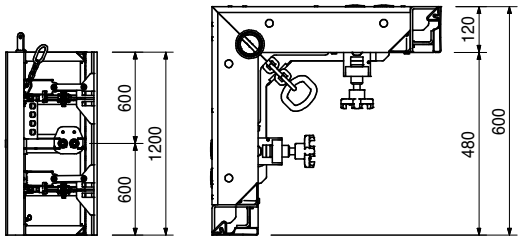




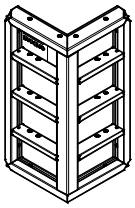
Item no.	Weight kg	
125288	139,000	**Shaft Corner MXSE 18, 120** For 90° inside corners along with striking and moving complete internal shaft formwork units.

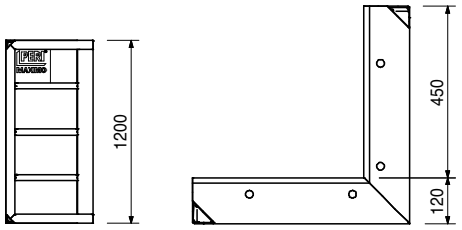


Technical Data
Permissible load-bearing point capacity 2.0 t.

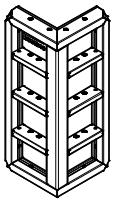


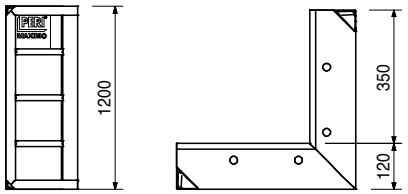
112830	76,100	**Outside Corner MXA 120 x 45** 1.080 m². Panel with 18 mm plywood. For 90° external corners.





112761	67,200	**Outside Corner MXA 120 x 35** 0.840 m². Panel with 18 mm plywood. For 90° external corners.

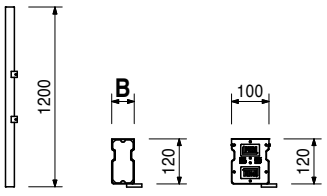




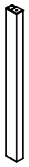
		Wall Thickness Comp. MX 120	**B**
114212	6,420	**Wall Thickness Comp. MX 120 x 4**	40
114191	6,980	**Wall Thickness Comp. MX 120 x 5**	50
114181	7,480	**Wall Thickness Comp. MX 120 x 6**	60
114142	4,510	**Wall Thickness Comp. MX 120 x 10, Alu**	100

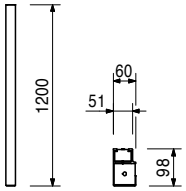
For adjusting to wall thicknesses.



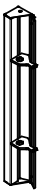


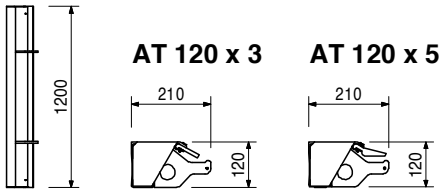
Item no.	Weight kg	
101823	3,590	**Filler Profile TPP 120, Alu** For compensation with 21 mm filler plates.





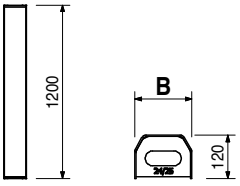
		Stopend Panels TRIO AT	**Note**
023067	7,780	**Stopend Panel TRIO AT 120 x 3**	Concrete cover approx. 30 mm.
105978	8,580	**Stopend Panel TRIO AT 120 x 5**	
		External piece for stopend formwork.	





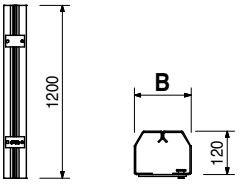
		Stopend Panels TRIO MT	**B**
023068	11,800	**Stopend Panel TRIO MT 120 x 20**	118
023069	13,500	**Stopend Panel TRIO MT 120 x 24/25**	158
023071	16,300	**Stopend Panel TRIO MT 120 x 30**	218
023072	18,500	**Stopend Panel TRIO MT 120 x 35/36**	268
		Centre piece without waterstop bar installation for stopend formwork.	



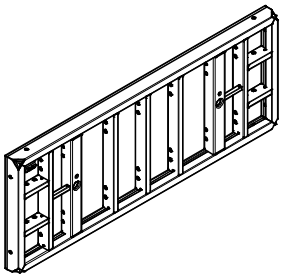


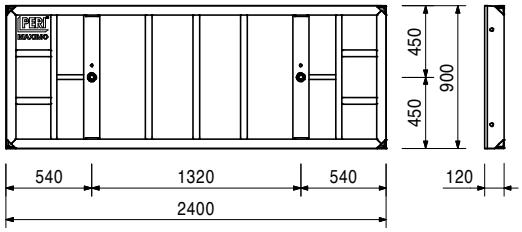
		Stopend Panels TRIO MTF	**B**
023081	12,800	**Stopend Panel TRIO MTF 120 x 20**	118
023080	14,700	**Stopend Panel TRIO MTF 120 x 24/25**	158
023078	16,800	**Stopend Panel TRIO MTF 120 x 30**	218
023079	18,600	**Stopend Panel TRIO MTF 120 x 35/36**	268
		Centre piece with waterstop bar installation for stopend formwork.	



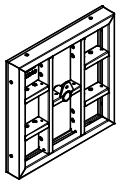


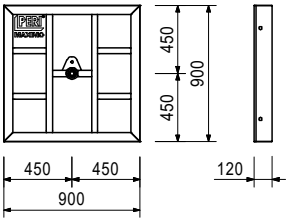
Item no.	Weight kg	
124147	121,000	**Panel MX 18, 90 x 240** 2.160 m². Panel with 18 mm plywood.



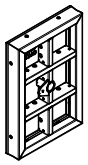


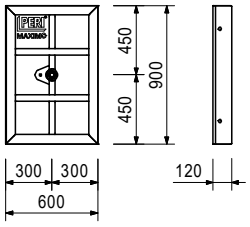
124148	48,900	**Panel MX 18, 90 x 90** 0.810 m². Panel with 18 mm plywood.





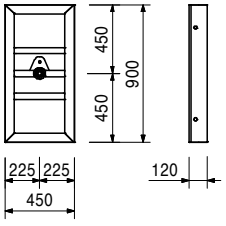
124149	36,600	**Panel MX 18, 90 x 60** 0.540 m². Panel with 18 mm plywood.



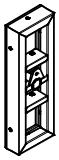


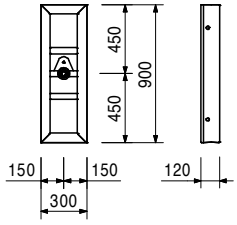
124150	31,200	**Panel MX 18, 90 x 45** 0.405 m². Panel with 18 mm plywood.



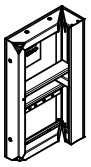


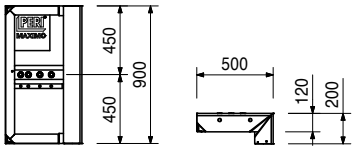
Item no.	Weight kg	
124151	22,000	**Panel MX 18, 90 x 30** 0.270 m². Panel with 18 mm plywood.



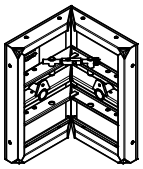


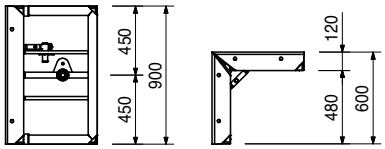
124192	36,900	**Inside Corner MXI 18, 90 x 50/20** 0.630 m². Panel with 18 mm plywood. For 90° internal corners. **Complete with** 4 pc. 125099 Plug MXM 18, Ø 26 4 pc. 123604 Sealing MX 18



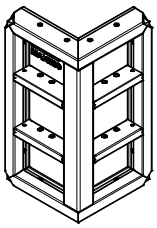


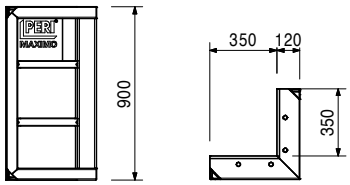
124198	68,100	**Inside Corner MXI 18, 90 x 60** 1.080 m². Panel with 18 mm plywood. For 90° internal corners.



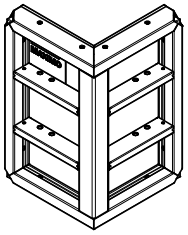


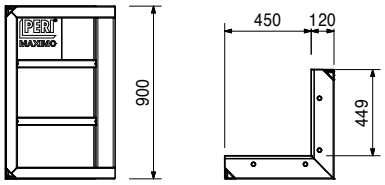
126917	52,400	**Outside Corner MXA 90 x 35** 0.630 m². Panel with 18 mm plywood. For 90° external corners.



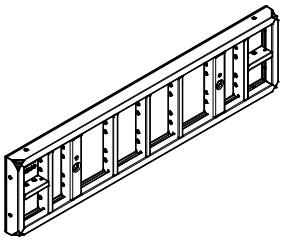


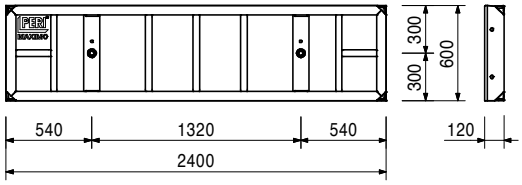
Item no.	Weight kg	
126923	59,600	**Outside Corner MXA 90 x 45** 0.808 m². Panel with 18 mm plywood. For 90° external corners.



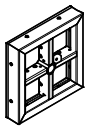


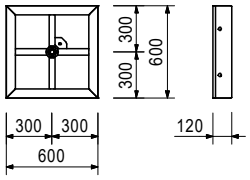
124157	88,100	**Panel MX 18, 60 x 240** 1.440 m². Panel with 18 mm plywood.



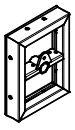


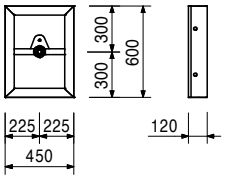
124158	28,400	**Panel MX 18, 60 x 60** 0.360 m². Panel with 18 mm plywood.



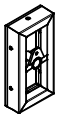


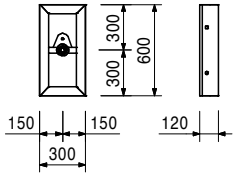
124160	21,900	**Panel MX 18, 60 x 45** 0.270 m². Panel with 18 mm plywood.





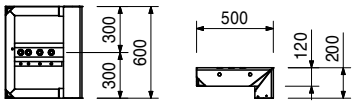
124159	16,200	**Panel MX 18, 60 x 30** 0.180 m². Panel with 18 mm plywood.



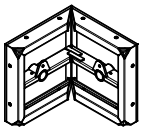


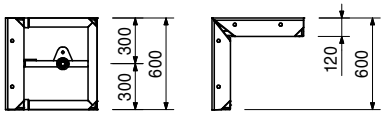
Item no.	Weight kg		
124193	29,700	**Inside Corner MXI 18, 60 x 50/20** 0.420 m². Panel with 18 mm plywood. For 90° internal corners.	**Complete with** 4 pc. 124895 PVC Plug MXM 15 Ø 18.3 4 pc. 123604 Sealing MX 18



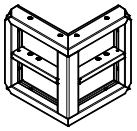


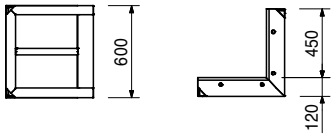
124199	45,400	**Inside Corner MXI 18, 60 x 60** 0.720 m². Panel with 18 mm plywood. For 90° internal corners.



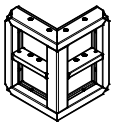


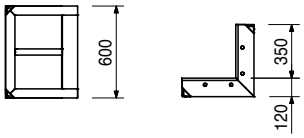
112837	42,800	**Outside Corner MXA 60 x 45** 0.540 m². Panel with 18 mm plywood. For 90° external corners.



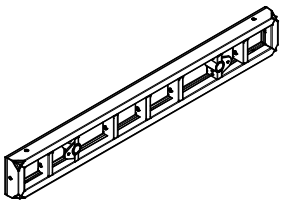


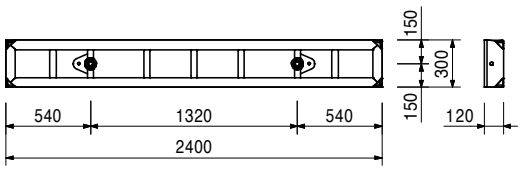
112778	37,400	**Outside Corner MXA 60 x 35** 0.420 m². Panel with 18 mm plywood. For 90° external corners.





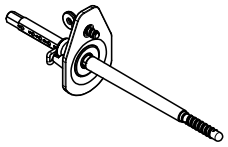
124162	52,900	**Panel MX 18, 30 x 240** 0.720 m². Panel with 18 mm plywood.



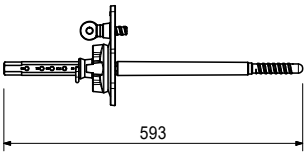


Item no.	Weight kg
123901	4,880

Tie MX 18, 15 – 25
For wall thicknesses 15 – 25 cm.

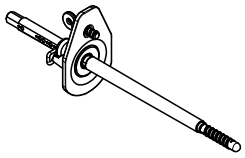


Note
Spray with release agent before every use to ensure easier striking.
Technical Data
Permissible tension force 130 kN.

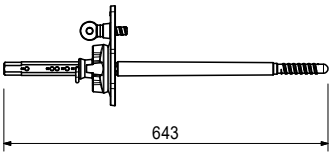


123902	5,080

Tie MX 18, 20 – 30
For wall thicknesses 20 – 30 cm.

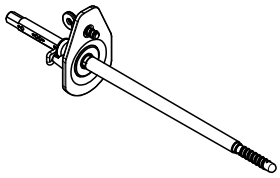


Note
Spray with release agent before every use to ensure easier striking.
Technical Data
Permissible tension force 130 kN.

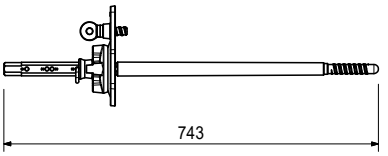


123903	5,490

Tie MX 18, 30 – 40
For wall thicknesses 30 – 40 cm.

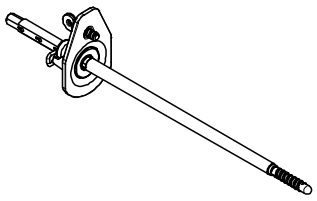


Note
Spray with release agent before every use to ensure easier striking.
Technical Data
Permissible tension force 130 kN.

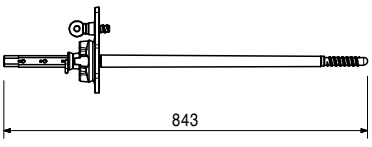


123904	5,900

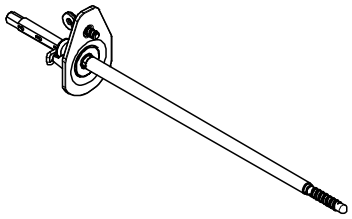
Tie MX 18, 40 – 50
For wall thicknesses 40 – 50 cm.



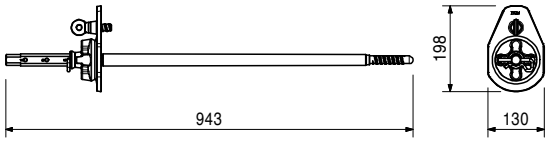
Note
Spray with release agent before every use to ensure easier striking.
Technical Data
Permissible tension force 130 kN.



Item no.	Weight kg	
123905	6,310	**Tie MX 18, 50 – 60** For wall thicknesses 50 – 60 cm.



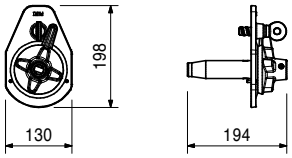
Note
Spray with release agent before every use to ensure easier striking.
Technical Data
Permissible tension force 130 kN.



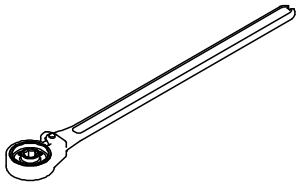
123900	3,570	**Wingnut MX 18** Counter nut for Tie MX 18.

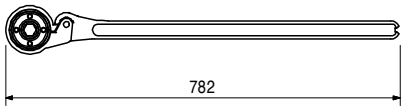


Technical Data
Permissible tension force 130 kN.

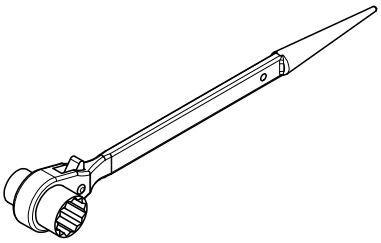


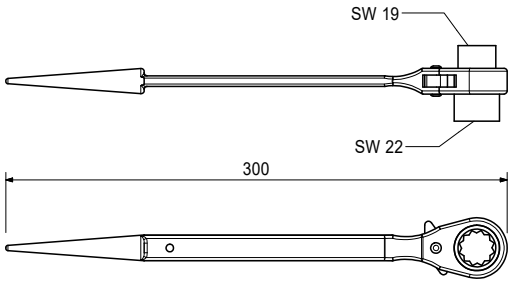
108719	3,640	**Tie Rod Spanner TRH SW 22** For Anchor TRH.





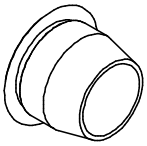
796061	3,940	**Scaffold Builders Ratchet**

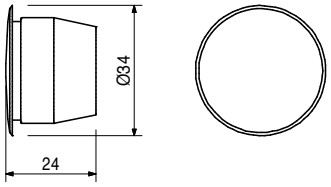




Item no.	Weight kg
125099	0,005

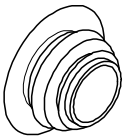
Plug MXM 18, Ø 26
For MAXIMO Multi Panels MXM 18, Internal Corners MXI 18 50/20 and standard elements for single faced use.

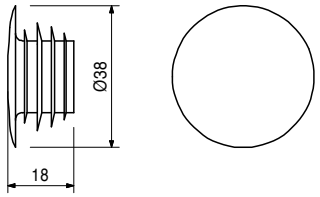




125300	0,003

Plug MX 18, Ø 24 – 28
For closing MX 18 tie holes in the concrete.

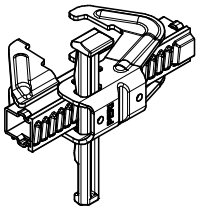


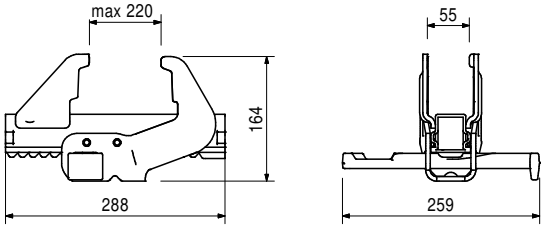


023500	4,580

Alignment Coupler BFD, galv.
For all panel connections for MAXIMO, TRIO and RUNDFLEX. Fillers up to 10 cm.

Technical Data
Permissible tension force 20.0 kN.

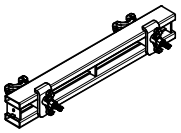


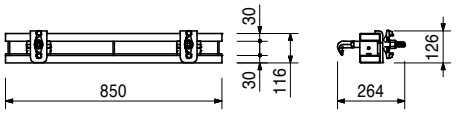


124941	14,100

Waler MAR 85-3
For longitudinal compensation, height extensions, stopend formwork and special applications with MAXIMO. With captive connecting components.

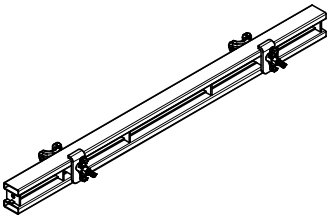
Technical Data
Permissible bending moment 3.9 kNm.



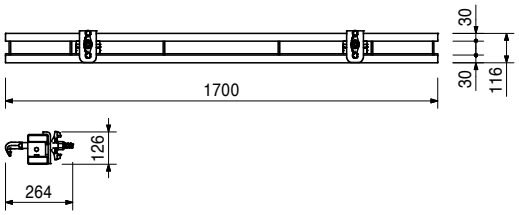


Item no.	Weight kg
124942	23,400

Waler MAR 170-3
For longitudinal compensation, height extensions, stopend formwork and special applications with MAXIMO. With captive connecting components.

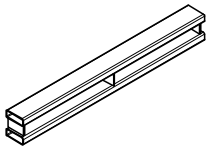


Technical Data
Permissible bending moment 3.9 kNm.

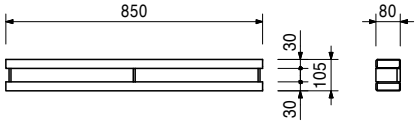


023551	8,520

Waler 85
Corresponds to Compensation Waler TAR 85 but without mounting hooks.



Technical Data
Permissible bending moment 4.4 kNm.

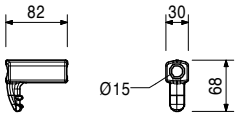


023820	0,375

Hook Tie Head DW 15, galv.
For connecting accessories to MAXIMO and TRIO panels. DW 15 thread.

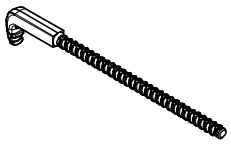


Technical Data
Permissible tension force 20.0 kN.

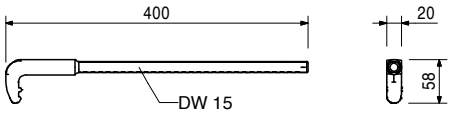


023650	0,769

Hook Tie DW 15, l = 400 mm, galv.
For connecting accessories to MAXIMO and TRIO panels. DW 15 thread.

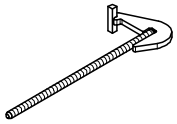


Technical Data
Permissible tension force 20.0 kN.

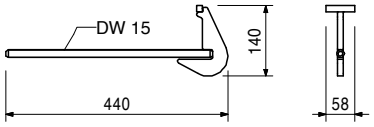


023640	1,140

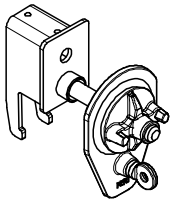
Bulkhead Tie TS, galv.
For force application from the stopend formwork in MAXIMO and TRIO panels. DW 15 thread.

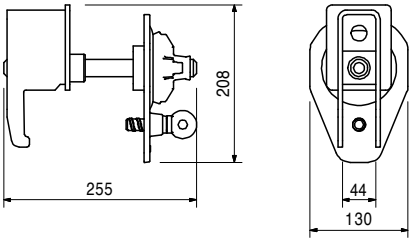


Technical Data
Permissible tension force 20.0 kN.

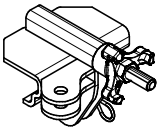


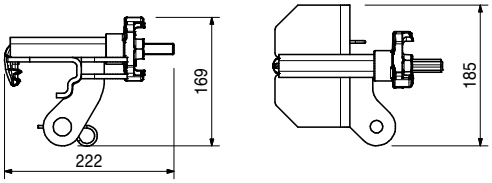
Item no.	Weight kg	
115640	5,980	**Bulkhead Tie MX DW 20** For forming wall offsets with MAXIMO in connection with the Multi Panel MXM.



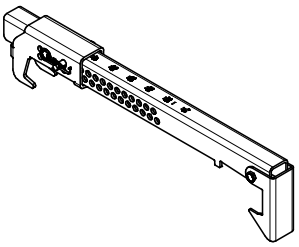


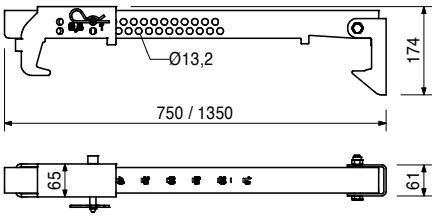
023660	3,300	**Brace Connector TRIO, galv.** For connecting push-pull props and kicker braces to MAXIMO and TRIO Panels. Mounted on vertical and horizontal struts. **Complete with** 1 pc. 027170 Pin Ø 16 x 42, galv. 1 pc. 018060 Cotter Pin 4/1, galv.



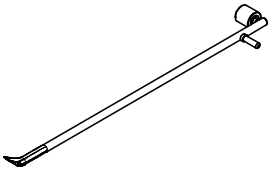


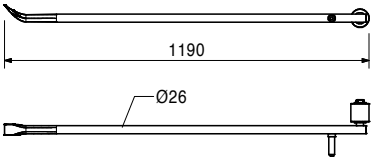
		Tension and Compression Braces MX
115350	6,330	**Tension and Compression Brace MX 15 – 40**
123842	9,090	**Tension and Compression Brace MX 15 – 100** For use with foundation formwork up to 1.20 m high and as replacement for the top anchor of the MAXIMO 330. **Complete with** 1 pc. 115331 Bolt Ø 12 x 96, galv. 1 pc. 018060 Cotter Pin 4/1, galv. **Note** Adjustable in 0.5-cm-increments from 15 to 40 cm and in 0.5-cm-increments from 15 to 100 cm. **Technical Data** Permissible tension and compressive force 9 kN.





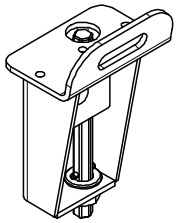
112588	5,520	**Stripping Bar TRIO**



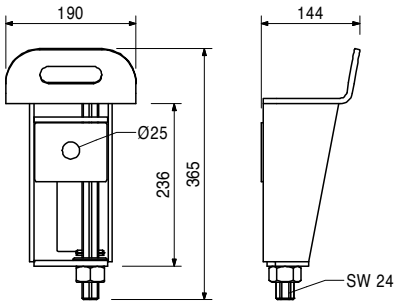


Item no.	Weight kg
101633	9,790

Adjusting Bracket MX
For erecting PERI Panel Formwork up to h = 4.50 m.

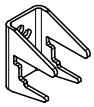


Note
Follow Instructions for Use!
Height Adjustment ± 5 cm.

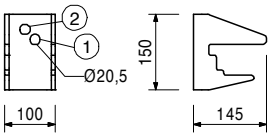


023630	2,080

Top Tie Bracket-2 AH, galv.
For grid-independent anchoring outside of the panel, especially for foundations and height extensions.

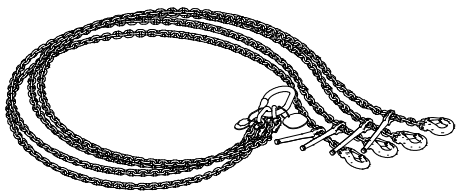


Technical Data
Permissible anchor tension force:
Hole 1 = 30 kN
Hole 2 = 15 kN



117321	31,000

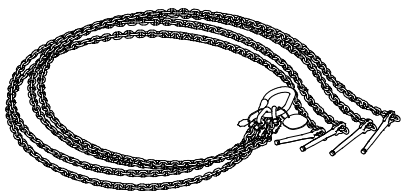
Lifting Gear Combi MX
For transporting stacks of MAXIMO and TRIO Panels. For attaching Lifting Hook MAXIMO 1.5 t and Stacking Device MAXIMO.



Note
Follow Instructions for Use!

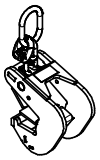
117322	25,000

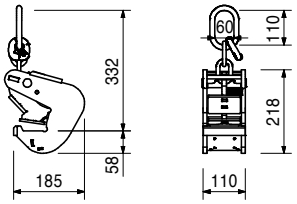
Lifting Gear MX
For transporting stacks of MAXIMO and TRIO Panels.



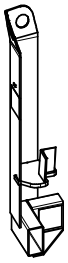
Note
Follow Instructions for Use!

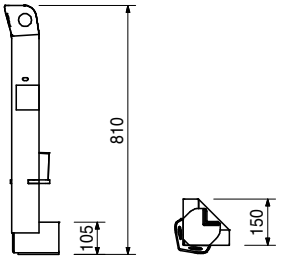
Item no.	Weight kg		
115168	7,470	**Lifting Hook MAXIMO 1.5 t** For transporting MAXIMO and TRIO Panels.	**Note** Follow Instructions for Use! **Technical Data** Permissible load-bearing capacity: Steel elements 1.5 t Alu elements 750 kg



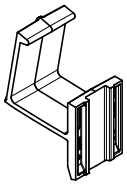


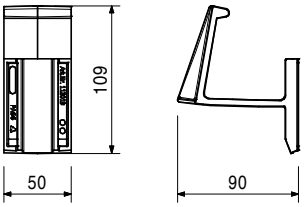
115058	7,450	**Stacking Device MAXIMO** For stacking and transportation of 2 – 5 MAXIMO or TRIO Panels of all sizes. Suitable for crane and fork-lift transport.	**Note** Follow Instructions for Use! **Technical Data** Permissible load-bearing capacity 650 kg per post, 2.6 t per stack.



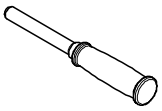


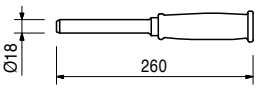
113019	0,068	**Stacking Device MX** For easy stacking of MAXIMO panels.	





023440	0,312	**Lifting Pin TRIO** For easy carrying of TRIO Panels.	





Item no.	Weight kg
023670	12,800
023680	17,000

Scaffold Brackets TRG

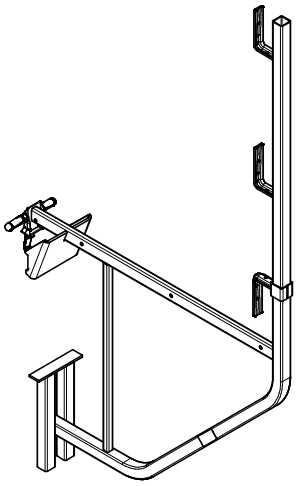
Scaffold Bracket TRG 80

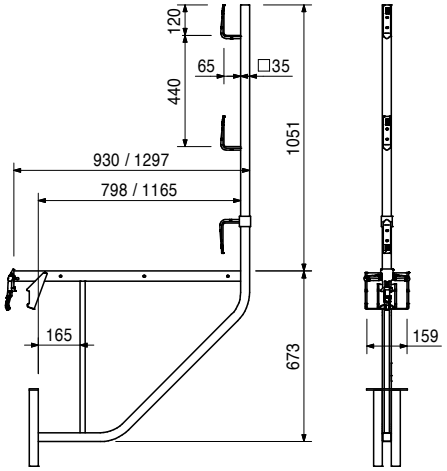
Scaffold Bracket TRG 120

For assembly of a working and concreting scaffold with MAXIMO and TRIO. Mounted on horizontal and vertical struts.

Technical Data

Permissible load 150 kg/m2
with maximum width of influence 1.35 m.





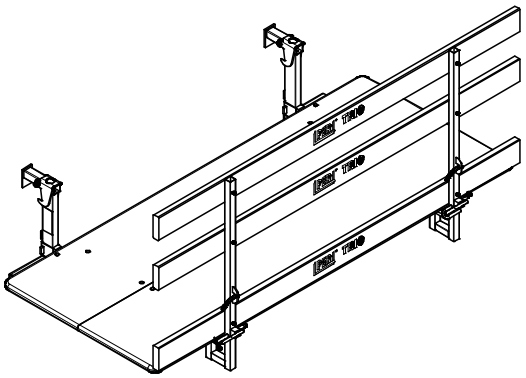
Item no.	Weight kg
022950	129,000

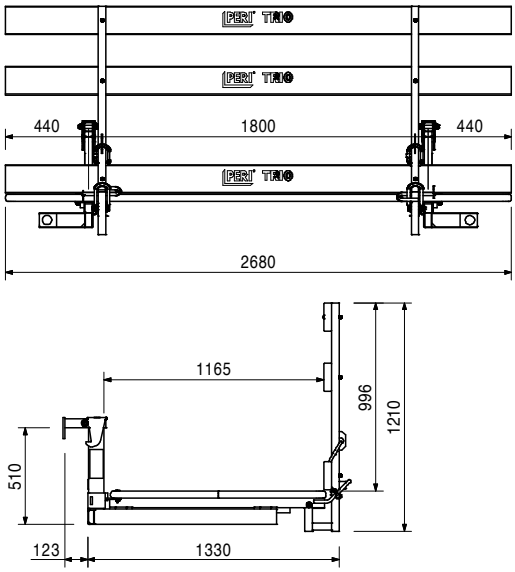
Concreting Platform TRIO 120 x 270

Working and concreting platform for MAXIMO and TRIO. Attached from above to the panel, self-securing.

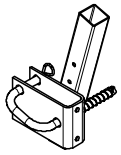
Technical Data

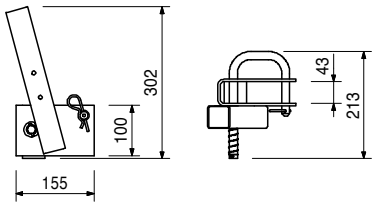
Permissible load 150 kg/m2.





Item no.	Weight kg	
101592	2,810	**Guardrail Post Holder TRIO** For assembling of a guardrail to TRIO panels. **Complete with** 1 pc. 018060 Cotter Pin 4/1, galv.



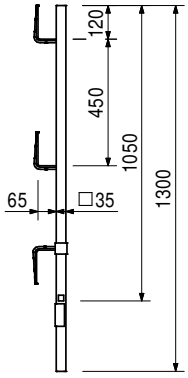


Accessories

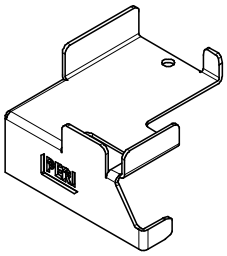
116292	4,730	**Guardrail Post HSGP-2**

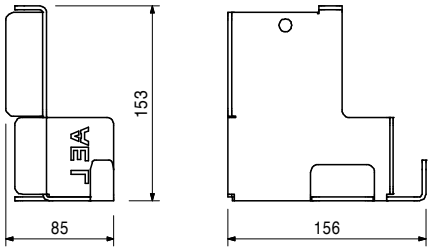
116292	4,730	**Guardrail Post HSGP-2** As guardrail for different systems.



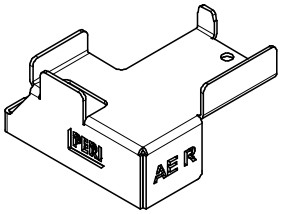


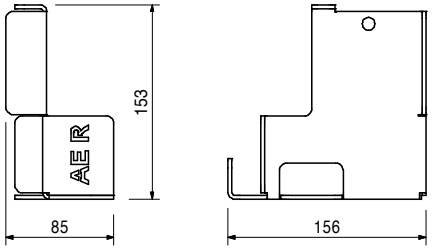
118103	0,700	**Stacking Device L MXA**



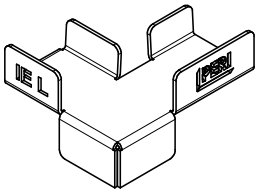


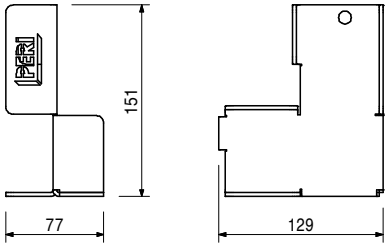
118105	0,699	**Stacking Device R MXA**



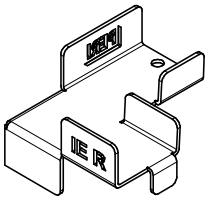


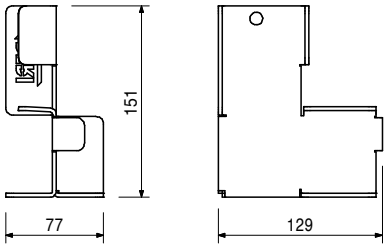
Item no.	Weight kg	
118110	0,614	**Stacking Device L MXI**



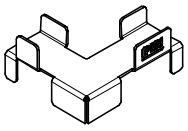


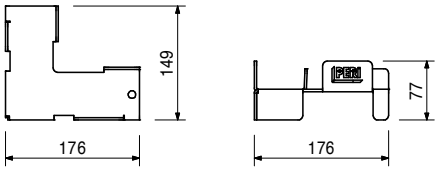
118112	0,613	**Stacking Device R MXI**





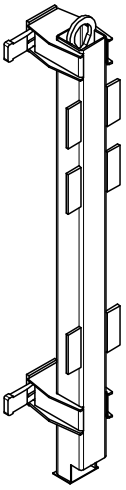
118100	0,652	**Stacking Device MX Flat for Shaft Corner MXSE**

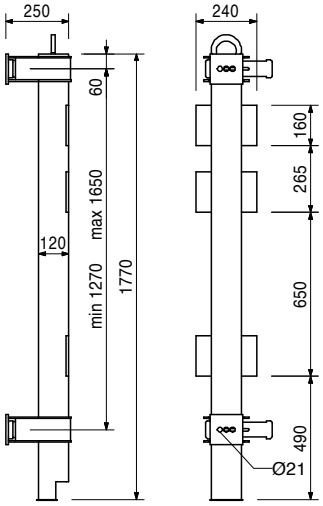




Item no.	Weight kg	
027680	49,600	**Connector SB-1,2 - MX/TR/D** For assembly of Brace Frame SB-1, 2 to MAXIMO, TRIO and DOMINO panels.

Technical Data
Permissible load-bearing point capacity 1.0 t with crane sling angle ≤ 15°.



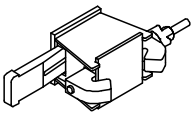


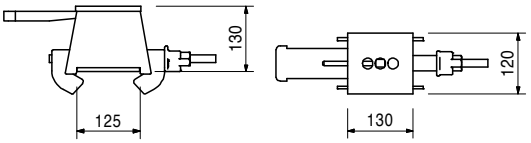
Accessories

027690	0,368	**Bolt SB-TRIO/DOMINO, galv.**
027590	2,400	**Hook Strap for SB-1, 2**
113255	0,414	**Bolt SB-MAXIMO, galv.**
114107	1,190	**Sleeve SB-MAXIMO, galv.**
114417	1,400	**Sleeve SB-MAXIMO WDMX**

025740	9,140	**Connector SB-A, B, C - MX/TR/D** For connecting MAXIMO, TRIO and DOMINO panels with Brace Frames SB-A0, A, B, C.

Note
1 piece per anchor point.

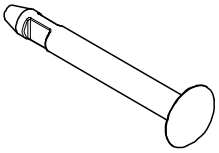


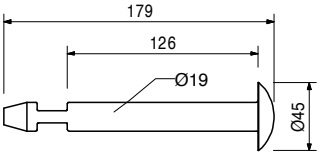


Accessories

027690	0,368	**Bolt SB-TRIO/DOMINO, galv.**
113255	0,414	**Bolt SB-MAXIMO, galv.**
114107	1,190	**Sleeve SB-MAXIMO, galv.**
114417	1,400	**Sleeve SB-MAXIMO WDMX**

113255	0,414	**Bolt SB-MAXIMO, galv.** For connecting MAXIMO panels with Brace Frame SB.

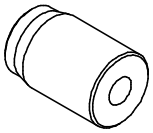


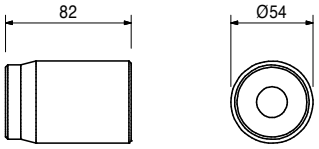


Accessories

114107	1,190	**Sleeve SB-MAXIMO, galv.**
114417	1,400	**Sleeve SB-MAXIMO WDMX**

Item no.	Weight kg		
114107	1,190	**Sleeve SB-MAXIMO, galv.** For connecting MAXIMO panels with Brace Frame SB.	**Note** For use with Sealing Sleeve MX Ø 16 item no. 112342 and Nut Sealing Sleeve MX Ø 16 item no. 112338.

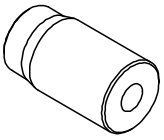


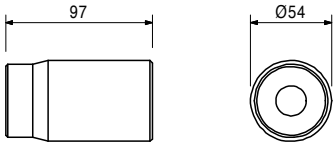


Accessories

113255	0,414	**Bolt SB-MAXIMO, galv.**
114417	1,400	**Sleeve SB-MAXIMO WDMX**

114417	1,400	**Sleeve SB-MAXIMO WDMX** For connecting MAXIMO panels to Brace Frames SB.	**Note** For use with Sealing Sleeve MX 15 item no. 123603 and Sealing Sleeve MX 18 item no. 123604.

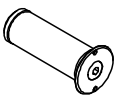


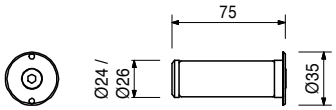


Accessories

113255	0,414	**Bolt SB-MAXIMO, galv.**

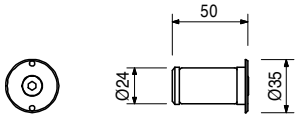
		Stoppers MX 18
127430	0,104	**Stopper MX 18 – 75 MF-S**
127488	0,114	**Stopper MX 18 – 75 MF-L**





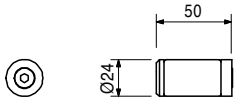
127589	0,082	**Stopper MX 18 – 50 MF LS**



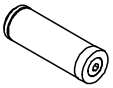


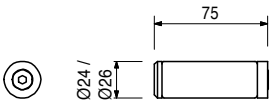
127590	0,077	**Stopper MX 18 – 50 OF LS**



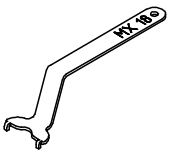


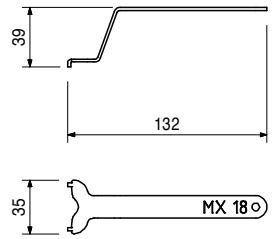
Item no.	Weight kg	
		Stoppers MX 18
127432	0,099	**Stopper MX 18 – 75 OF-S**
127490	0,107	**Stopper MX 18 – 75 OF-L**





127434 | 0,038 | **Stud Spanner MX 18**
Contained within the packaging units.

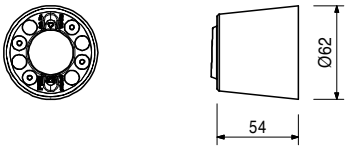




127425 | 0,160 | **Magnet Cone MX 18 – 55**
For the use with MAXIMO.
Use with Anchor MX.

Note
For the use with waterproof concrete or architectural concrete.



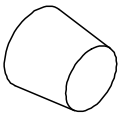


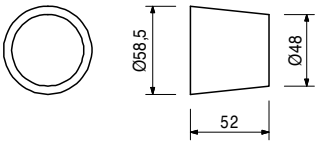
Accessories

126696 | 1,220 | **Magnet Cone Spanner MX 15 / MX 18**

031643 | 0,241 | **DK Concrete Cone UNI 58/52**
For closing anchor points with DK Sealing Cone DW 15/55, DW 20/55, DW 26/55 and SK Anchor Cone DW 15.

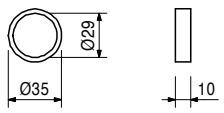
Note
Delivery unit 50 pieces.



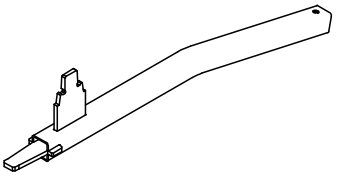


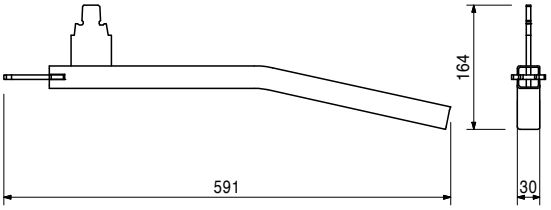
125438 | 0,024 | **Spacer MX 18 – 10 mm**





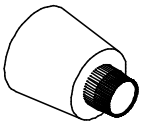
Item no.	Weight kg	
126696	1,220	**Magnet Cone Spanner MX 15 / MX 18** For dismantling of Magnet Cone MX 15 and MX 18.

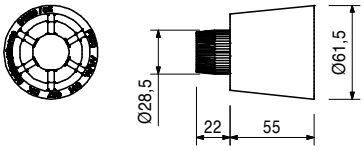




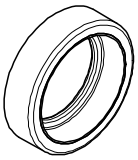
031637	0,055	**DK Cone DW 20/55** For waterproof, fire-resistant and soundproof anchor points with Tie Rod DW 20. Use with Spacer Tube rough 28.

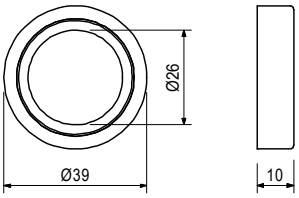
Note
Delivery unit 50 pieces.



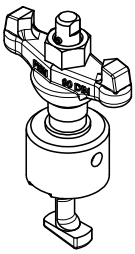


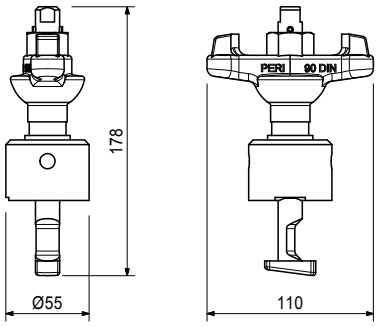
123604	0,015	**Sealing MX 18**



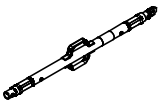


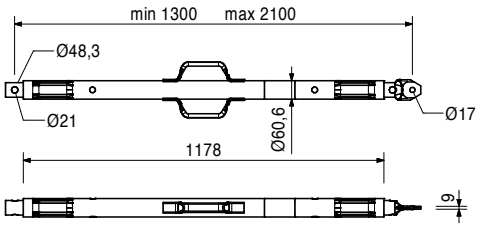
125337	1,390	**Extraction Tool MX Sealing** For remove of the Sealing MX 15 and MX 18.



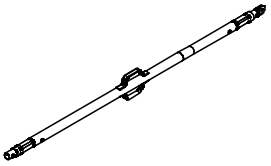


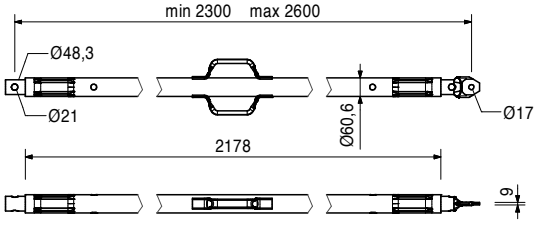
Item no.	Weight kg		
117466	10,600	**Push-Pull Prop RS 210, galv.** Extension length l = 1.30 – 2.10 m. For aligning PERI formwork systems and precast concrete elements.	**Note** Permissible load see PERI Design Tables.



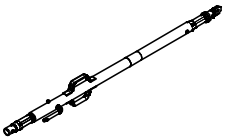


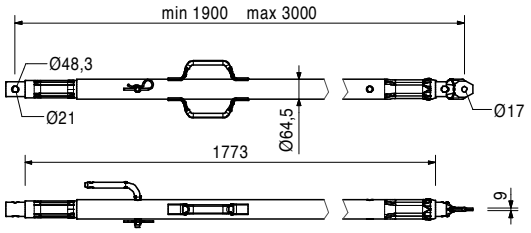
118238	12,200	**Push-Pull Prop RS 260, galv.** Extension length l = 2.30 – 2.60 m. For aligning PERI formwork systems and precast concrete elements.	**Note** Permissible load see PERI Design Tables.



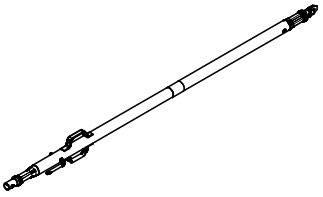


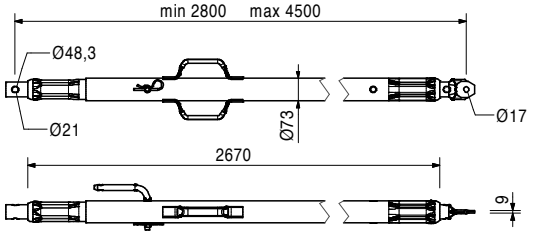
117467	15,500	**Push-Pull Prop RS 300, galv.** Extension length l = 1.90 – 3.00 m. For aligning PERI formwork systems and precast concrete elements.	**Note** Permissible load see PERI Design Tables.





117468	23,000	**Push-Pull Prop RS 450, galv.** Extension length l = 2.80 – 4.50 m. For aligning PERI formwork systems and precast concrete elements.	**Note** Permissible load see PERI Design Tables.

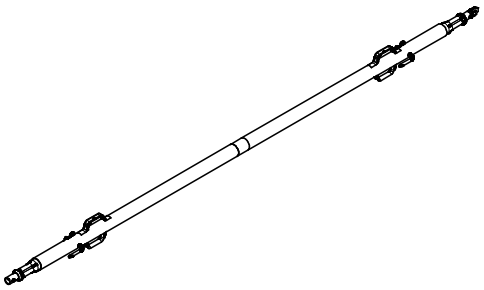


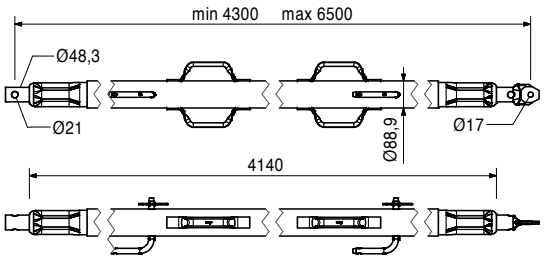


Item no.	Weight kg
117469	40,000

Push-Pull Prop RS 650, galv.
Extension length l = 4.30 – 6.50 m.
For aligning PERI formwork systems and precast concrete elements.

Note
Permissible load see PERI Design Tables.

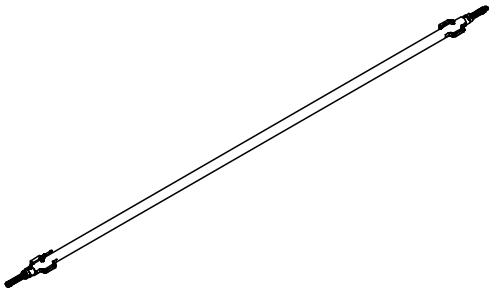


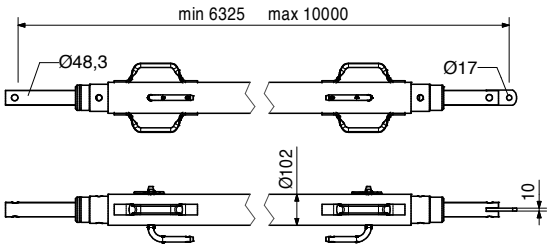


028990	115,000

Push-Pull Prop RS 1000, galv.
Extension length l = 6.40 – 10.00 m.
For aligning PERI formwork systems.

Note
Permissible load see PERI Design Tables.

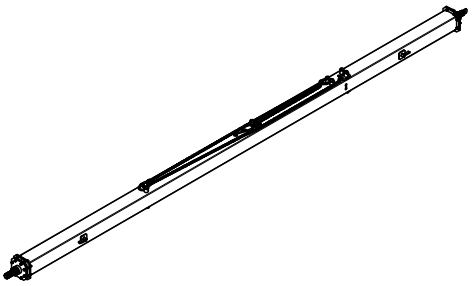


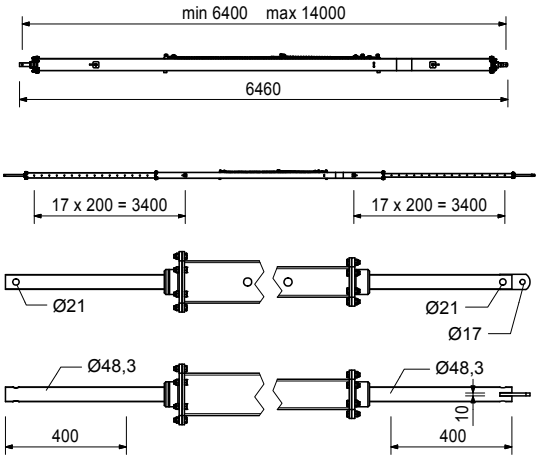


103800	271,000

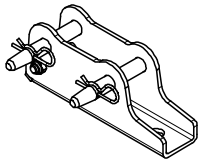
Push-Pull Prop RS 1400, galv.
Extension length l = 6.40 – 14.00 m.
For aligning PERI formwork systems.

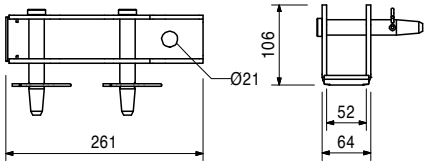
Note
Permissible load see PERI Design Tables.
Chain can be operated from bottom.





Item no.	Weight kg		
117343	3,250	**Base Plate-2 for RS 210 – 1400, galv.** For assembly of Push-Pull Props RS 210, 260, 300, 450, 650, 1000 and 1400.	**Complete with** 2 pc. 105400 Pin Ø 20 x 140, galv. 2 pc. 018060 Cotter Pin 4/1, galv.

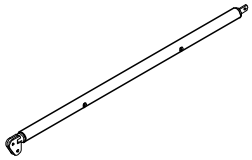


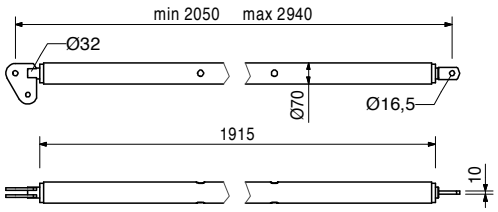


Accessories

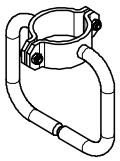
124777	0,210	**Anchor Bolt PERI 14/20 x 130**

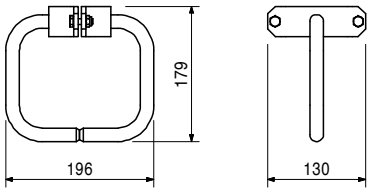
028010	17,900	**Push-Pull Prop RSS I** Extension length l = 2.05 – 2.94 m. For aligning PERI formwork systems.	**Note** Permissible load see PERI Design Tables.



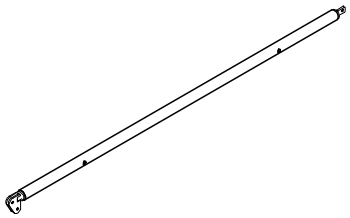


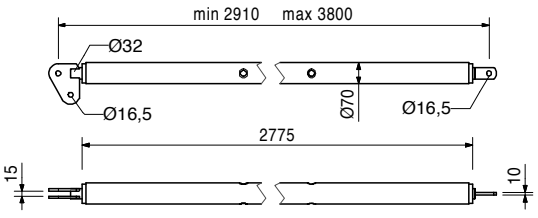
113397	1,600	**Spindle Handle RSS / AV** Spindle Handle for screwing on Push-Pull Props RSS I, RSS II, RSS III and Kickers AV 210 and AV 190 complete with 2 bolts and nuts M8.



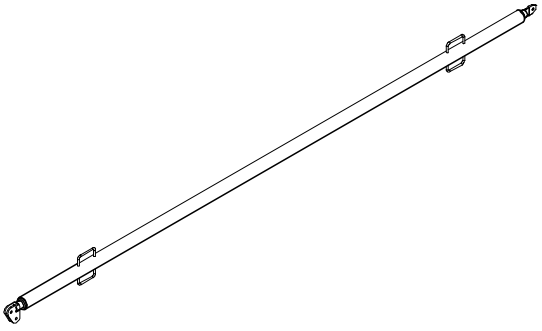


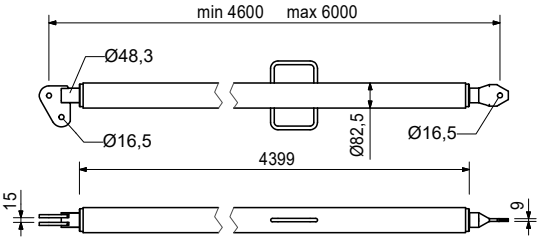
028020	22,000	**Push-Pull Prop RSS II** Extension length l = 2.91 – 3.80 m. For aligning PERI formwork systems.	**Note** Permissible load see PERI Design Tables.



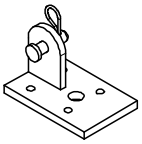


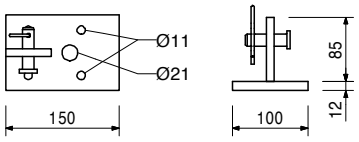
Item no.	Weight kg		
028030	38,400	**Push-Pull Prop RSS III** Extension length l = 4.60 – 6.00 m. For aligning PERI formwork systems.	**Note** Permissible load see PERI Design Tables.





106000	1,820	**Base Plate-2 for RSS, galv.** For assembly of RSS Push-Pull Props.	**Complete with** 1 pc. 027170 Pin Ø 16 x 42, galv. 1 pc. 018060 Cotter Pin 4/1, galv.





Accessories

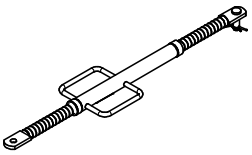
124777	0,210	**Anchor Bolt PERI 14/20 x 130**

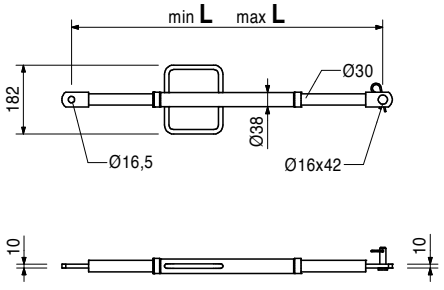
		Kickers AV	**min. L**	**max. L**
057087	3,720	**Kicker AV 82**	500	820
057088	4,410	**Kicker AV 111**	790	1110

For aligning PERI formwork systems.

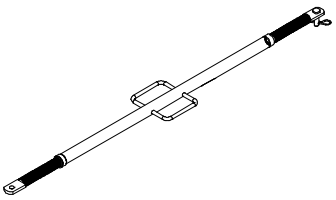
Complete with
1 pc. 027170 Pin Ø 16 x 42, galv.
1 pc. 018060 Cotter Pin 4/1, galv.

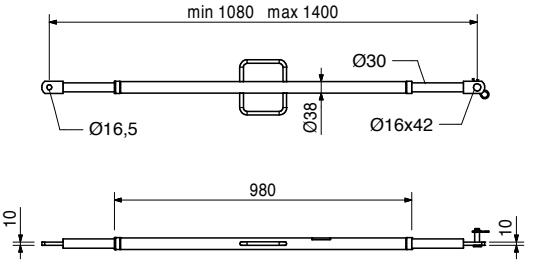
Note
Permissible load see PERI Design Tables.



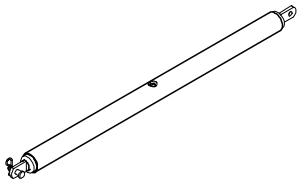


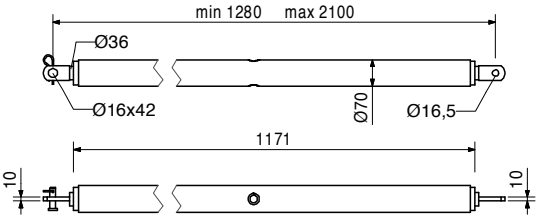
Item no.	Weight kg		
028110	5,180	**Kicker AV 140** Extension length l = 1.08 – 1.40 m. For aligning PERI formwork systems.	**Complete with** 1 pc. 027170 Pin Ø 16 x 42, galv. 1 pc. 018060 Cotter Pin 4/1, galv. **Note** Permissible load see PERI Design Tables.



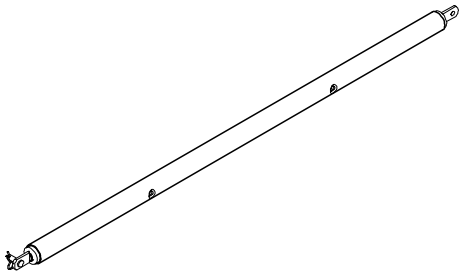


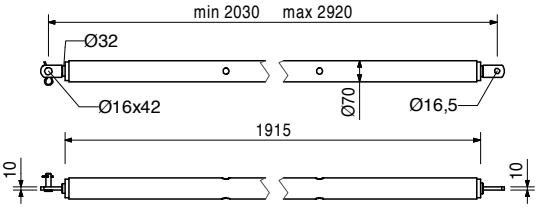
108135	12,900	**Kicker AV 210** Extension length l = 1.28 – 2.10 m. For aligning PERI formwork systems.	**Complete with** 1 pc. 027170 Pin Ø 16 x 42, galv. 1 pc. 018060 Cotter Pin 4/1, galv. **Note** Permissible load see PERI Design Tables.



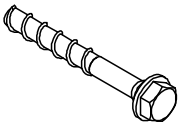


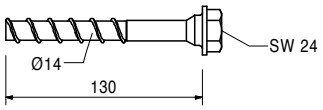
028120	17,000	**Kicker AV RSS III** Extension length l = 2.03 – 2.92 m. For aligning PERI formwork systems.	**Complete with** 1 pc. 027170 Pin Ø 16 x 42, galv. 1 pc. 018060 Cotter Pin 4/1, galv. **Note** Permissible load see PERI Design Tables.





124777	0,210	**Anchor Bolt PERI 14/20 x 130** For temporary fixation to reinforced concrete structures.	**Note** See PERI data sheet! Drilling Ø 14 mm.





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