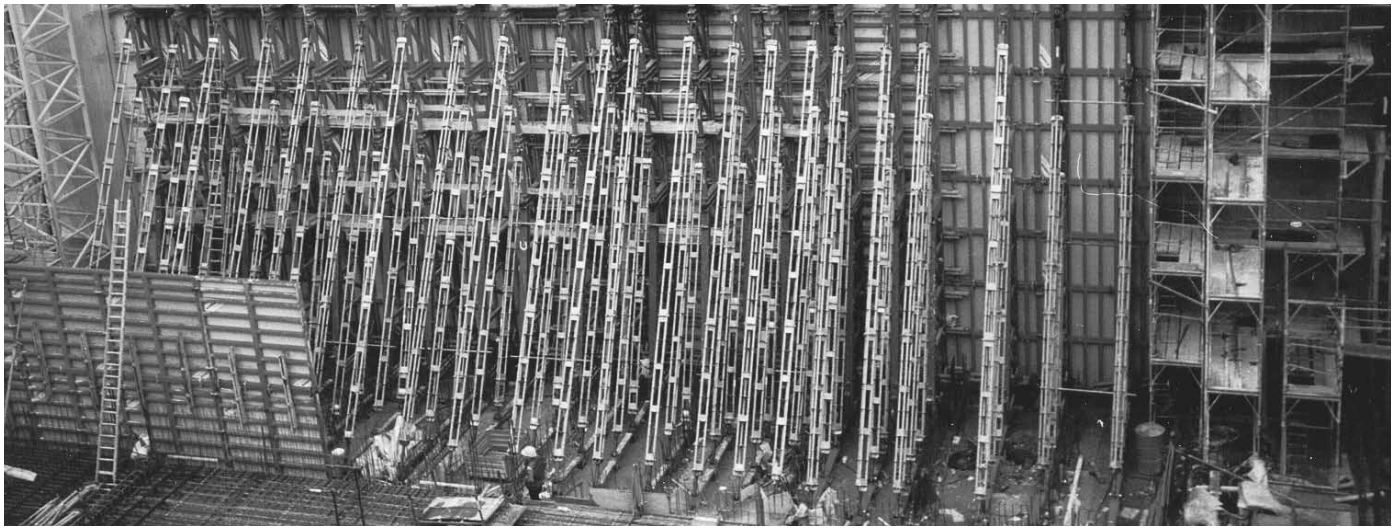
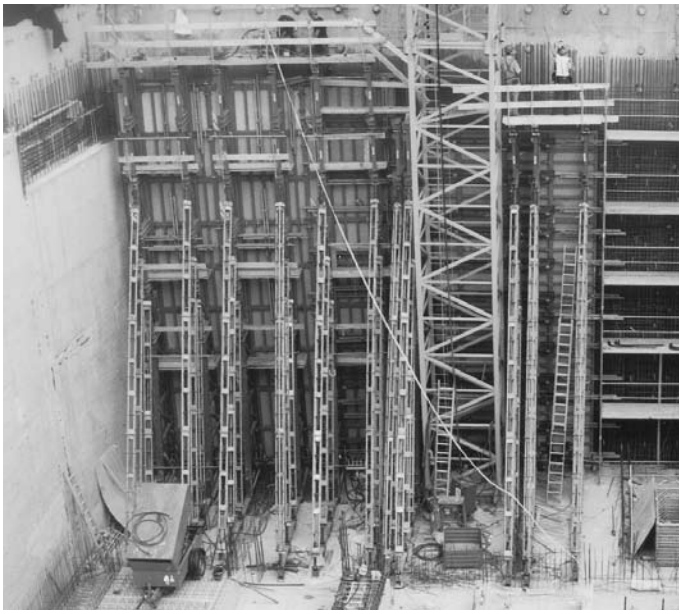
meva



Heavy-Duty Braces Triplex

Assembly and Operating Instructions



Product features and use

Triplex is a heavy-duty brace (three chords) to align and brace formwork with heights exceeding 6,00 m. The system consists of modules which are assembled to the required length on site. The standard components are intermediate pieces 300 cm, 200 cm, 100 cm and 50 cm as well as top units with spindles. The right-hand and left-hand threads of the top units allow for a precise adjustment.

Triplex is available in two different types:

- **Triplex R** is a brace for formwork heights exceeding 6,00 m. It is attached to the formwork with a connector and provided with a foot plate to be anchored to the floor slab.

- **Triplex SB** is a reinforced version of the Triplex R brace (bigger tubes). It is primarily used as an additional static support and for load transfer when using support frames STB 450 with height extensions 150 for single-sided wall formwork of approx. 6,00 m or higher.

Important notes for the use of Triplex

- The Triplex heavy-duty braces must only be assembled and stripped by persons having an adequate working knowledge.
- The assembly sequence shown in this manual is binding.
- All formwork parts must be visually checked for damages before assembly. Damaged parts must not be used.

How to read this manual

Abbreviations, measurements, figures and tables
DIN means Deutsche Industrie-Norm (German Industrial Standard). E DIN (E = Entwurf / draft) means that the DIN is in draft status and not yet approved of. Any further abbreviations are explained where they are used the first time.

TÜV means Technischer Überwachungsverein. This is the independent German organisation that tests the safety of technical installations, machinery and motor vehicles. If a product passes the test, it is permitted to carry the GS seal. GS stands for Geprüfte Sicherheit (approved safety).

Measurements: This manual uses the metric system and thus m (for metre), cm (for centimetre) and mm (for millimetre). Dimensions without a measure are in cm.

Decimal numbers: Note that the comma is used in a decimal numbers, e.g. 1,5 means 1 and a half.

The page numbers in this manual start with TRIPLEX. The figures and tables are numbered per page. Depending on its product abbreviation, a cross reference in the text refers to a page, table or figure in or in another manual.

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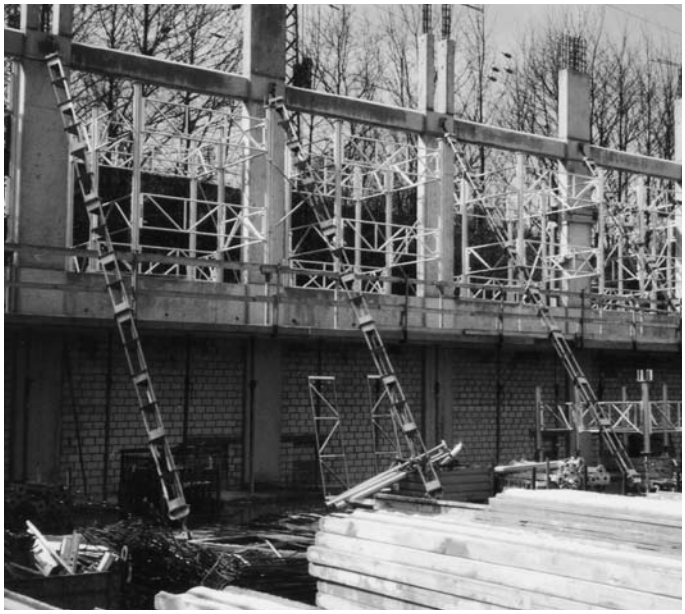

Please note

This Technical Instruction Manual contains information, instructions and hints describing how to use the MEVA equipment on the construction site in a proper, quick and economic way. Most examples shown are standard applications that will occur in practice most often. For an easier understanding of the illustrations, some details are shown without the safety features required for the equipment use. For more complicated or special applications not covered in this manual, please contact the MEVA experts for advice.

When using our products the federal, state and local codes and regulations must be observed. Please adhere to this manual when applying the equipment described here. Deviations require engineering calculations and analysis to guarantee safety. Please observe the assembly instructions that your local contractor or employer has created for the site on which the MEVA equipment is used. Such instructions are intended to minimise site-specific risks and must contain the following details:

- The order in which all working steps including assembly and disassembly must be carried out
- The weight of the panels and other system parts
- The type and number of ties and braces as well as the distance between them
- The location, number and dimensions of working scaffolds including working area and protection against falling down
- Pick points for panel transport by crane. With regard to panel tranport, please observe this manual. Any deviation will require a static proof.

Important: Generally, only well maintained material may be used. Damaged parts must be replaced. Apply only original MEVA spare parts for replacement.

Attention: Never wax or oil assembly locks.

Contents

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Triplex R overview

The Triplex R braces are used to brace and align wall and column formwork with heights over 6,00 m.

Triplex R braces are delivered as several modules which are assembled to the required length on site. See the Product List for the individual components required for the job.

The Triplex R 300 with right-hand thread comes with a pre-assembled foot plate 48 (Fig. 4.1).

A bend-proof module connection is achieved with 6 bolts at the gusset plate (Fig. 4.2).

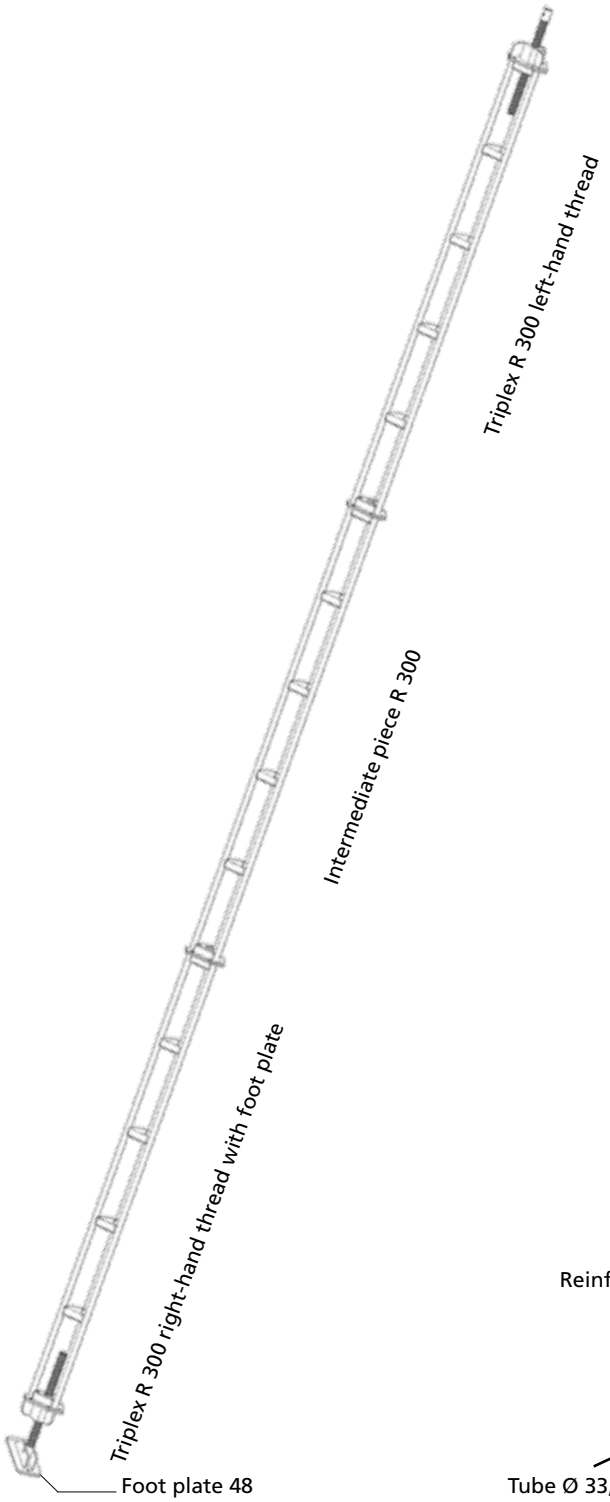

Fig. 4.1 Triplex R 980

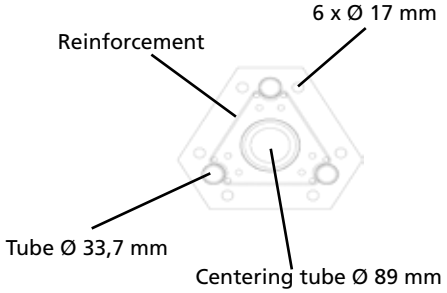

Fig. 4.2 Gusset plate

Description	Ref No.
Triplex R 300 right-hand thread with foot plate	**29-407-90**
Triplex R 300 left-hand thread	**29-407-93**
Triplex intermediate pieces	
R 50	**29-407-50**
R 100	**29-407-55**
R 200	**29-407-60**
R 300	**29-407-65**
Top units	
48 left	**29-407-80**
48 right	**29-407-85**

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Triplex SB overview

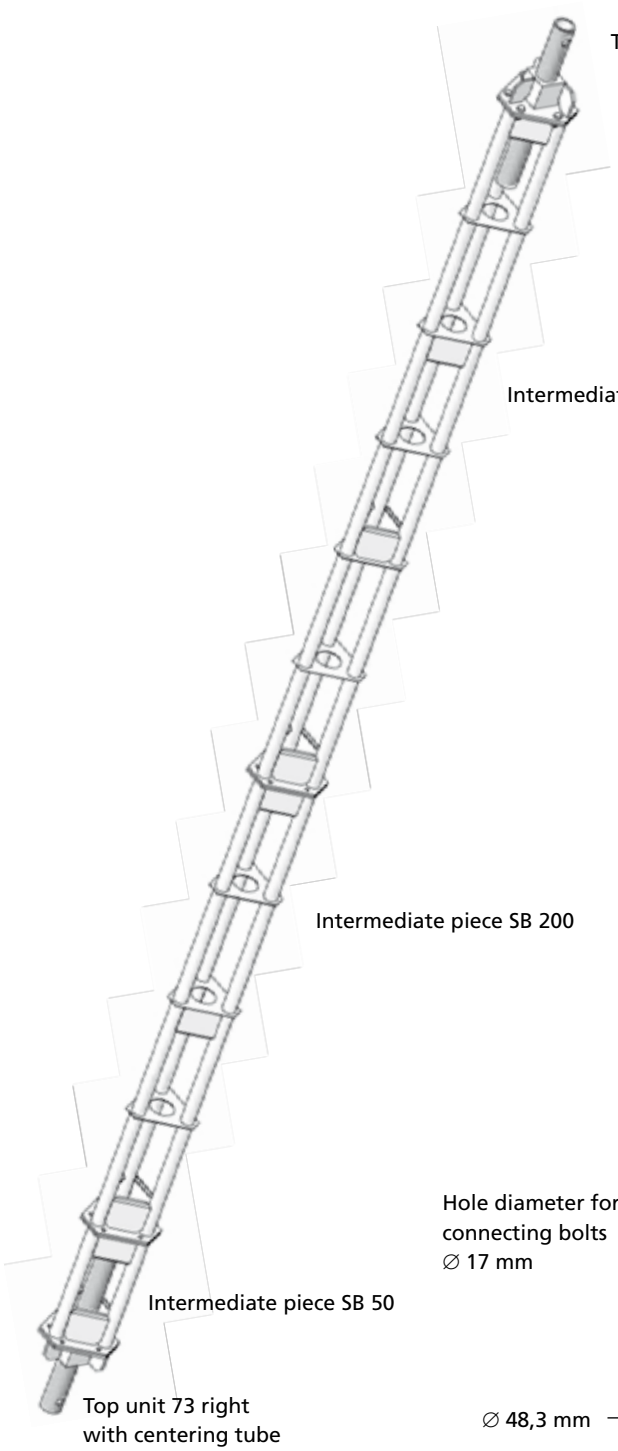

Fig. 5.1 Triplex SB 630

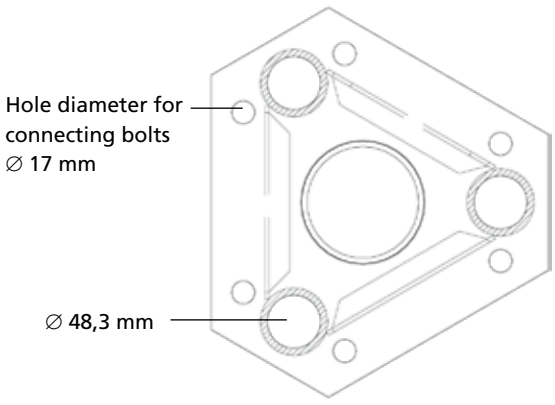

Fig. 5.2 Gusset plate

The Triplex SB braces are primarily used as an additional static support and for load transfer when using support frames STB 450 with height extensions 150 for single-sided wall formwork of approx. 6,00 m or higher.

Triplex SB braces are delivered as modules which are assembled to the required length on site. See the Product List for the individual components required for the job. The Triplex SB 630 (Fig. 5.1) comes as a pre-assembled unit (without a foot plate).

The foot plate 73 can be attached to the top unit.

A bend-proof module connection is achieved with 6 bolts at the gusset plate (Fig. 5.2).

Description	Ref No.
Triplex SB 630	**29-407-00**
Triplex SB 300 right-hand thread	**29-407-15**
Triplex SB 300 left-hand thread	**29-407-17**
Triplex intermediate pieces	
SB 50	**29-407-30**
SB 100	**29-407-35**
SB 200	**29-407-40**
SB 300	**29-407-45**
Top units	
73 left	**29-407-25**
73 right	**29-407-20**

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Triplex modules overview

Triplex braces are delivered in modules which are assembled to the required length on site. The modules are:

- Intermediate piece (Fig. 6.1)
- Top unit (Fig. 6.2 and 6.3)
- Foot plate (Fig. 6.4 and 6.5)

See the Product List for the individual components required for the job.

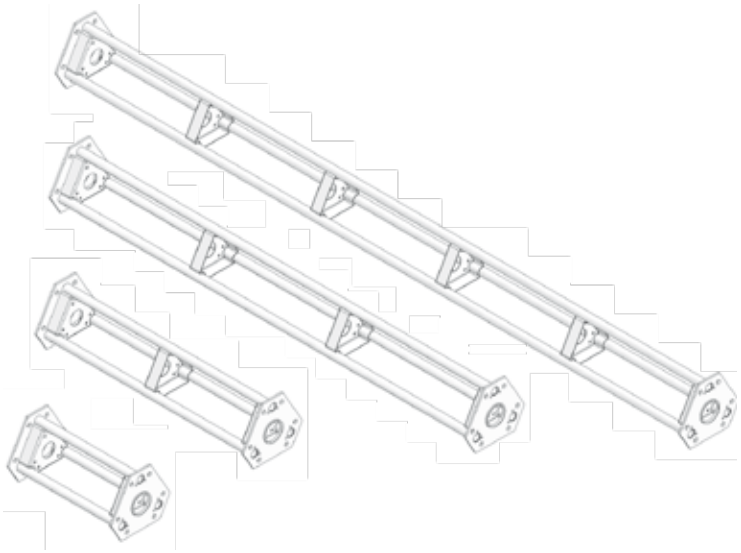

Fig. 6.1 Triplex intermediate pieces R (∅ 33,7 mm) R 300, R 200, R 100 and R 50 and Triplex intermediate pieces SB (∅ 48,3 mm) SB 300, SB 200, SB 100 and SB 50

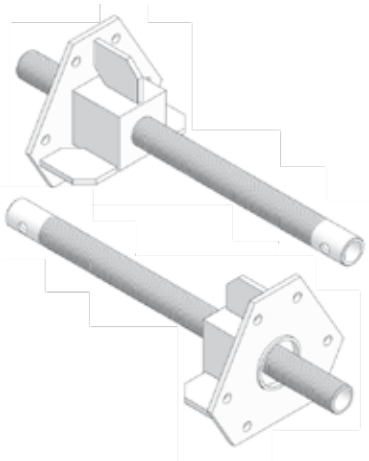

Fig. 6.2 Top unit 48 (Triplex R) left and right
Adjustment range 40 cm

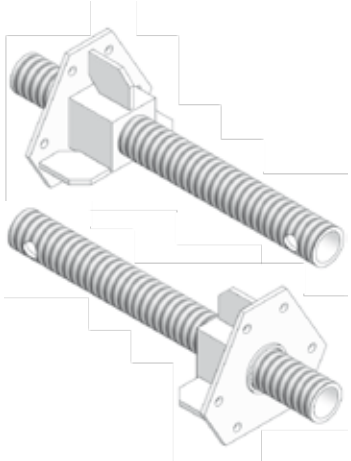

Fig. 6.3 Top unit 73 (Triplex SB) left and right
Adjustment range 40 cm

Description	Ref No.
Triplex R intermediate pieces	
R 50	**29-407-50**
R 100	**29-407-55**
R 200	**29-407-60**
R 300	**29-407-65**
Triplex SB intermediate pieces	
SB 50	**29-407-30**
SB 100	**29-407-35**
SB 200	**29-407-40**
SB 300	**29-407-45**
Top units	
48 left	**29-407-80**
48 right	**29-407-85**
73 left	**29-407-25**
73 right	**29-407-20**
Foot plate 48	**29-407-75**
Foot plate 73	**29-407-74**

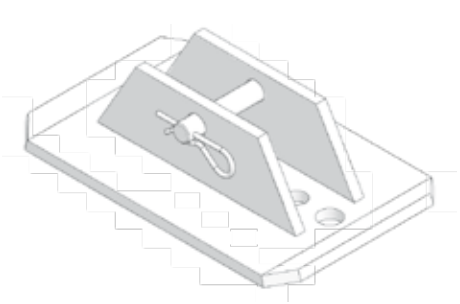

Fig. 6.4 Foot plate 48 (Triplex R)

Fig. 6.5 Foot plate 73 (Triplex SB)

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Attachment of Triplex R braces to wall formwork

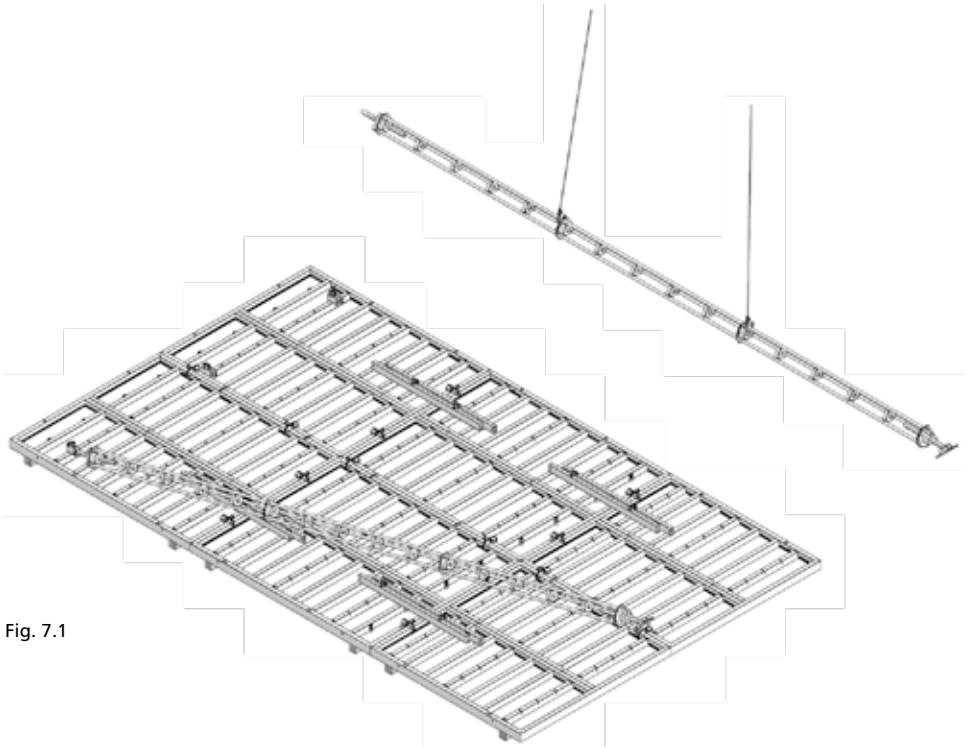
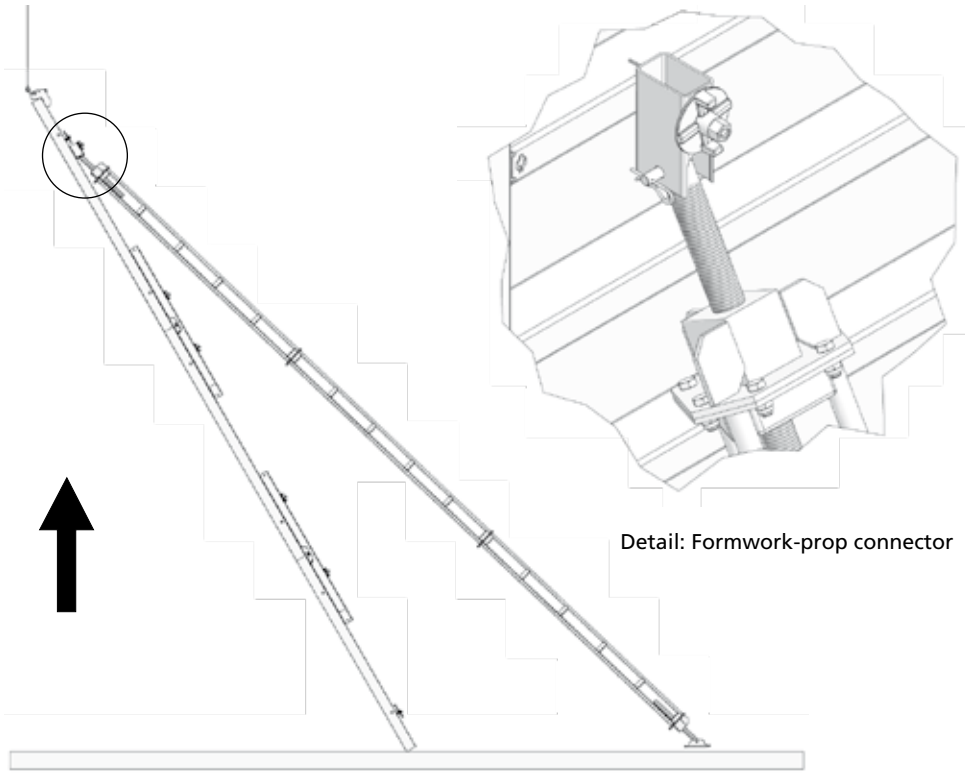


Fig. 7.1

While the panel is lying on ground, the formwork-prop connector is attached to it with a flange screw. The Triplex R brace is attached to the formwork-prop connector with the head bolt that is integrated in the formwork-prop connector (Fig. 7.1 and Detail: Formwork-prop connector). Triplex R 300 braces with right-hand thread come with the foot plate 48 pre-assembled.

The panels with braces can be lifted to an upright position by using the MEVA crane hook and 2-rope crane slings (Fig. 7.2).

Continued on p. TRIPLEX-8.



Detail: Formwork-prop connector

Fig. 7.2

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Attachment of Triplex R to wall formwork

Before detaching the crane slings make sure to secure the Triplex braces safely to the floor slab or concrete blocks (dead man) with adequate dowels or the like.

As soon as the foot plates are anchored to the floor slab (Fig. 8.1) or concrete blocks (dead man) (Fig. 8.2), the wall forms can be aligned with the Triplex braces so that they are pressure-resitant and torsion-proof.

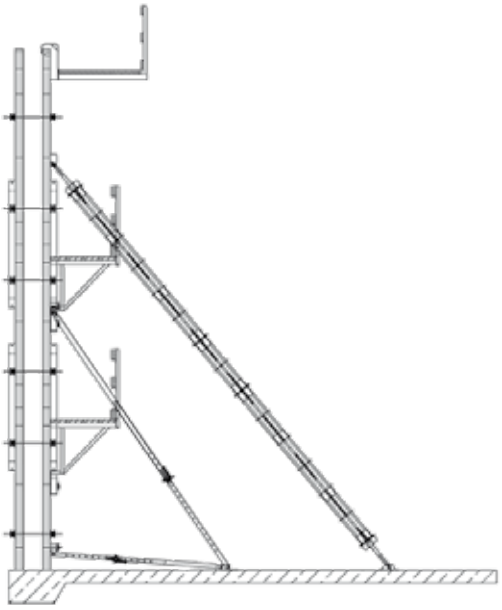

Fig. 8.1

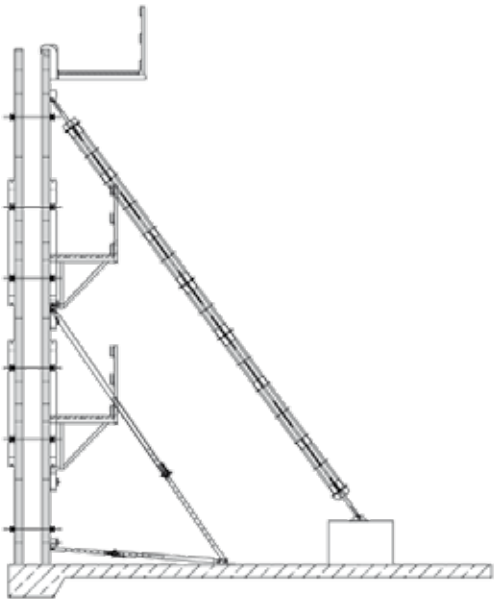

Fig. 8.2

Attachment of Triplex to climbing brackets
Triplex R braces can be attached to the climbing scaffold KLK 230 with the adequate bolts of the KLK system for single-sided wall formwork (Fig. 8.3).

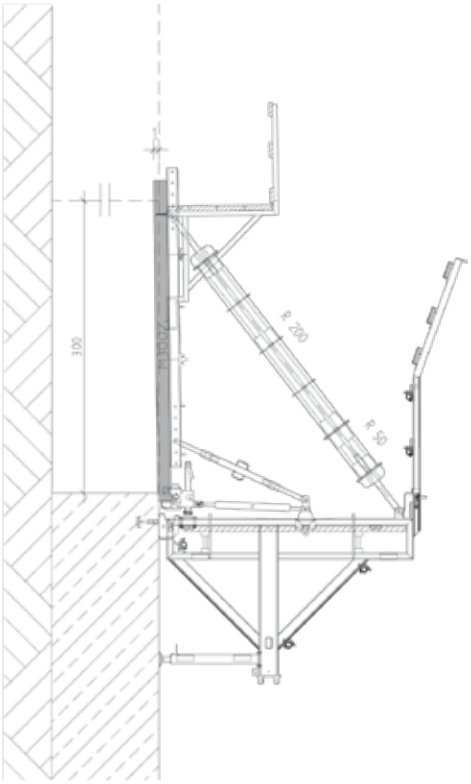

Fig. 8.3

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Attachment of Triplex SB to support frame STB 450

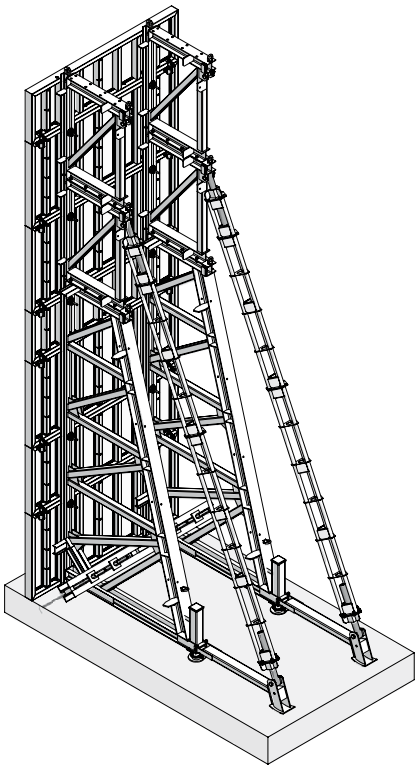

Fig. 9.1

The number of height extensions of the support frames STB determine the number of Triplex SB braces that are required (Fig. 9.1 and 9.2). The Triplex SB braces are attached to the height and base extensions of the support frames. The necessary connecting bolts are provided with the height and base extensions.

When assembling and using support frames STB observe the STB Technical Instruction Manual.

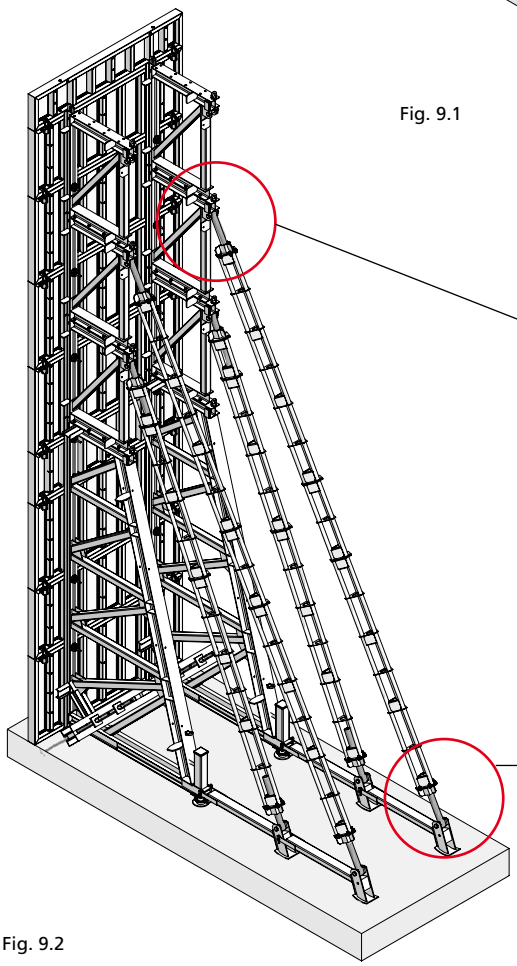

Fig. 9.2

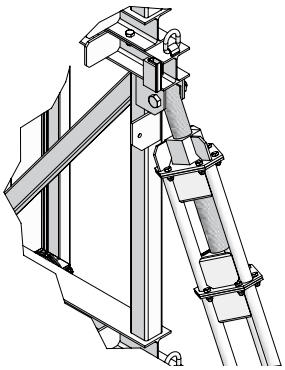

Fig. 9.3

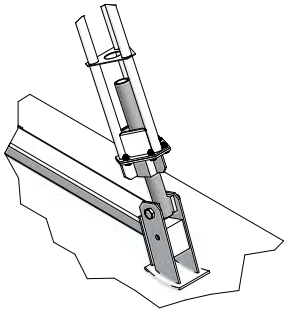

Fig. 9.4

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Attachment of Triplex R to column formwork CaroFalt

While the CaroFalt panels are lying on ground, 3 Triplex R braces are attached to a unit of 2 CaroFalt panels (angle) with the formwork-prop connectors and their integrated head bolts. The third brace serves as protection against torsion (Fig. 10.1).

Triplex R 300 braces with right-hand thread come with the foot plate 48 pre-assembled.

MEVA crane hooks and 2-rope crane slings are used to lift the complete unit of 2 CaroFalt panels and push-pull props, Triplex R braces and CaroFalt platform to an upright position (Fig. 10.2).

Immediately anchor the foot plate 48 of the Triplex R braces to the floor slab or concrete blocks (dead man) with adequate dowels or the like.

When assembling and using the column formwork CaroFalt observe the CaroFalt Technical Instruction Manual.

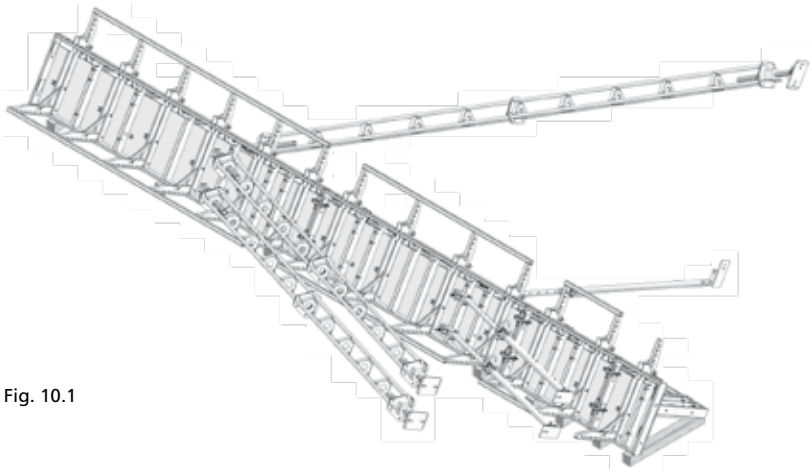

Fig. 10.1

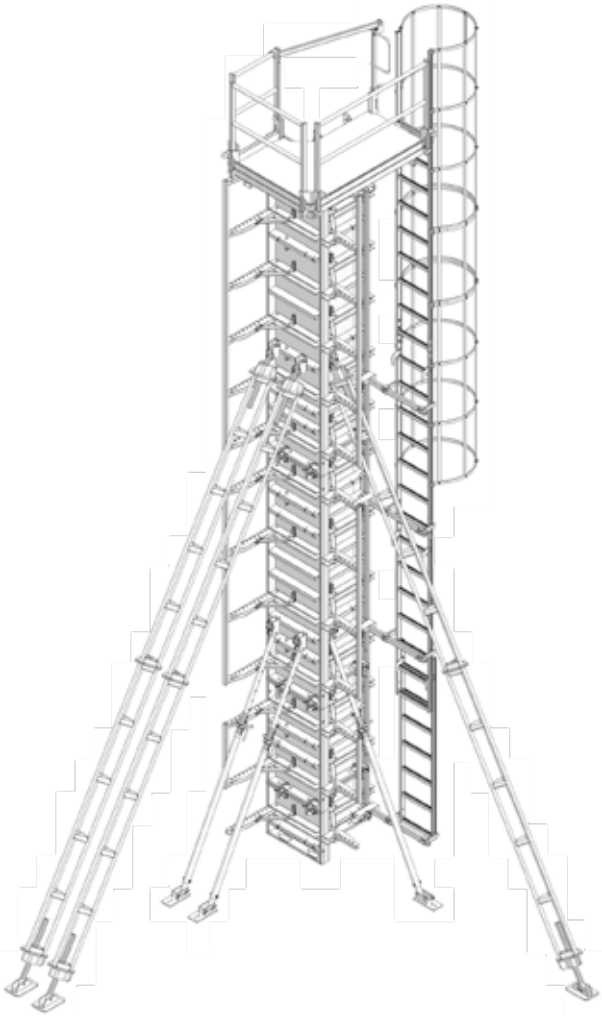

Fig. 10.2

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Attachment of Triplex R to circular formwork Circo

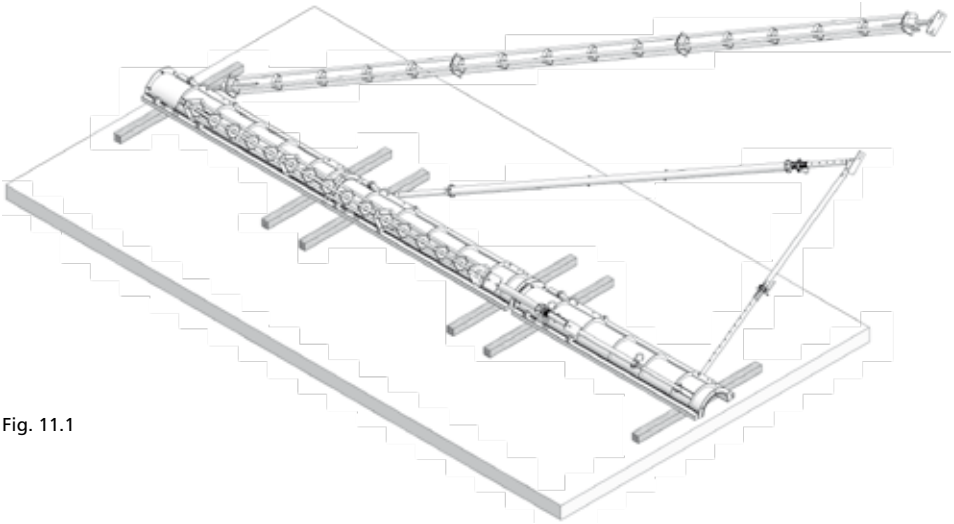

Fig. 11.1

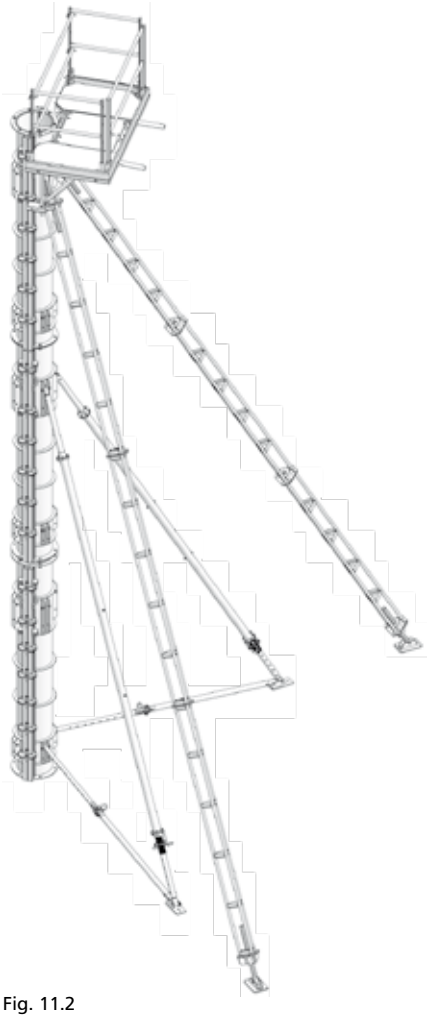

Fig. 11.2

The Triplex R braces are attached to the integrated formwork-prop connectors (and the integrated head bolts and cotter pins) of the Circo-panels (half shell) while these are lying on ground. (Fig. 11.1).

Triplex R 300 braces with right-hand thread come with the foot plate 48 pre-assembled. Immediately anchor the foot plate 48 of the Triplex R braces to the floor slab or concrete blocks (dead man) with adequate dowels or the like.

As soon as the foot plates are secured, the circular formwork Circo can be set plumb with the Triplex braces (Fig. 11.2).

We recommend using the MEVA stair tower for a safe access to the Circo platforms.

When assembling and using the circular formwork Circo observe the Circo Technical Instruction Manual.

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Stripping

We recommend stripping the complete units, i.e. Triplex braces and formwork. After putting the units to ground, the Triplex braces can be dismantled (Fig. 12.1).

Attach the 2-rope crane slings to one of the chords of a Triplex brace and remove all connecting parts. Then lift the Triplex brace by crane and put it aside for cleaning or stacking (Fig. 12.2).

Remove dirt with a brush or a cloth. When cleaning the Triplex braces, do not use tools which may cause scratches, and do not hit the braces with any tool.

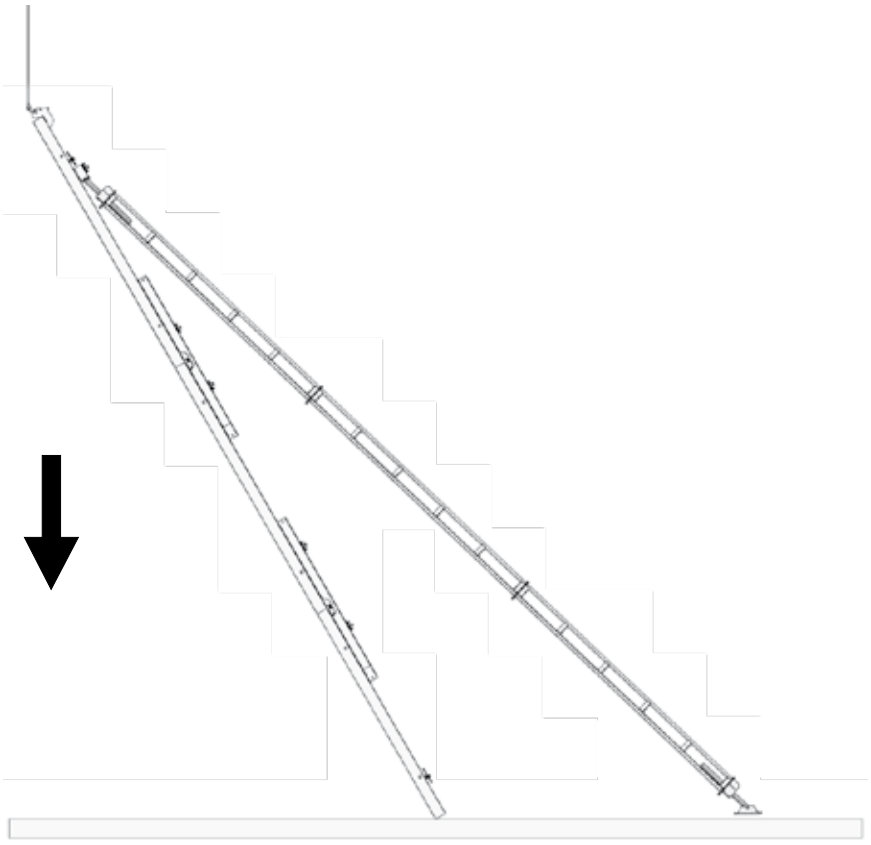

Fig. 12.1

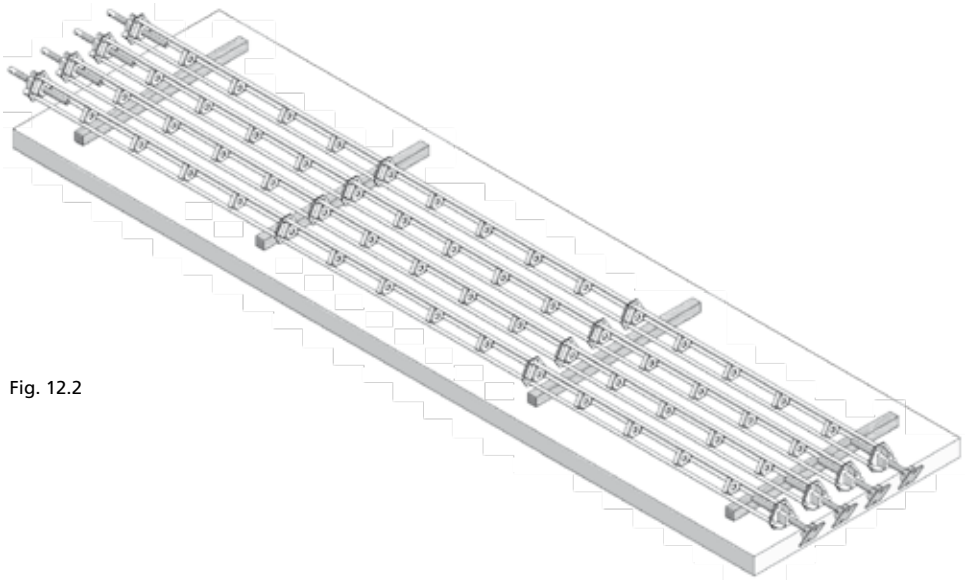

Fig. 12.2

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Storage

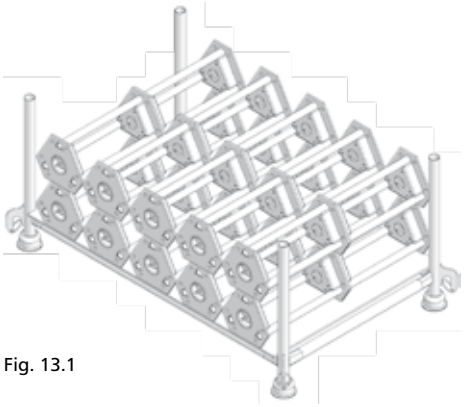

Fig. 13.1

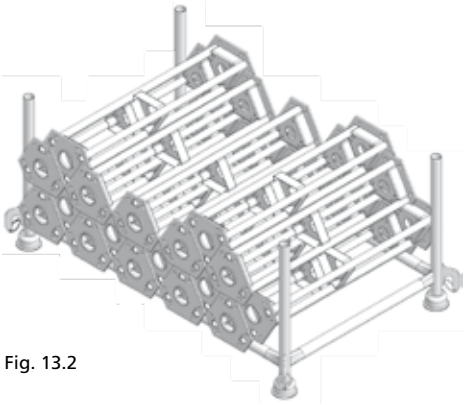

Fig. 13.2

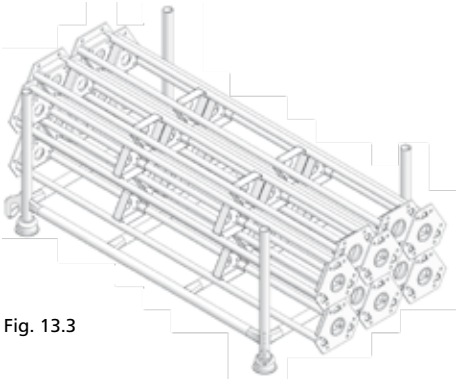

Fig. 13.3

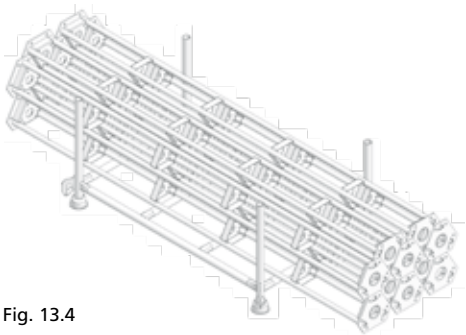

Fig. 13.4

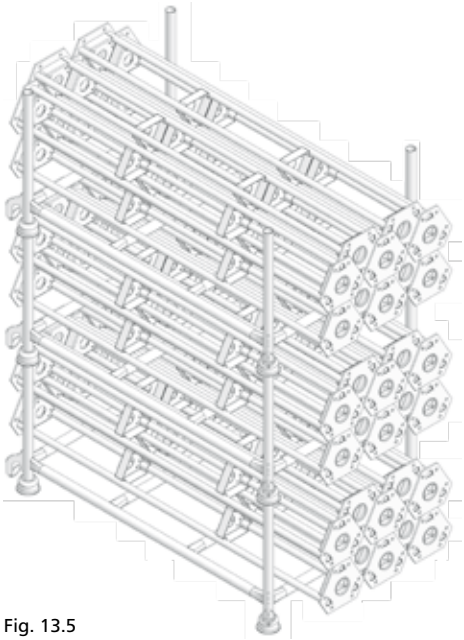

Fig. 13.5

Fig. 13.6

The components of the Triplex braces are delivered and stored in stacking racks (Fig. 13.1 to 13.4), which can be moved by crane or lift truck. When using a lift truck, slide in the forks from the long side (parallel to the short side of the stacking rack).

Transport units per stacking rack:

20 x R 50	230,0 kg
17 x R 100	272,0 kg
10 x R 200	260,0 kg
10 x R 300	340,0 kg

20 x SB 50	300,0 kg
17 x SB 100	375,0 kg
10 x SB 200	370,0 kg
10 x SB 300	520,0 kg

The top units 48 and 73 as well as the foot plates 48 and 73 are delivered and stored in storage boxes (Fig. 13.6).

Depending on the total weight, either 3 stacking racks or 3 storage boxes can be put on top of each other on a truck. (Fig. 13.5 and 13.6).

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Transport

Make sure that all material is secured properly.

Recommendation
Use one load/cargo strap per 1 metre of cargo (Fig. 14.1). That means for a fully loaded truck with a trailer length of 13,60 m, 14 load or cargo straps would be required.

Attention
When using our products, the federal, state and local codes and regulations must be observed.

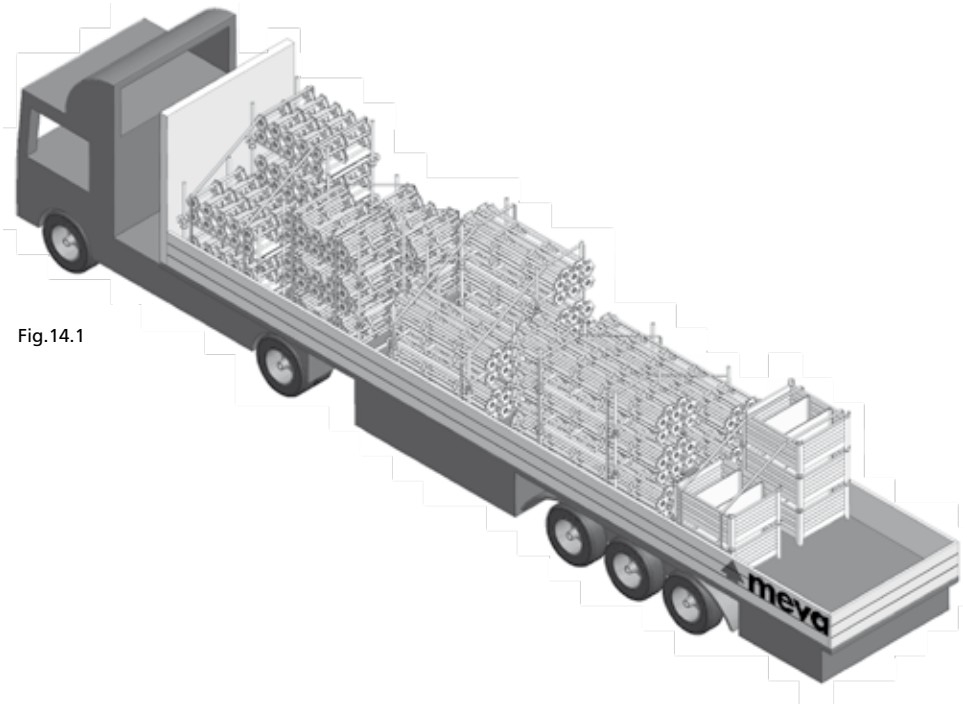

Fig.14.1

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Load charts for Triplex R

Load capacity as a vertical shore				
Length	Adjustment range (m)	Weight (kg)	Admissible load (kN)	
			Pressure	Tensile force
Triplex R 680	6,40 - 7,20	123,0	45,0	45,0
Triplex R 780	7,40 - 8,20	139,0	45,0	45,0
Triplex R 880	8,40 - 9,20	149,0	45,0	45,0
Triplex R 980	9,40 - 10,20	157,0	35,0	45,0

Table 15.1

Load capacity as a horizontal shore (supported at every third of Triplex R)				
Lenght	Adjustment range (m)	Weight (kg)	Admissible load (kN)	
			Pressure	Tensile force
Triplex R 680	6,40 - 7,20	123,0	45,0	45,0
Triplex R 780	7,40 - 8,20	139,0	45,0	45,0
Triplex R 880	8,40 - 9,20	149,0	45,0	45,0
Triplex R 980	9,40 - 10,20	157,0	35,0	45,0

Table 15.2

Load capacity under an angle of 60°				
Length	Adjustment range (m)	Weight (kg)	Admissible load (kN)	
			Pressure	Tensile force
Triplex R 680	6,40 - 7,20	123,0	45,0	45,0
Triplex R 780	7,40 - 8,20	139,0	45,0	45,0
Triplex R 880	8,40 - 9,20	149,0	35,0	45,0
Triplex R 980	9,40 - 10,20	157,0	30,0	45,0

Table 15.3

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Load charts for Triplex SB

Load capacity as a vertical shore				
Length	Adjustment range (m)	Weight (kg)	Admissible load (kN)	
			Pressure	Tensile force
Triplex SB 630	5,80 - 6,80	143,0	112,0	130,0
Triplex SB 780	7,40 - 8,20	165,0	98,0	130,0
Triplex SB 880	8,40 - 9,20	180,0	78,0	130,0
Triplex SB 980	9,40 - 1,20	195,0	68,0	130,0

Table 16.1

Load capacity as a horizontal shore (supported at every third of the Triplex)				
Length	Adjustment range (m)	Weight (kg)	Admissible load (kN)	
			Pressure	Tensile force
Triplex SB 630	5,80 - 6,80	143,0	112,0	130,0
Triplex SB 780	7,40 - 8,20	165,0	98,0	130,0
Triplex SB 880	8,40 - 9,20	180,0	78,0	130,0
Triplex SB 980	9,40 - 10,20	195,0	68,0	130,0

Table 16.2

Load capacity under an angle of 60°				
Length	Adjustment range (m)	Weight (kg)	Admissible load (kN)	
			Pressure	Tensile force
Triplex SB 630	5,80 - 6,80	143,0	100,0	130,0
Triplex SB 780	7,40 - 8,20	165,0	85,0	130,0
Triplex SB 880	8,40 - 9,20	180,0	65,0	130,0
Triplex SB 980	9,40 - 10,20	195,0	55,0	130,0

Table 16.3

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Service

Triplex cleaning
The Triplex modules are cleaned professionally upon return.

Cleaning and regeneration of wall formwork
Cleaning is done using industrial equipment with assembly lines.

The regeneration is carried out as follows: The frames are checked and, if necessary, repaired, painted and provided with a new facing.

As long as the formwork equipment is up-to-date, a regeneration will always be a more economical solution than purchasing new formwork.

Please note that the cleaning and regeneration service is not available in all countries in which MEVA does business.

Rentals
With much equipment on stock, we offer our customers the option of renting supplementary material during peak times. We also give prospective customers the chance to test MEVA formwork so they can see its benefits for themselves in actual use.

RentalPlus
Since MEVA started the flat rate for cleaning and repair of rented formwork systems in early 2000, more and more contractors experience the outstanding advantages. Ask our representatives about the details!

Formwork drawings
Of course, all offices in our technical department have CAD facilities. You get expert, clearly represented plans and work cycle drawings.

MBS
MEVA Basic Support
MBS is an addition to AutoCAD, developed by MEVA Formwork Systems in 2000. MBS is based on standard programs (AutoCAD and Excel) and can be used on any PC that has these two programs installed. It includes pull down menues for AutoCAD and applications to ease forming. It also includes the possibility to create take-offs..

Special solutions
We can help with special parts, custom-designed for your project, as a supplement to our formwork systems.

Static calculations
Generally, this is only necessary for applications like single-sided formwork where the anchor parts are embedded in the foundation or the base slab. If requested, we can perform static calculations for such applications at an additional charge.

Formwork seminars
To make sure that all our products are used properly and efficiently, we offer formwork seminars. They provide our customers a good opportunity to keep themselves up-to-date and to benefit from the know-how of our engineers.

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Notes

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