

MANTO

Formwork is really making fantastic progress



Shuttering in gigantic steps yields gigantic savings of time and money



Ever since its introduction, MANTO giant frame formwork has been a winner. The reason: it's a truly universal formwork system for all jobs, especially the larger housing and industrial projects. Even more important: it is a system that simplifies and speeds up the work and therefore offers even more economical advantages.

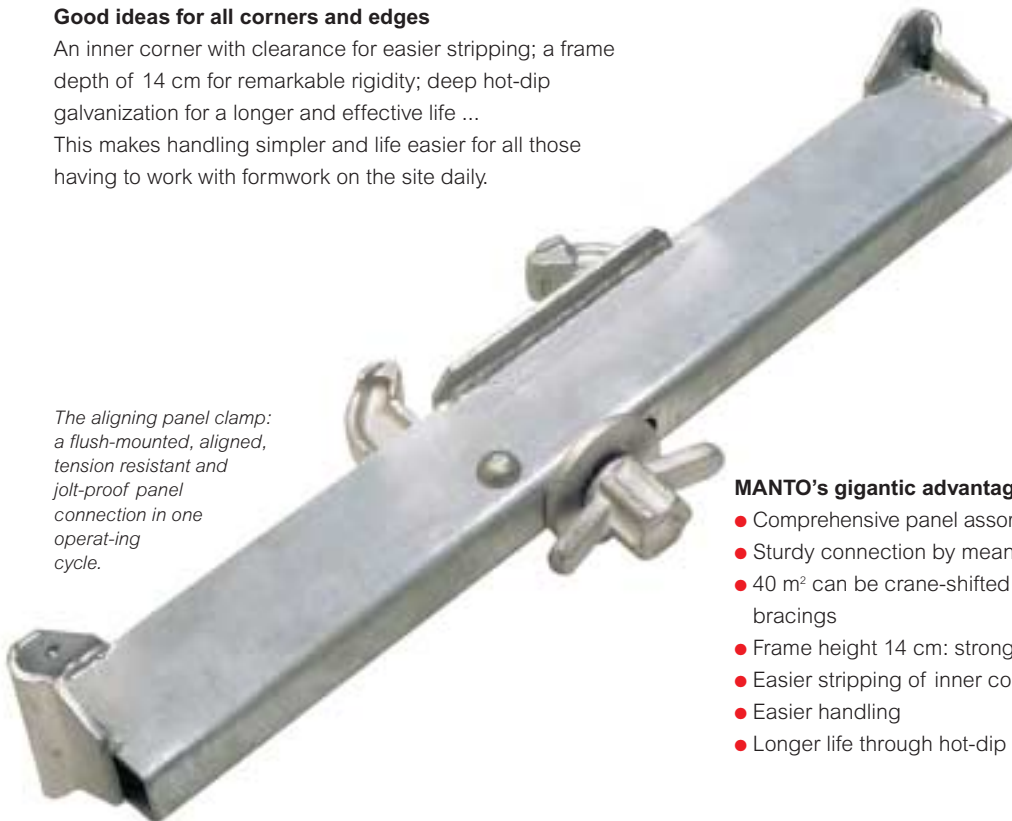
The aligning panel clamp—a vast asset

The cutting-edge improvement by which MANTO beats all other formwork systems is the aligning panel clamp. It connects the panels in one cycle and makes sure they are flush-mounted, aligned, tension resistant and jolt-proof. In this way, large-area erection, shuttering, moving and setting-down of height extended elements are made possible with one lift of the crane without requiring any additional bracings. You can easily work out how this squeezes shuttering times and costs.

Good ideas for all corners and edges

An inner corner with clearance for easier stripping; a frame depth of 14 cm for remarkable rigidity; deep hot-dip galvanization for a longer and effective life ... This makes handling simpler and life easier for all those having to work with formwork on the site daily.

The aligning panel clamp: a flush-mounted, aligned, tension resistant and jolt-proof panel connection in one operating cycle.



Also available at a height of 3.30 m for industrial construction

For industrial construction, MANTO also offers options in the form of the 3.30 m high panel. All the advantages of MANTO formwork are also significant features on the 3.30 m high panel range that is, of course, fully compatible with the existing parts. All-in-all, a successful addition to a winning line up. MANTO is moving construction work a giant step further.

MANTO's gigantic advantages

- Comprehensive panel assortments up to heights of 3.30 m
- Sturdy connection by means of aligning panel clamps
- 40 m² can be crane-shifted in one go. No additional bracings
- Frame height 14 cm: strong bending resistance.*
- Easier stripping of inner corners
- Easier handling
- Longer life through hot-dip galvanization

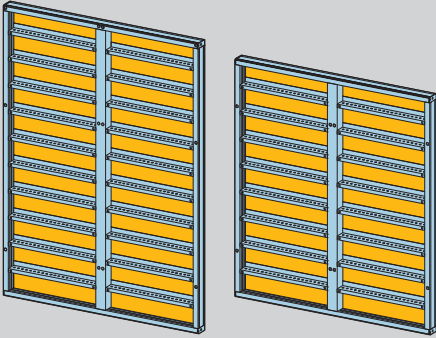
* At a panel height of 3.30 m 80 kN/m² full load, DIN 18202, tab. 3, line 6. 82.5 kN/m² triangular load, DIN 18202, tab. 3, line 7.



Gigantic gains for your site

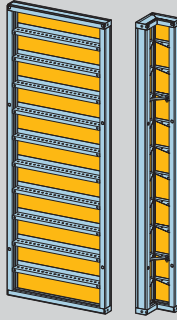
Giant panels

240 x 330 cm
240 x 270 cm



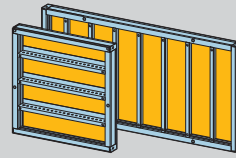
Standard panels

In widths of 120 to 30 cm
and in heights of 330, 270
and 120 cm.



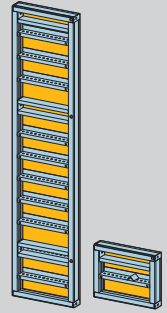
Extension panels

240 x 120/90/60 cm and
from 120 x 120 cm in
7 widths down to
30 x 120 cm.



MP-panels

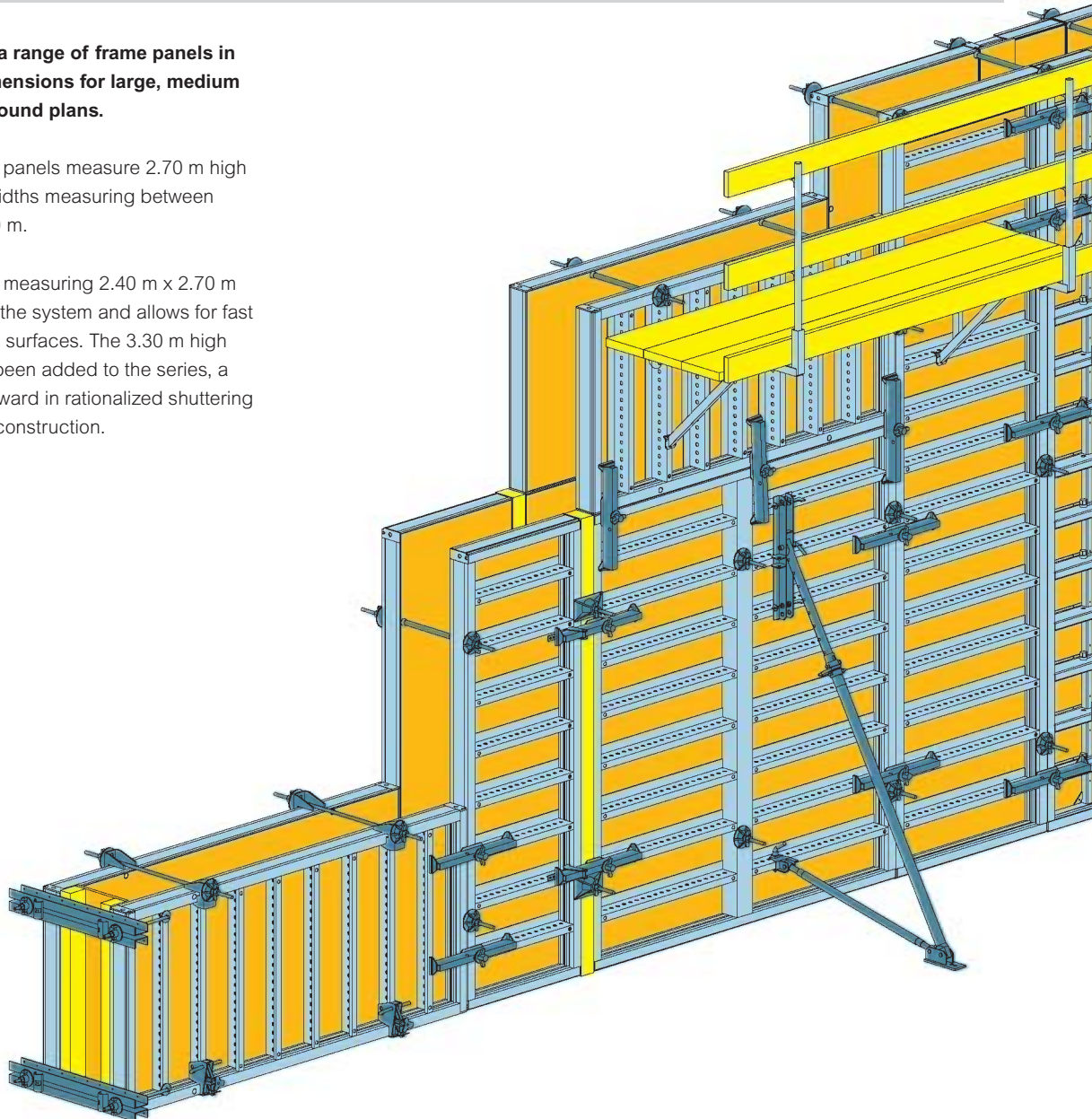
75 x 330/270/
120/60 cm

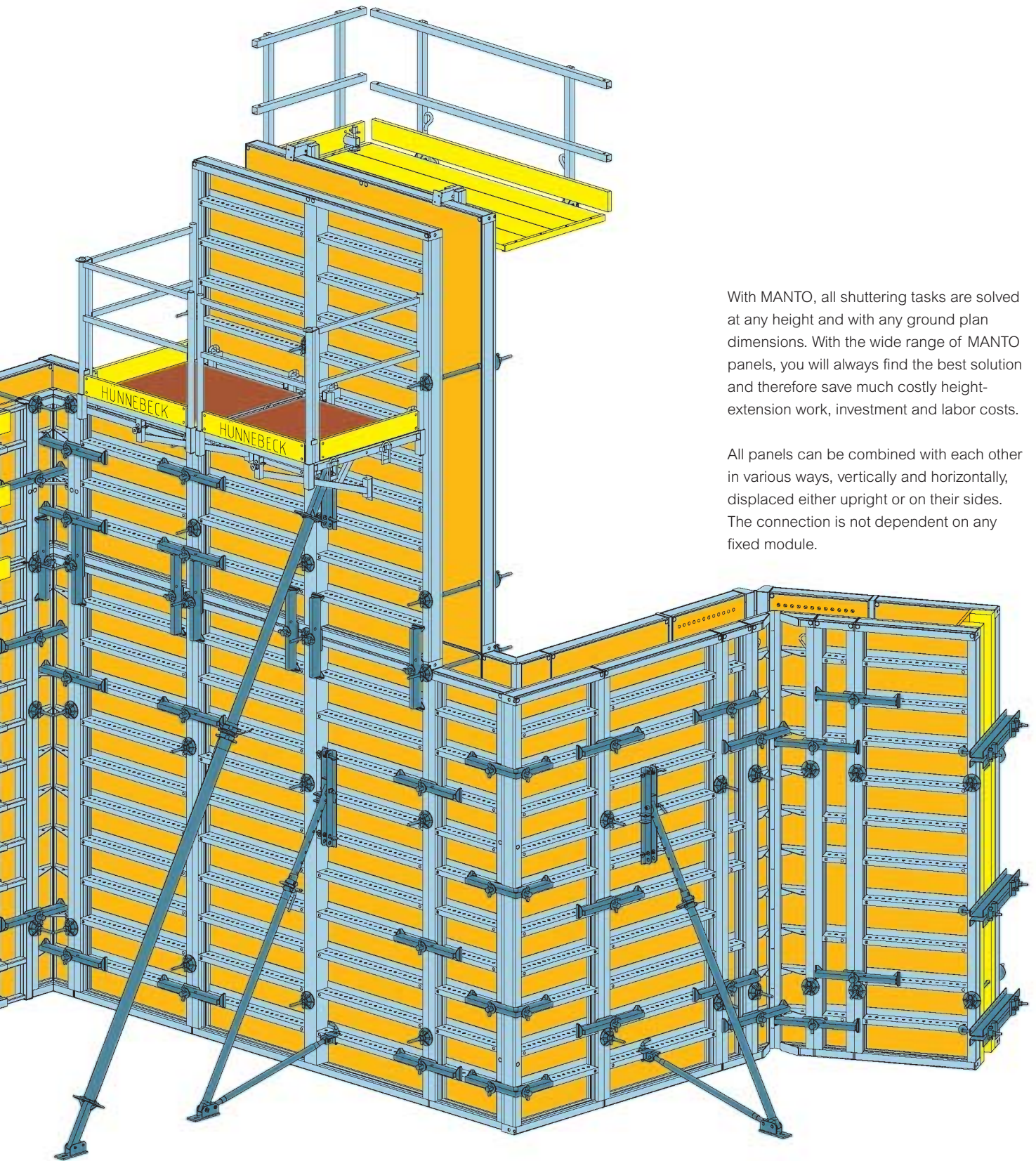


MANTO has a range of frame panels in practical dimensions for large, medium and small ground plans.

The standard panels measure 2.70 m high and have 7 widths measuring between 30 cm to 1.20 m.

A giant panel measuring 2.40 m x 2.70 m supplements the system and allows for fast work on large surfaces. The 3.30 m high panels have been added to the series, a giant step forward in rationalized shuttering for industrial construction.





With MANTO, all shuttering tasks are solved at any height and with any ground plan dimensions. With the wide range of MANTO panels, you will always find the best solution and therefore save much costly height-extension work, investment and labor costs.

All panels can be combined with each other in various ways, vertically and horizontally, displaced either upright or on their sides. The connection is not dependent on any fixed module.

Extra big and super strong



The MANTO panel 330 was specifically developed for a height of 3.30 m which is often required for industrial and business buildings. With all the advantages and good ideas taken from MANTO's 2.70 m panels.

The advantages

Height extensions a thing of the past— 50 percent fewer panels and up to 60 percent fewer connectors.

Only two ties in concrete, a third fewer than before.

Only 2 aligning panel clamps for the connection of 2 panels 2.40 m wide.

Low shuttering time. No horizontal panel joints: smoother concrete surface.

Permissible concrete pressure of 80 kN/m², faster rate of concreting. All in all, extremely economical.

Simple shuttering with fewer components and fewer joints: a clean surface.



A 6.60-m high column formwork with MANTO panels 330—and only one panel joint at such a dizzy height!



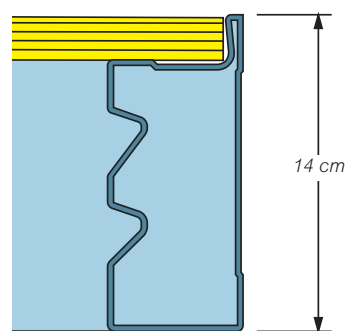
That's what makes MANTO so strong: it's the only system having a frame depth of 14 cm. Due to the integrated reinforcing ribs, the panels become very rigid. They can take on hydrostatic concrete pressure of 80 kN/m² up to a height of 3.30 m and can be concreted at very rapid speeds. Height-extended panels, too, can withstand a concrete pressure of 80 kN/m². The result: an impeccable concrete surface in record time.

MANTO panels are made of steel and are hot-dip galvanized.* The zinc coating on a 2.40 m x 2.70 m panel weighs between 13.5 and 14.0 kg—that is 4.5 percent of its weight. No paint strips off and no rust erodes.

Faster concreting with sturdy elements and perfect concrete surfaces.

The sturdy frame depth of 14 cm together with the tight connection by means of the aligning panel clamp, delivers vast stability and torsion resistance. Even height-extended and large-area elements 5.40 m high and more or surfaces of up to 40 m² can be set up and crane-shifted without any additional bracings.

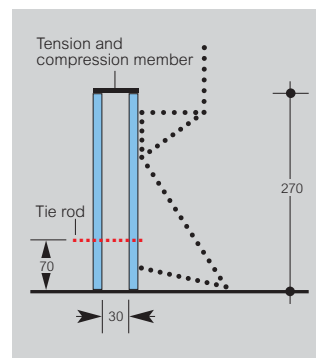
All panels have a surrounding projecting steel edge profile that shields the high-quality shuttering skin against knocks and damage.



Two functional grooves on the inner side of the edge profile ensure best possible connecting component/attachment device effect.

** The products are hot-dip galvanized according to DIN EN 1461*

Super efficient with MANTO XXL



*Tension/compression
brace at the head of
the formwork
Picture of the system*

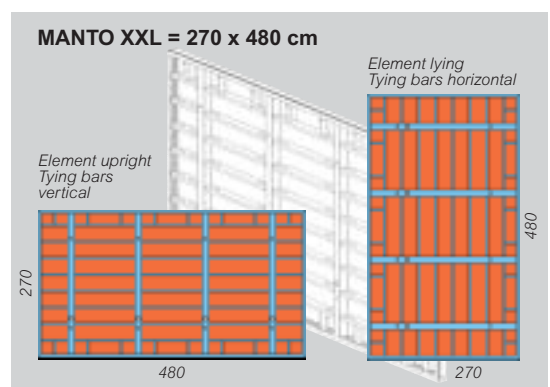
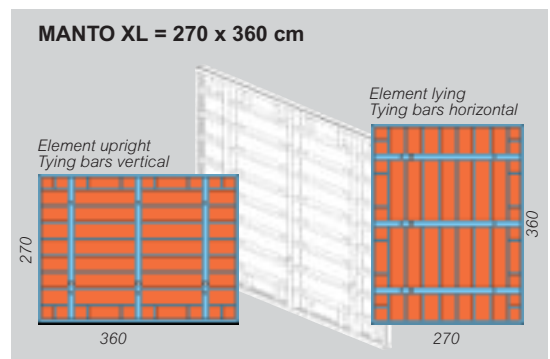
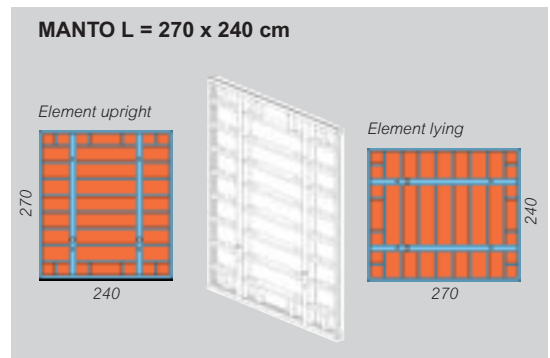
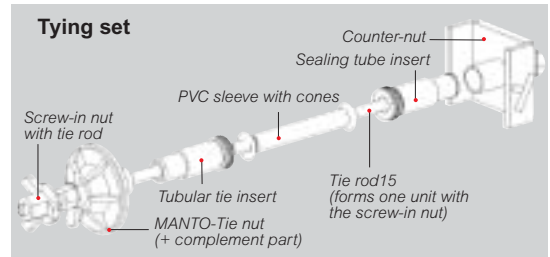
Big challenges demand big ideas. And MANTO XXL is as big as they come. MANTO XXL combines all the familiar MANTO features with true greatness—in the shape of three large panels measuring 270 x 240 cm, 270 x 360 cm and 270 x 480 cm. These extra-large sizes enable you to shutter large surfaces efficiently—without having to make adjustments and with only a small number of ties in the concrete. This way you save plenty of time and effort and, by no means least, up to 50% of labor costs.



The procedure

Step 1
Preconcrete corners and T-wall (building stage 1)
Alternatively: Fit precast corners and T-wall

Step 2
Shutter the remaining areas with the large panels in building stage 1



Sample calculation

MANTO	Award of shuttering work
Shuttering and stripping	0.45 h/m ²

MANTO XXL	Award of shuttering work
Shuttering	0.20 h/m ²
Stripping	0.06 h/m ²
Total	0.26 h/m ²

Savings

$$0.19 \text{ h/m}^2 \times \text{€}30/\text{m}^2 = \text{€}5.70/\text{m}^2$$

Price per m² Approx. €450

Total rent per month 5%

$$\text{€}450/\text{m}^2 \times 5\% = \text{€}22.50/\text{m}^2$$

Use of XXL

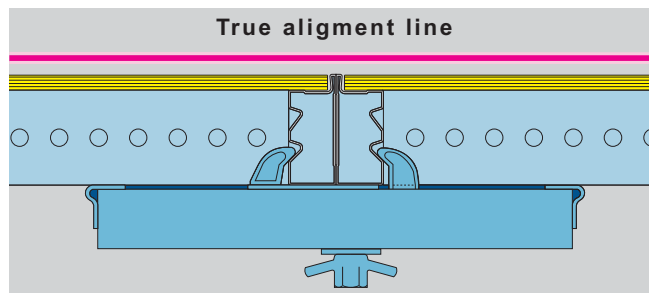
Twice per week = 8 uses per month

Savings

$$8 \times \text{€}5.70/\text{m}^2 = \text{€}45.60/\text{m}^2$$

Savings twice as high as rent.

Super quick with the aligning panel clamp and the outer corner clamp



The aligning panel clamp: just one part and just one operating cycle, a tight and jolt-proof connection.

Flush-mounted panel joints and exact alignment of panels thanks to the aligning panel clamp.

It's the details that make this formwork so practical, such as the connecting components: Hünnebeck has thought of the site worker and put innovations and improvements into the components, corners, etc.

The aligning panel clamp

It consists of only one part and it completes its job in one operating cycle. It makes sure that the panel joint is absolutely tight, tension resistant and jolt-proof. At the same time, it aligns the panels. Even when crane-shifting large-area elements no additional bolts or bracings are required.

It is simply applied by means of a hammer—or if you want to go easy on the material or save energy—a MANTO ratchet. There are no parts that can be lost. The aligning panel clamp can also be used when working on displacement at height and with height-extended elements.

Easy to use—faster work.

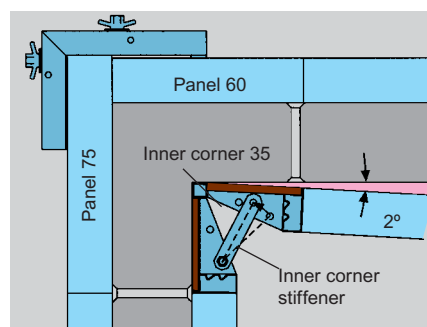


The outer corner clamp

The outer corner clamp, used as simply as the aligning panel clamp, forms an exact rectangular outer corner in one operating cycle. It fits onto any standard panel.

The inner corner can be stripped faster and more gently: i. e. it can be reduced from 90° to an 88° angle so that you are able to take the formwork away from the wall more easily.

The outer corner clamp is also the ideal connection means for column formwork.



The outer corner is designed for the full amount of concrete pressure. For wall thicknesses of 2.70 m, only three outer corner clamps are needed!

Flexible inner corner for problem-free shuttering. When disengaging the inner corner stiffener, the corner angle can be reduced to 88°.

Super practical for length compensation



MANTO waler for length compensations of up to 30 cm and for the stopend. Can also be used with acute- and obtuse-angled corners.



From the aligning panel clamp to the multi-purpose waler, from the length adjustment to the stopend—MANTO is well thought out and solidly constructed. All threadings have the tried-and-tested coarse 15 mm thread of the tie rods that makes them jolt-proof and insensitive to dirt. The whole system is safe, sturdy and capable of bearing heavy loads.



Ingenious: The edge recess

The edge recess at the upper and lower panel edge eases fine-adjustment by means of a crowbar or a nail remover.



The adjustable aligning clamp is equipped with a sliding jaw, which permits a length compensation at the panel joint of 0-15 cm, independently of the grid holes.

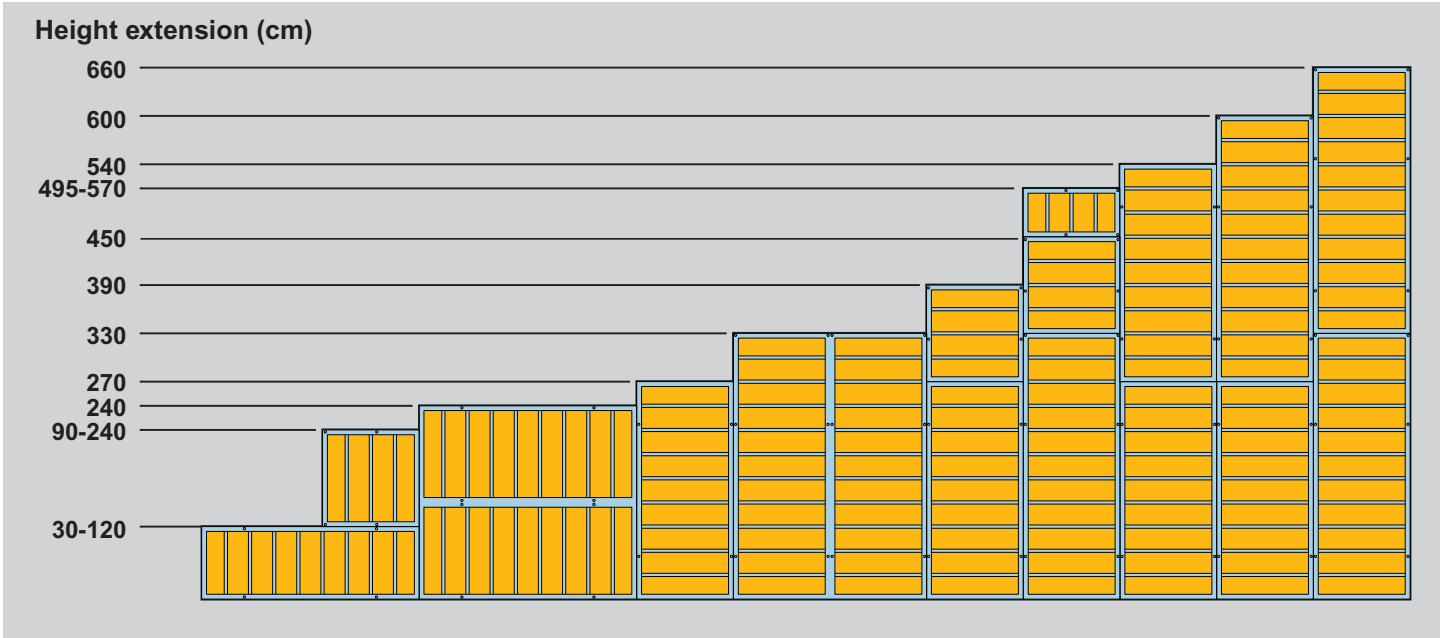


Inner corner with a 5 cm corner adjustment; the connection is aligned with the adjustable aligning clamp.

The adjustable aligning clamp

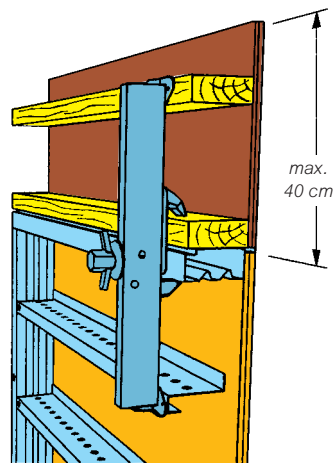
Same function as the aligning panel clamp: it connects and aligns flush. For the panel connection, however, it has an adjustment range for compensation widths of 0 to 15 cm. Also used for 4 or 5 cm corner compensations.

Super practical at any height



Up and up

Height extension is especially problem-free when it comes to MANTO and at the same time can be managed while saving time. The aligning panel clamp, here, has proven itself as a strong connection means. It's not only the fact that it joins the panels tension-resistant, flush-mounted and jolt-proof, it is also the only one that can make erecting, shuttering and shifting of height-extended elements up to 40 m² possible without additional bracings. With the aid of 12 cm squared timber, up to approximately 40 cm can be height-extended. Standard or extension panels are applied for anything above this. Always, of course, with aligning panel clamps.



The solution on site: max. 40 cm height extension by means of the aligning panel clamp and 12 cm timbers placed in front.



The versatility of panels and their combination possibilities permit precise adaptation to any desired size and shape.



Super practical accessory parts



The 2.4 m long concreting platform fastened to a large MANTO panel.



The new universal platform

Serves as a concreting and protection platform. With the aid of horizontally adjustable mounts it can be connected to panels with a width of 75 cm upwards for wall and for column formwork.

Walkway brackets

Inserted at the bar profile either horizontally or vertically at any height and width. Together with the railing post they form a 90 cm-wide concreting platform.

The MANTO aligning strut

Together with the Manto strut connector it enables an exact adjustment and alignment of the formwork. Special struts for greater heights are also to be had in the MANTO system.

The concreting platform

Fully assembled with plank and side protection. Simply open up, suspend and secure, and it's ready for hooking and securing by means of crane onto the MANTO formwork. Eight concreting platforms, folded together and stacked, are only 1.80 m high!



The universal platform ready for action at a column form consisting of the column frame 90, maximum permitted load 1.5 kN/m²

Super flexible



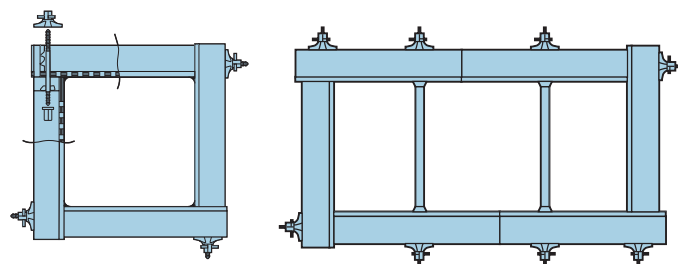
Foundations, columns and shafts, everything can easily be managed with few supplementary components with MANTO. The result is always clean, neat, and exact.

The horizontal application

Ideal for foundations, floor plates or similar structures. Whether aligning panel clamp, corner clamp or adjustment clamp: all MANTO connection components for vertical panels may be used here, too. When using the edge tie fastener, the upper tying points are outside the concrete.

The column formwork with the multi-purpose panel

Multi-purpose panels are available for shuttering columns of up to 60 x 60 cm in steps of 5 cm (square or rectangular). But you can also use standard panels and outer corner clamps to shutter the columns—up to a permissible concrete pressure of 80 kN/m².

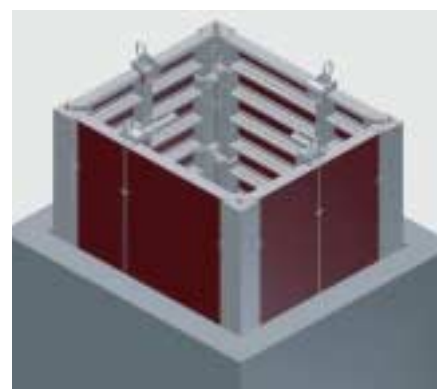


Square and rectangular column formwork with multipurpose panels.



Column formwork with the column frame 90

For shuttering from 20 x 20 cm to 90 x 90 cm column widths in steps of 5 cm. Permissible concrete pressure 100 kN/m². The elements (available in heights of 270, 120 and 60 cm) have integrated battens onto which you can nail any desired shuttering skin. By means of additional panels and tying points, larger cross sections can also be shuttered.



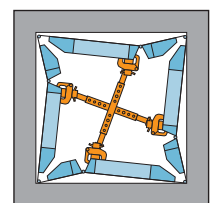
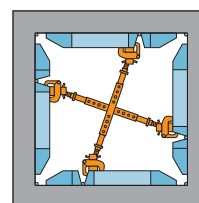
Shaft shuttering and stripping simplified

The new MANTO shaft corner is an innovative solution for swiftly shuttering and stripping shafts. A mechanism in the shaft corner allows the formwork to be released from the concrete with a turn of the wrist from the top thanks to an easily accessible set-screw. It can then be completely relocated with a lift of a crane. No specialty tools required. All that is necessary is the MANTO ratchet or a tie rod lowering into the existing bore. MANTO shaft corners are available in three sizes: 120, 270 and 330 cm. The side length is 30 cm.

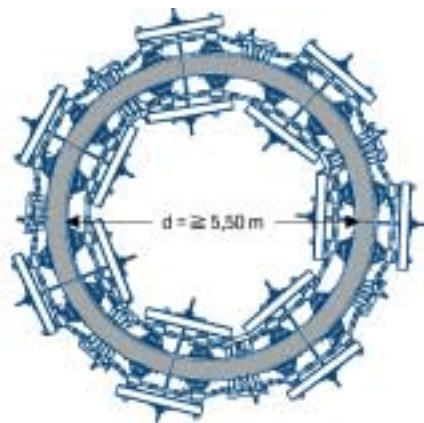
These corners can be combined with MANTO, RASTO and TAKKO panels alike; vertical extensions possible without any additional connectors.

Proven alternative

For the interior formwork of shafts you can, of course, still use our hinged corners, exterior corners and shaft spindles. Such system elements are recommendable when working on larger shafts with cross-sections of over 4 m.



Super flexible—whether single-sided, round, acute- or obtuse-angled



Polygon-type circular formwork

Circular containers of an approximate diameter of 5.00 m and larger can be shuttered as a polygon with the aid of small panels and form strips.

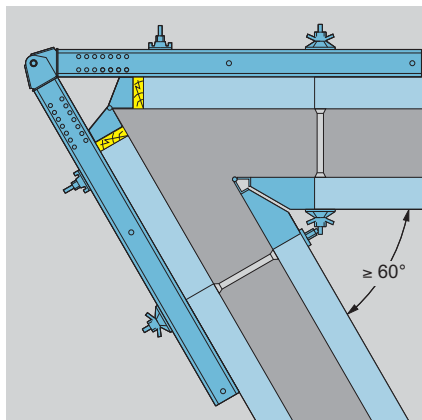
Tying is carried out with the aid of the form strip and a special tying member.

For “all-round” shuttering, we recommend our RONDA formwork. Of course, it is fully compatible with MANTO. Just contact us.

The single-sided formwork

Support frames 325, 500 or 700 are applied here. The concrete pressure force is absorbed by means of inclined ties in the base plate.

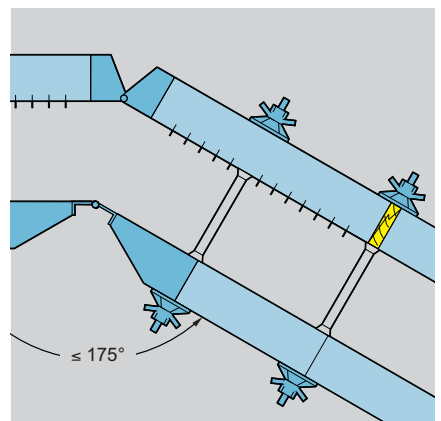




Acute-angled corner with hinged waler 170 and waler spanners. For wall thicknesses of less than 25 cm you can also use the standard Manto waler.

Acute- and obtuse-angled corners

No matter which angle between 60° and 175° you have to shutter—with the help of the various MANTO accessories, no problem.



Super inService



If you only purchase Thyssen Hünnebeck products without utilizing the services, you waste valuable possibilities. If you take advantage of Hünnebeck's service, you strengthen your own core business and make it more profitable and more keenly competitive. We support you with training courses and seminars. Subjects are our products, efficiency comparisons of various systems as well as new rules, guidelines and directives. Modern seminar documents as well as interactive CD ROMs and professional formwork software assist our specialists in their work.



Advice and service all inclusive

We prepare project-oriented and illustrative assembly, shuttering and flow diagrams with detailed material and cost lists as well as the static calculations. And, you always get a complete and honest offer—down to the final tie rod you need on your construction site.

TIPOS 4.0—fast and efficient planning

TIPOS 4.0 is a high-performance planning tool for easily handling even complex projects. Thanks to the individual modules of TIPOS, the scope of supply can be easily adapted to your requirements:

TIPOS Plus for fast formwork planning at the site or work scheduling. Fully compatible with almost all other Hünnebeck formwork systems.

TIPOS Construction for the simple solution of complex tasks. As add-on software for Autocad 2000i and including Hünnebeck's entire product range.

TIPOS Import/Layout combines the strong points of TIPOS Plus and TIPOS Construction by means of an easy data transfer. Further processing in just one step.

TIPOS Parts List Editor This parts list editor generates the materials requirement from the TIPOS formwork planning or the separate material packages and offers consting, invoicing and work scheduling lists.

Formwork

User's manual



Tables
Concr



User handbook and poster

complement and facilitate working with MANTO and other Hünnebeck products. Where required, this documentation can be ordered for your work scheduling department or construction site.



Cleaning and repair: Clean and quality guaranteed

When returning rented formwork or when performing the maintenance on one's own equipment, there is always the need to solve the problem of thorough cleaning and maintenance.

Leave it to our specialists! They inspect, clean and repair your equipment—whether rented or bought. They'll even re-coat the shuttering skin. Everything is swifter and more efficient than do-it-yourself.

You can also conclude a repair and cleaning insurance contract. In this case we take on all the necessary tasks down to the replacement of shuttering skin without any ifs and buts.

Test us! Make the most of these advantages. (German market)



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