

The time-saving joining system with form-locking anchoring

# **Content**



# P-System

The time-saving joining system with form-locking anchoring

P-System – Overview	4-5
Connectors – Features overview	6-7
Clamex P-14 – Detachable furniture connector	10-11
Clamex P-14/10 Medius – Detachable connector for centre panels for materials from 16 mm thickness	12 – 13
Clamex P-10 – Detachable connector for materials from 12 mm thickness	14-15
Clamex P-14/10 Flexus – Detachable furniture connector with flexible positioning pins	16-17
Clamex P-14 CNC – Detachable furniture connector with precise alignment	18-19
Application examples – Clamex P	20-21
Advantages of the Clamex P – Detachable furniture connector	22
<b>Bisco P</b> – Aligning element, suitable for the P-System groove	24-25
<b>Tenso P-14</b> – Self-clamping connector for glueing materials from 16 mm thickness	26-27
<b>Tenso P-10</b> – Self-clamping connector for glueing thin materials from 12 mm thickness	28-29
Application examples – Tenso P	30-31
<b>Divario P-18</b> – Self-clamping, invisible connector for slide insertion	32-33
Application examples – Divario P-18	34-35
High performance without cable – LiHD battery pack	36-37
More flexible in the workshop	38
Mobile working on the construction site	39
Zeta P2 cordless – The powerful P-System biscuit joiner for cordless freedom	40-41

<b>Zeta P2</b> – The machine for the evolving P-System, saving you time daily! Differentiate your products from the standard!	42 – 43
Accessories – Zeta P2 cordless and Zeta P2	44
Connected in seconds Without waiting time, clamps, or secondary processes, glued and clamped in 40 seconds	45
Changing the cutter position – Using spacers	48
Joints in various angles – P-System grooves on edges cut to an angle	49
Networked production – Components for the successful integration of Lamello connection systems into your networked production	50-51
Service overview – Lamello's planning and machining partners	52-53
P-System with CNC – Joining methods and requirements for CNC machines/machining options	54-57
Ideas for standardising – For CNC machines for particularly efficient machining	58-59
Ideas for standardising – The machining on a CNC machine	60
Possible combination of CNC machines with Zeta P2	61
CNC tools – For the P-System	62-63
Technical information	64-67
Accessories /Spare Parts – P-System	68-71
We are here for you!	72-73
Overview of connectors	74-75
Overview of connectors	75

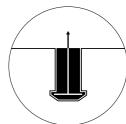


## Features



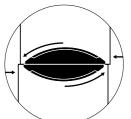
# Fast installation

Inserting instead of screwing or glueing



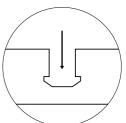
## Strong

Form-locking anchorage across large surface areas



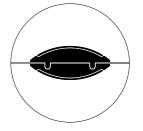
#### Lateral tolerance

Perfect, flush alignment of both workpieces



## Shallow depth

Minimal cutting depth with maximum tensile strength



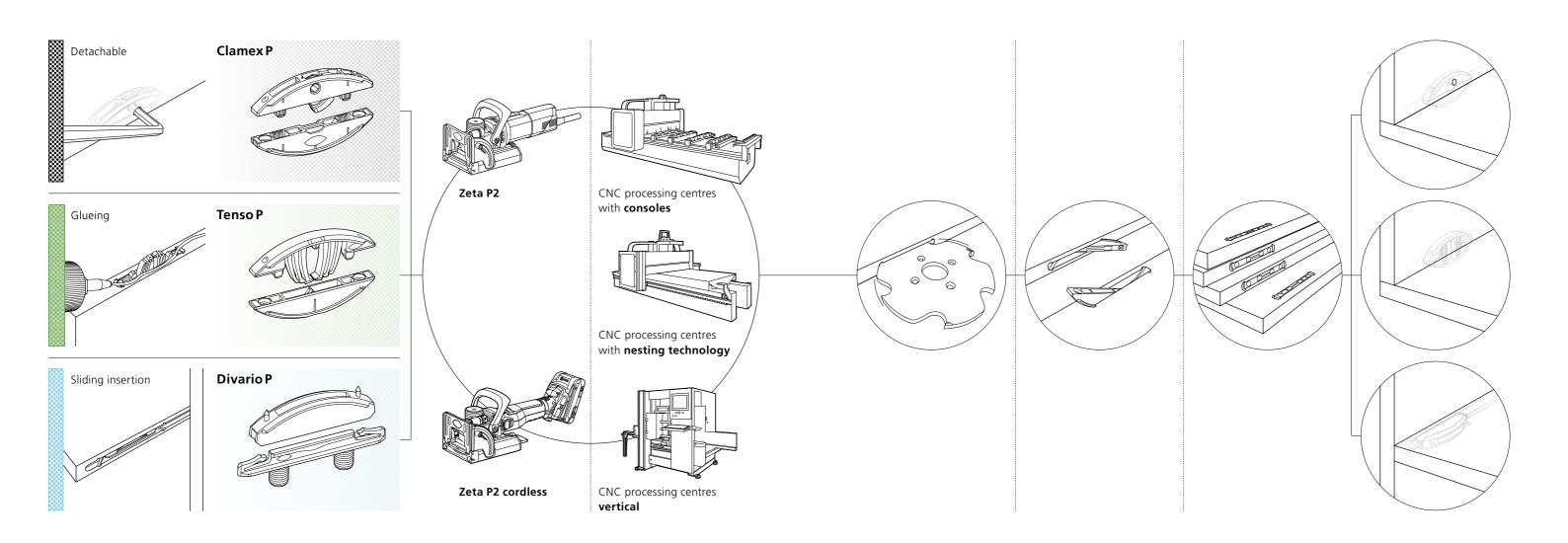
## No twisting

The positioning pins prevent twisting without additional dowels

# **P-System**

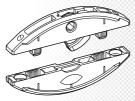
Overview

Joining methods	Connector	Machines		Sequence			
		Power tool	CNC machines	<b>1</b> Cut	2 Insert the connector	<b>3</b> Deliver flat pack	<b>4</b> Connect the workpieces



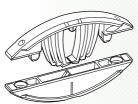
# **Connectors**

Features overview



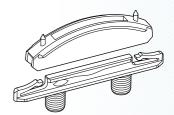
### **Clamex P**

Detachable furniture connector



#### Tenso P

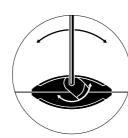
Self-clamping connector for glueing



#### **Divario P**

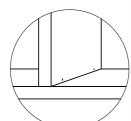
Self-clamping, invisible connector for slide insertion

### Features



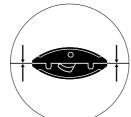
#### Detachable

Open the connection time and time again with the rotating lever



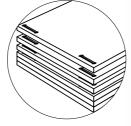
#### Aesthetic

The small, hardly visible opening (Ø = 6 mm) serves to close and open the connector



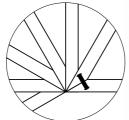
#### High clamping force

Clamp and glue workpieces at any angle, ~ 80 kg or 170 lb



#### Stackable

Workpieces with pre-installed P-System connectors are stackable for storage and transport



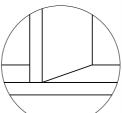
#### Versatile

The shallow element depth allows for mitres from 22.5 – 180°, surface, corner and dividing panel connections



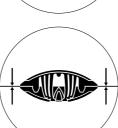
#### Glueing

Fixed joints of two workpieces



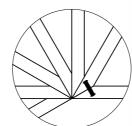
#### Invisible

No visible connector



#### High clamping force

Allows for perfect alignment and clamps the workpieces ~ 15 kg or 30 lb



#### Versatile

Simple glueing of mitre joints



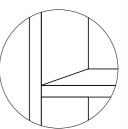
### Lower assembly force

In combination with the pretension clip, only a short force impulse is required to snap it into place



#### Sliding insertion

Insertion between two fixed sides or shelves via a guiding groove



#### Invisible

Guiding groove covers the connectors



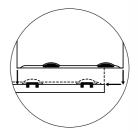
#### Clamped joint

No resistance while inserting until shortly before building the clamping force



#### Fast installation

Quick installation of the connectors without glue after transport



#### Assemble by sliding

Partially routed guiding groove for completely invisible furniture joints

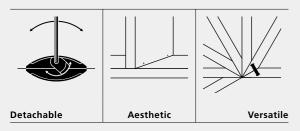


# Clamex P-14

Detachable furniture connector



#### Features



Clamex P-14 is a detachable connector and is anchored in the form-locking P-System groove within seconds.

Through the minimalist 6 mm access hole, Clamex P-14 is firmly connected and disconnected using a lever.

Clamex P-14 eliminates the need for glue, allows aesthetic joints at all angles and is ideal for permanently joined or detachable mitres.

Clamex P-14 is used on mitre joints from 18 mm material thickness and in butt joints from 15 mm.

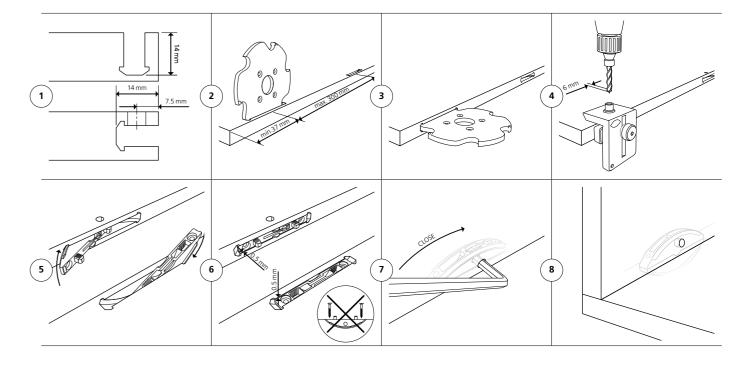


# Articles



Clamex P-14	Art. No.
80 pairs	145334
300 pairs	145346
1000 pairs	145356
2000 pieces element with lever	145338
2000 pieces element without lever	145339

## Function



#### www.lamello



Experience the connector live and receive comprehensive product information!















Joining methods	Size
	Cutte
2 12 mm 2 18 mm 2 29 mm	Mate
	Mate
≥ 15 mm ≥ 18 mm	Instal
	Tensi
1 1	Up to
	Mate

Size	64×27×9.7 mm		
Cutter	Ø 100.4×7ר 22 mm		
Material connector	Fiberglass reinforced plastic		
Material of lever	Zinc die cast		
Installation tolerance	Long. ± 1 mm/radial ± 1 mm		
Tensile strength (N) Up to	MDF 900 <sup>1</sup>	Particle board 8001	Beech 1000 <sup>1</sup>
Material range	Particle board, MDF, plywood, softwood, hardwood etc.		

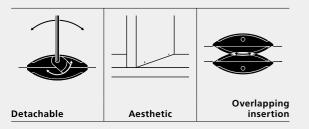
<sup>&</sup>lt;sup>1</sup> See comment on load limits on **PAGE 75** 

# Clamex P-14/10 Medius

Detachable connector for centre panels for materials from 16 mm thickness



#### **Features**



Clamex P-14/10 Medius is a detachable connector and is anchored in the form-locking P-System groove within seconds.

Through the minimalist 6 mm access hole, Clamex P-14/10 Medius is firmly connected and disconnected using a lever.

The connector for divisions has two installation depths and is used when two shelves are attached to the same dividing panel at the same height. Due to the reduced installation depth of 10 mm, the minimal thickness for the division is 16 mm.

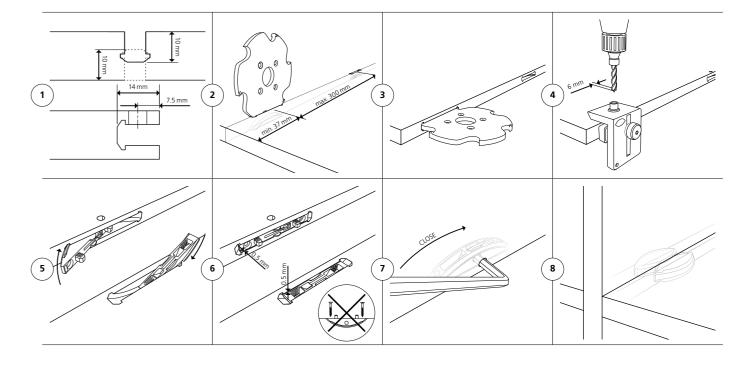


#### Articles



Clamex P-14/10 Medius	Art. No.
80 pairs	145370
300 pairs	145371
1000 pairs	145357
2000 pieces element with lever	145338
2000 pieces element without lever	145369

### Function



#### www.lamello



Experience the connector live and receive comprehensive product information!













## Technical data

Joining methods		Size		5×9.7 mm ×9.7 mm			
			Cutter	Ø 100.4	Ø 100.4×7ר 22 mm		
z 18 mm z 12 mm z 16 mm	E	Material connector	Fiberglass reinforced plastic				
	91	Material of lever	Zinc die	Zinc die cast			
≥ 12 mm	18 mm	2 12 mm	Installation tolerance	Long. ±	1 mm/radial ± 1 mm		
			Tensile strength (N) Up to	MDF 800 <sup>1</sup>	Particle board 600 <sup>1</sup>	Beech 900¹	
			Material range	Particle l hardwoo	board, MDF, plywood, od etc.	softwood,	

90° and 45° cover caps are available in a variety of colours **PAGE 69** | See **PAGE 64** for technical specifications

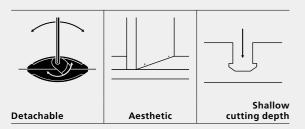
<sup>&</sup>lt;sup>1</sup> See comment on load limits on PAGE 75

# Clamex P-10

Detachable connector for materials from 12 mm thickness



#### **Features**



Clamex P-10 is a detachable connector and is anchored in the form-locking P-System groove within seconds.

Through the minimalist 6 mm access hole, Clamex P-10 is firmly connected and disconnected using a lever.

Clamex P-10 eliminates the need for glue, allows aesthetic joints at all angles and is ideal for permanently joined or detachable mitres.

Clamex P-10 is used on mitre joints from 15 mm material thickness and in butt joints from 12 mm.

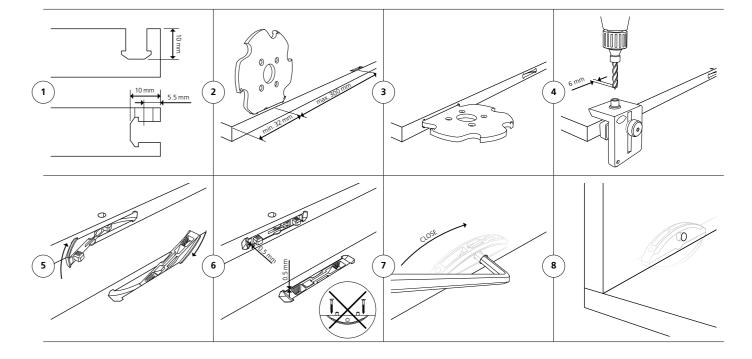


#### Articles



Clamex P-10	Art. No.
80 pairs	145372
300 pairs	145373
1000 pairs	145374
2000 pieces element without lever	145358

### **Function**



#### www.lamello



Experience the connector live and receive comprehensive product information!



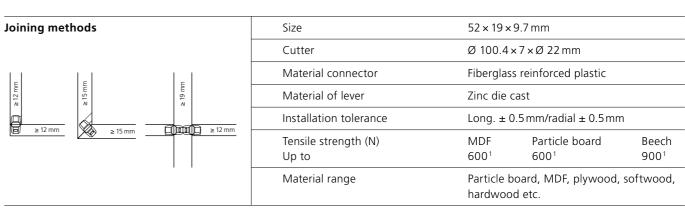










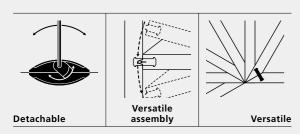


# Clamex P-14/10 Flexus

Detachable furniture connector with flexible positioning pins



#### **Features**



Clamex P-14/10 Flexus is a detachable connector and is anchored in the form-locking P-System groove within seconds.

Through the minimalist 6 mm access hole, Clamex P-14/10 Flexus is firmly connected and disconnected using a lever.

The flexible positioning pins allow work pieces to be installed in an already assembled cabinet, simplifying the assembly sequence.

Clamex P-14 is used in mitre joints from 18 mm material thickness and in butt joints from 12 mm.



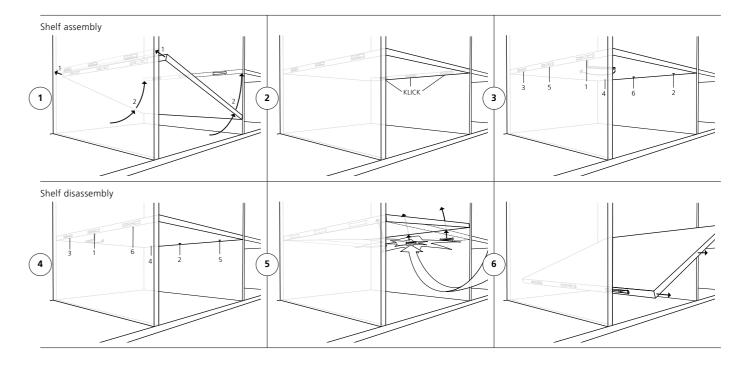
#### Articles





Clamex P-14/10 Flexus	Art. No
80 pairs	145315
300 pairs	145316
1000 pairs	145317
2000 pieces element with lever	145318
2000 pieces element without lever	145369

## Function



#### www.lamello



Experience the connector live and receive comprehensive product information!





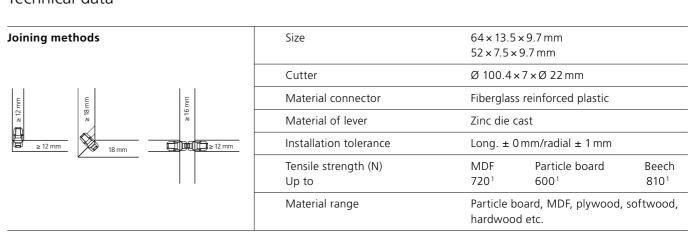










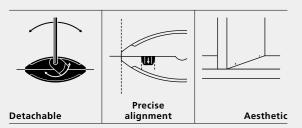


# Clamex P-14 CNC

Detachable furniture connector with precise alignment



#### **Features**



Clamex P-14 CNC is a detachable connector and is anchored in the form-locking P-System groove within seconds. Through the minimalist 5 mm access hole, Clamex P-14 is firmly connected and disconnected using a lever.

Clamex P-14 CNC is ideal for production on CNC machines and, unlike Clamex P-14, is automatically aligned during assembly.

Clamex P-14 CNC is used in mitre joints from 18 mm material thickness and in butt joints from 12 mm.





Clamex P-14 CNC	Art. No
2000 pieces element with lever	145388



Clamex P-14	Art. No
2000 pieces element without lever	145339

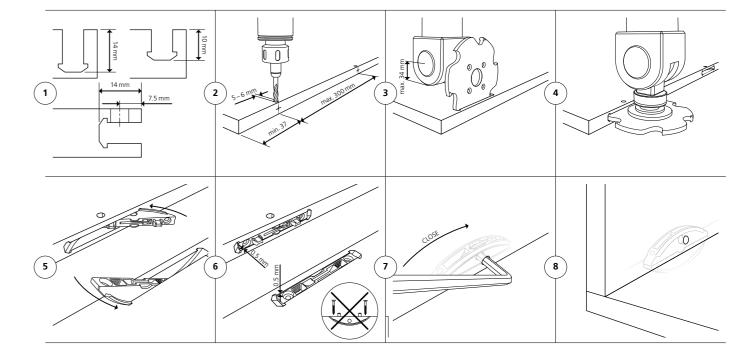


Clamex P-10	Art. No.
2000 pieces element without lever	145358



Clamex P-10 Medius	Art. No.
2000 pieces element without lever	145369

#### Function



#### www.lamello



Experience the connector live and receive comprehensive product information!



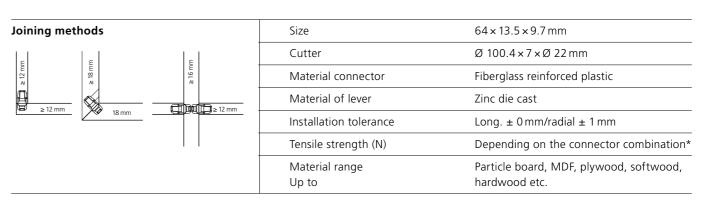












# **Application examples**

Clamex P

**Furniture manufacturing/Interior fitting:** Sideboards, shelves, wardrobes, trade show exhibits (display cases), kitchen furniture, TV furniture etc.

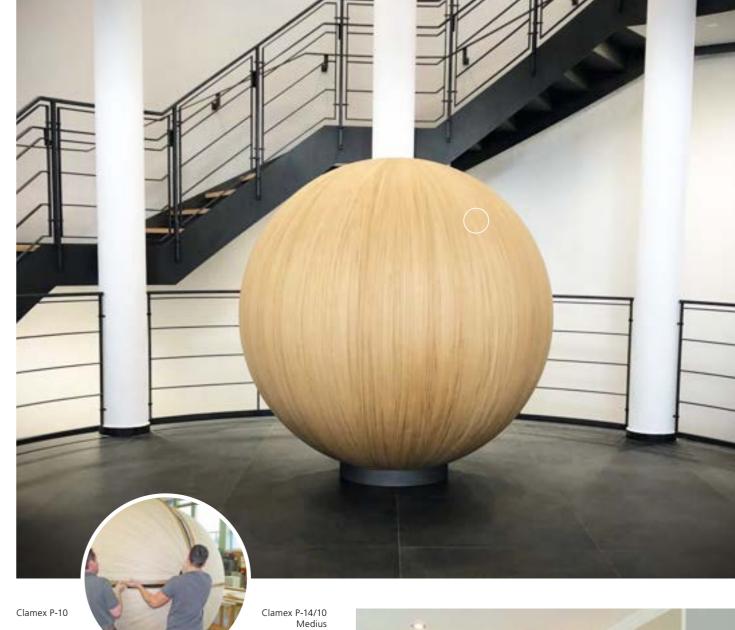
**Shop fitting/Kitchen manufacturing:** Wall elements, furniture, trade show exhibits (display cases), trade show exhibits, changing rooms, stools etc.



Clamex P-14 CNC



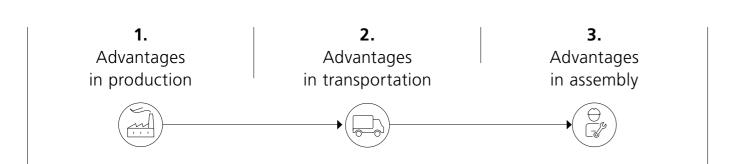






# Advantages of the Clamex P

Detachable furniture connector



- Machining possible with Zeta P2 or CNC machinery
- Only one tool change from P-System cutter to 6 mm drill
- Same groove everywhere: whether corner connection, shelf, centre panel or mitres
- Consistently competent partners: from CAD to CAM and CNC

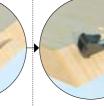
- Tool-free connector installation
- Workpieces with pre-installed P-System connectors are stackable for storage and transport
- No extra bags or loose hardware required with furniture shipment
- Tool-free connector disassembly for surface treatment
- Simple positioning of workpieces thanks to positioning pins
- Easy assembly with an Allen key
- Aesthetically small, barely visible hole ( $\emptyset = 6 \,\text{mm}$ )
- Open the connection time and time again with the rotating lever
- Lateral tolerance perfect, flush alignment of both workpieces



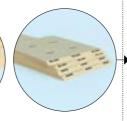
Machining with a Zeta P2 or CNC machine



Only one tool change



Tool-free connector installation



Flat pack delivery



situations

Versatile for all angles and joining



Strong and detachable connection

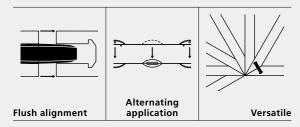


# Bisco P

Aligning element, suitable for the P-System groove



#### Features



Bisco P is a plastic biscuit which fits into the 7 mm P-System groove and is held in the groove due to its surface structure. Bisco P is used in combination with Clamex or Tenso as a cost-effective alignment element and ensures flushness of the joint. The Bisco can also be used as a dry joint as a test before the work piece is permanently joined with Tenso P and adhesive.

Bisco P-14 is used in combination with Clamex P-14 or Tenso P-14; and Bisco P-10 with the same connectors in size P-10.



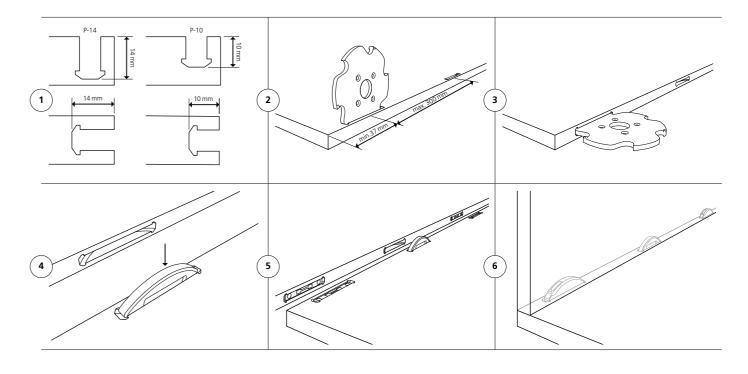


Bisco P-14	Art. No.
80 pieces	145301
300 pieces	145302
1000 pieces	145303



Bisco P-10	Art. No.
80 pieces	145304
300 pieces	145305

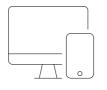
## Function



# Technical data

loining methods	Bisco P-14	
18 mm 75 mm 76 mm 78 mm	Size	65 × 27 × 7 mm
2 18 mm 2 2 2 mm = 2 2 9 mm	Cutter	Ø 100.4×7ר 22 mm
≥ 15 mm	Material connector	Plastic
	Installation tolerance	Long. ± 2 mm
	Tensile strength (N)	Depending on the connector combination
	Bisco P-10	
12 mm 15 mm 20 mm	Size	52 × 19 × 7 mm
2 12 mm   2 15 mm   2 20	Cutter	Ø 100.4×7ר 22 mm
≥ 12 mm ≥ 12 mm	Material connector	Plastic
	Installation tolerance	Long. ± 2 mm
	Tensile strength (N)	Depending on the connector combination
	Material range	Particle board, MDF, plywood, softwood, hardwood etc.

#### www.lamello



Experience the connector live and receive comprehensive product information!







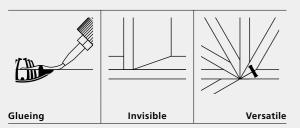


# Tenso P-14

Self-clamping connector for glueing materials from 16 mm thickness



#### Features



Tenso P-14 is a self-clamping glueing aid and is anchored in the form-locking P-System groove within seconds.

The high clamping force of Tenso leads to perfectly clamped joints without the need for clamps or presses, regardless of the angle of the work pieces.

Aesthetic joining is possible without visible connectors, with short assembly times and without the need to wait for the glue to dry. Tenso P-14 is used on mitre joints from 18 mm material thickness and in butt joints from 15 mm.



# Articles



Tenso P-14	Art. No.
80 pairs	145415
80 pairs, with preload clip	145415S
300 pairs	145425
300 pairs, with preload clip	1454255
1000 pairs	145435
2000 pieces element with spring	145440
2000 pieces element without spring	145441

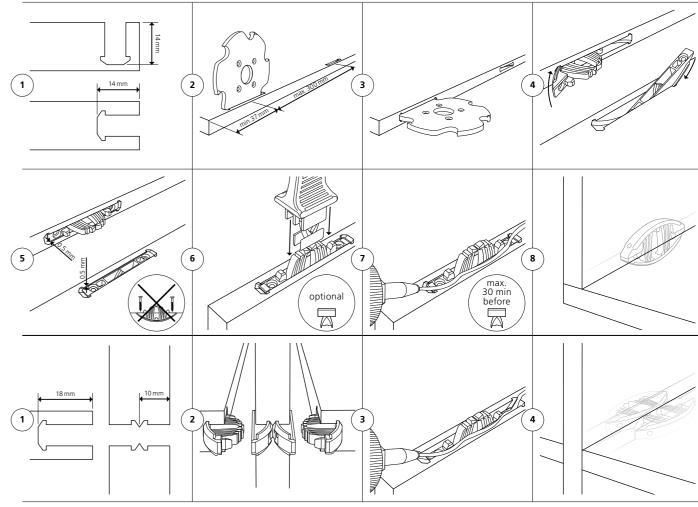


Tenso P-14 preload clip	Art. No.
300 pieces	145426
1000 pieces	145436



Tenso P-14	Art. No.
80 pairs	145415
80 pairs, with preload clip	145415S
300 pairs	145425
300 pairs, with preload clip	145425\$
1000 pairs	145435
2000 pieces element with spring	145440
2000 pieces element without spring	145441

## Function



### www.lamello



Experience the connector live and receive comprehensive product information!





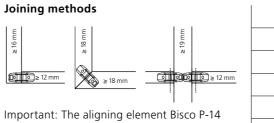












Important: The aligning eleme	ent Bisco P-14
is ideal to dry-assemble the jo	ints before
glueing	

Technical data

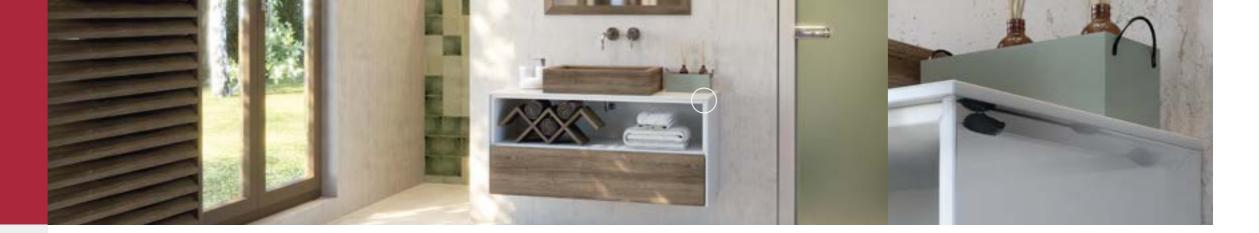
Size	66×27×9.7 mm
Cutter	Ø 100.4×7ר 22 mm
Material connector	Fiberglass reinforced plastic
Installation tolerance	Long. ± 1 mm/radial ± 1 mm
Tensile strength (N)	Depending on the adhesive
Material range	Particle board, MDF, plywood, softwood, hardwood etc.

27

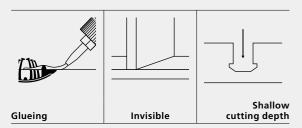
See PAGE 67 for technical specifications

# Tenso P-10

Self-clamping connector for glueing thin materials from 12 mm thickness



#### **Features**



Tenso P-10 is a self-clamping connector to glue and is anchored in the form-locking P-System groove within seconds.

The high clamping force of Tenso leads to perfectly clamped joints without clamps or presses, regardless of the angle of the work pieces.

Aesthetic joining is possible without visible connectors, with short assembly times and without having to wait or the glue to dry.

Tenso P-10 is used on mitre joints from 15 mm material thickness and in butt joints from 12 mm.



## Articles



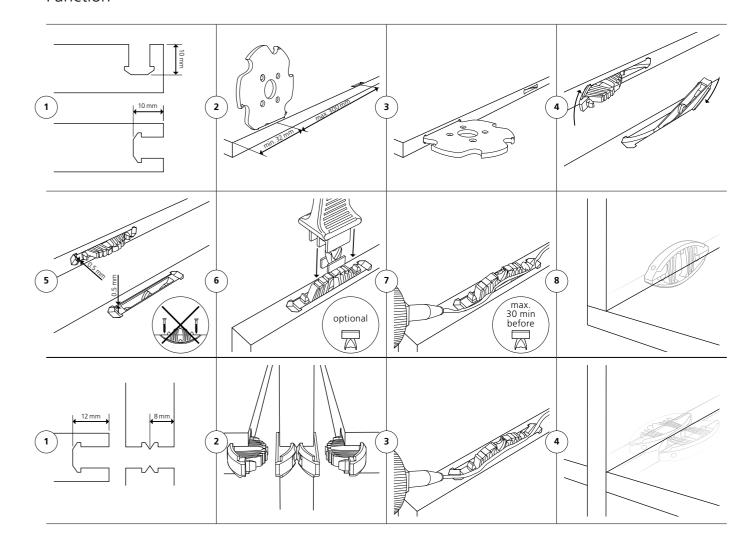


Tenso P-10	Art. No.
80 pairs, with preload clip	145418
300 pairs, with preload clip	145428
1000 pairs, with preload clip	145438
2000 pieces element with spring	145442
2000 Spieces element without spring	145443

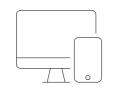


Tenso P-10 preload clip	Art. No.
2000 pieces	145445

## Function



#### www.lamello



Experience the connector live and receive comprehensive product information!







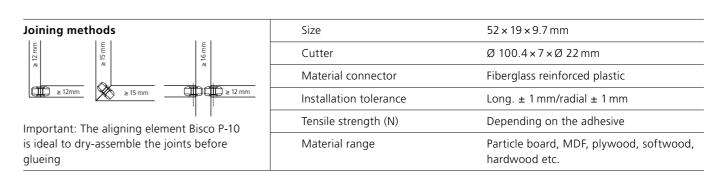








## Technical data



# **Application examples**

Tenso P

**Furniture manufacturing/Interior fitting:** Furniture, shelves, stools, sideboards, wardrobes, wall panels, cladding, decorative strips, covering panels, plinths, face frames etc.

**Shop fitting/Kitchen manufacturing:** Furniture, shelves, stools, sideboards, wardrobes, show cases, sales counters, wall panels, cladding etc.

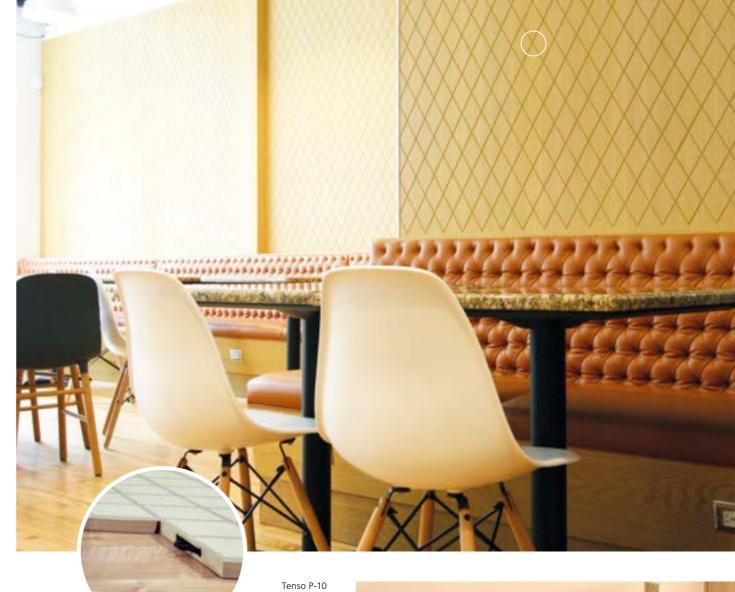
Tenso P-14



Tenso P-14







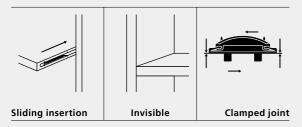


# **Divario P-18**

Self-clamping, invisible connector for slide insertion



#### **Features**



Divario P-18 is a detachable connector for slide-in insertion and is anchored in the form-locking P-System groove within seconds.

The connector is used to slide shelves or partitions into an already assembed cabinet. In the process, the Divario P-18 clamps the workpieces together firmly and ensures perfectly closed joints without visible connectors.

Divario P-18 is used for joining shelves to divisions from 18 mm panel thickness or in butt joints from 12 mm.

#### Articles

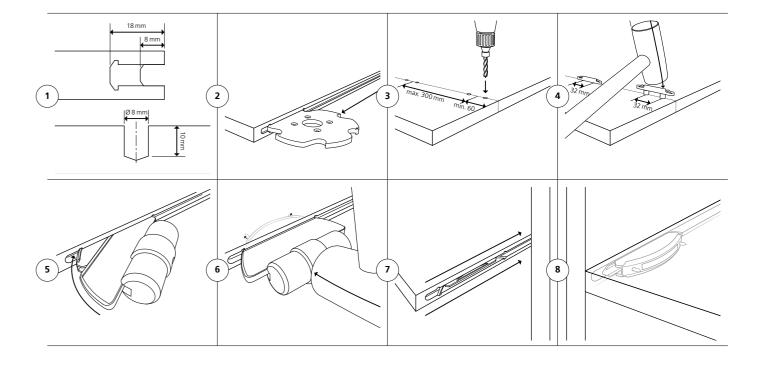


Divario P-18	Art. No.
80 pairs	145550
300 pairs	145560
1000 pairs	145570
2000 pieces, element	145520
for P-System groove	
2000 pieces, element	145540
for drill holes	



Divario P-18 Installation tool	Art. No.
For fixing the Divario in the workpiece	125500

## Function



#### www.lamello



Experience the connector live and receive comprehensive product information!





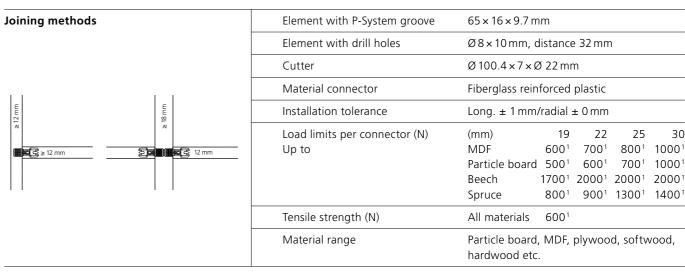








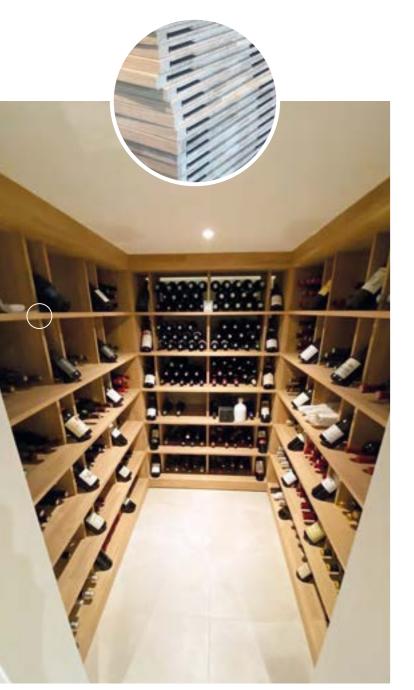




# **Application examples**

Divario P-18

**Furniture manufacturing/Interior fitting:** Furniture, shelves, open room dividers, wine racks, sideboards, wardrobes, separating walls, showcases, hanging elements etc.











# LiHD: The world's most powerful battery system in the industry

A unique interplay of:

- Intelligent battery management for long-lasting high capacity
- Patented AIR-COOLED system for short charging times with hot batteries
- High-quality cell structure with 50-percent reduced internal resistance ensures full Zeta power even with a small battery pack



Connection cap made of 50-percent thicker material for good thermal dissipation

Multiple power connectors for internal wiring provide continuously high power output

Reinforced current collectors for low heat losses

More active material in reactive surface for high capacity in a compact size

# Powerful 18 V LiHD battery pack either as 4.0 Ah or 5.5 Ah

### 18 V LiHD 4.0 Ah

- Included as standard battery in the set
- Compact, lightweight and powerful
- Suitable for all applications



### 18 V LiHD 5.5 Ah

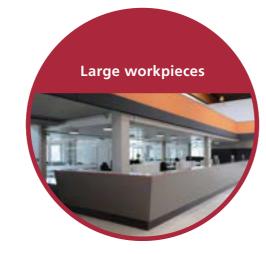
Available as an option for even longer working periods



# More flexible in the workshop

The ready-to-hand battery-powered biscuit joiner ensures greater efficiency and flexibility in the workshop.

- No tangling of the cable or the suction hose when machining large workpieces
- Cutting directly on the workpiece reduces the handling of bulky parts.
   There is also no need to disconnect and plug in the cable



- Quick production of furniture with different angles without complicated programming on the CNC
- Create prototypes without timeconsuming machine setup. Unrestricted design freedom thanks to the wide variety of joining elements



- The cordless power tool can be used to easily adapt or add grooves in no time
- Corner connections are quickly and precisely cut directly at the work bench



# Mobile working on the construction site

The cordless biscuit joiner makes work on the construction site much easier – there is no need to search for sockets and roll out the cable reel.



- Easily and flexibly cut grooves in fitted panels on site, even if the furniture has been completely machined on the CNC
- Additional grooves on the longitudinal joint for fillers or pillar cladding are created extremely efficiently after fitting



- For renovation work, the grooves are only cut directly on site after fitting
- Cable-free work facilitates handling overhead and in hard-to-reach niches



- Join components outdoors without access to a power connection
- No walkways between the processing site and the installation site, and no additional handling of the cable reel





# Zeta P2 cordless

The powerful P-System biscuit joiner for cordless freedom



**Features** 

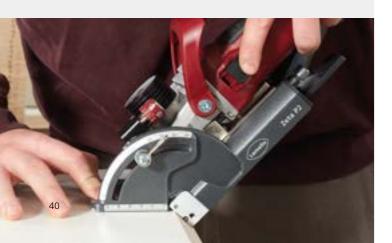




Automatic vertical movement

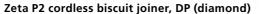
Cordless freedom

The Zeta P2 cordless is the battery-powered biscuit joiner for even faster joining, suitable for use with P-System connectors. It is used to create the form-locking P-System groove within seconds, and is even more flexible to use due to its cordless freedom. The integrated vertical mechanical drive is automatically triggered at the maximum cutting depth and performs a lateral cutter movement for the P-System groove. Connectors with various functions and different sizes can now be inserted into the form-locking P-System groove without the need for any tools.









Art. No

In systainer, incl. 2 batteries and charger,

101801DESD

plug type C Euro

In systainer, without batteries, without charger **101800DESD** 

In systainer, incl. 2 batteries and charger,

101801GBSD

plug type G

In systainer, without batteries, without charger **101800GBSD**For other plug versions please contact your local Lamello specialist



Zeta P2 cordless biscuit joiner, DP,  $2 \times$  battery pack 18 V, LiHD 4.0 Ah\*, battery charger ASC 55\*, P-System drill jig incl. drill, suction stub 36 mm, spacer 2 and 4 mm, dust bag, tool set, stop square

\* Only included in art. No. 101801DESD/101801GBSD

#### www.lamello



Experience Zeta P2 cordless live and receive comprehensive product information!







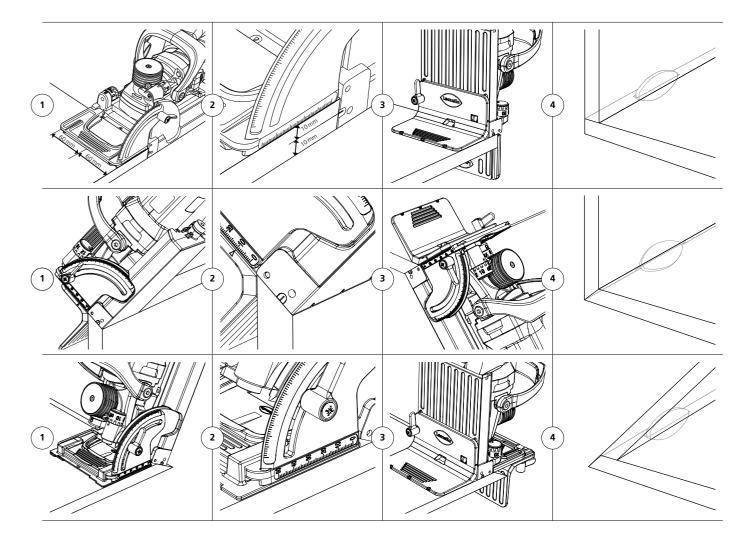








## Function



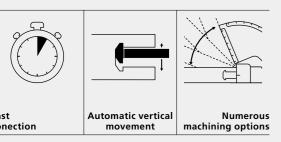
Battery voltage	18 V	Groove width	7/10 mm
Speed	9 000 min <sup>-1</sup>	Groove depth max.	20 mm
P-System Cutter	Ø 100.4×7×22 mm	 Weight	3.7 kg incl. battery

# Zeta P2

The machine for the evolving P-System, saving you time daily! Differentiate your products from the standard!



#### Features



The Zeta P2 is the biscuit joiner for P-System connectors and is used to create the form-locking P-System goove within seconds.

The integrated vertical mechanical drive is automatically triggered at the maximum cutting depth and performs a lateral cutter movement for the P-System groove. Connectors with various functions and different sizes can now be inserted into the form-locking P-System groove. The insertion into the groove is quick and without tools.



# Articles



#### Zeta P2 with P-System

groove cutter HW (carbide)	Art. No.
In systainer <sup>3</sup> M, plug type F Schuko	101403DES
In systainer <sup>3</sup> M, plug type G	101403GBS
In systainer <sup>3</sup> M, plug type C Euro	101403CHS

#### Zeta P2 with P-System

Art. No.
403DESD
403GBSD
403CHSD

For other plug versions please contact your local Lamello specialist



Zeta P2, P-System groove cutter, stop square, suction stub 36 mm, disc for angles, spacer 2 + 4 mm, tools, Clamex P drill jig incl. drill

#### www.lamello



Experience Zeta P2 live and receive comprehensive product information!





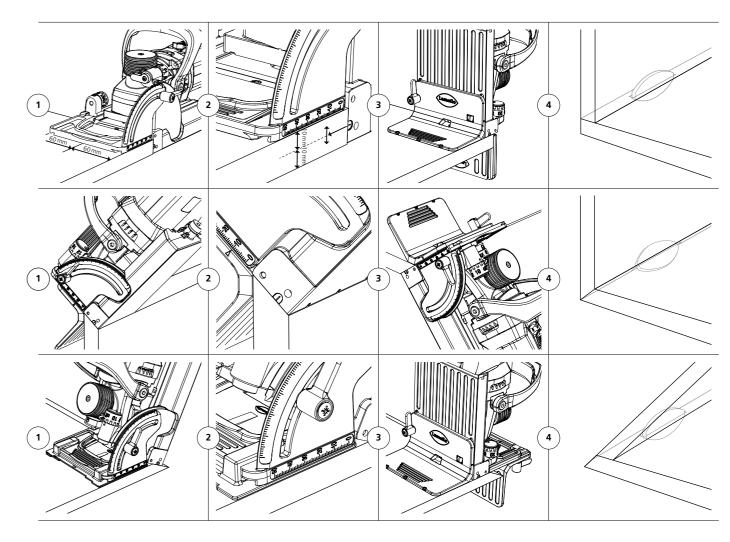








## Function



Power/Voltage	1 050 W/230 V	Teeth	Z3
	800 W/120 V	Cutting depth max.	20 mm
Speed	9 000 min <sup>-1</sup>	Weight	3.7 kg
P-System Cutter	HW: Ø100.9×7ר22 mm DP: Ø100.4×7ר22 mm	Weight	3.7 kg

# Accessories

Zeta P2 cordless and Zeta P2

# Connected in seconds ...

Without waiting time, clamps, or secondary processes, glued and clamped in 40 seconds

## Accessories



Stop square for Zeta P2, Top 21, Classic X	Art. No.
For stabilising the biscuit joiner in the vertical	251044
position, ideal for obtuse mitre joints	









#### P-System groove cutter DP (diamond),

Ø 100.4×7ר 22 mm	Art. No.
Z3, 4 NL for Zeta P2	132140



#### P-System groove cutter HW (carbide),

Ø 100.9×7ר 22 mm	Art. No.
Z3, 4 NL for Zeta P2	132141



#### Groove cutter HW (carbide),

Ø 100×4ר 22 mm	Art. No.
Z2 + V4 scoring teeth, 4 screw holes, hub	132000
for Zeta P2/Top 21/Classic X	



Dust bag	Art. No.
For Zeta P2/Top 21/Classic X	257532

## Batteries



Art. No. Battery pack 18 V, LiHD 4.0 Ah 313013



		Art. No.
Battery pack 18 V, LiHD 5.5	Ah	313015



Battery charger ASC 55	123100

Art. No.

## Advantage

with Clamex P – detachable			Time for one connector pair	
The state of the s	unummun.		1. Cut 2. Drill 3. Insert 4. Connect – finished!	25 15 5 5
1 Cut 2 Drill with Tenso P – glued		Connect – finished!	Ready in Time for one	50 s
			1. Cut 2. Insert 3. Apply glue 4. Connect – finished!	25 5 5 5
1 Cut Insert	Apply glue	Connect – finished!	Ready in	40 s



Please find the complete accessories range starting PAGE 68

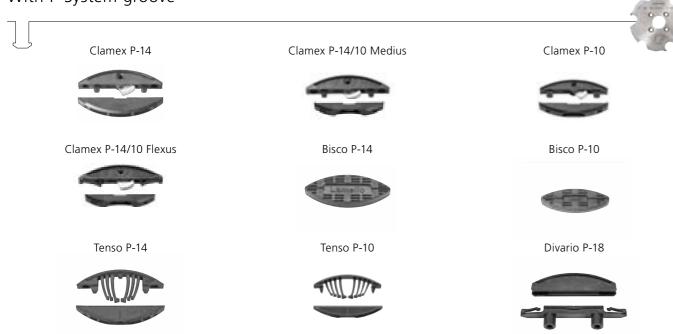
Versatile use with many different connecting elements.

With the Zeta P2, you can quickly and easily connect parts with a range of angles and joining situations. Suitable for individual pieces of furniture as well as prototypes and line production.



47

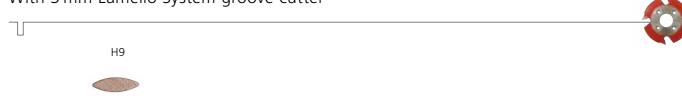
# With P-System groove



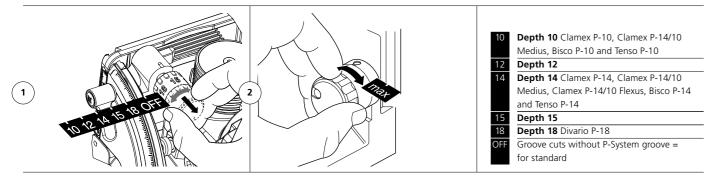
# With 4 mm Lamello System groove cutter



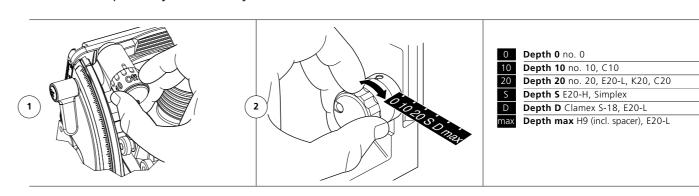
# With 3 mm Lamello System groove cutter



# P-System depth adjustment



# Lamello depth adjustment system



# Changing the cutter position

Using spacers

# Joints in various angles

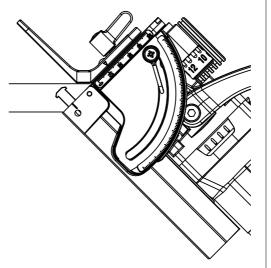
P-System grooves on edges cut to an angle



- The underside of the base plate and the swivelling front are reference surfaces with which the Zeta P2 is positioned on a work piece.
- The position of the **cutter** lies precicely in the centre between these two surfaces, so that the distance from the centre of the cutter to the edge will always be 10 mm.
- This distance can altered by using a **spacer** clilpped to the swivelling front.

# A. Positioning the Zeta P2 on the **face** of the workpiece:

or the inner side of the work piece as the reference surface.



Using this method, the multifunctional stop square is attached to the swivellig front and fixed at the desired position.

The machine is then applied on the work piece in such a manner, that the stop square rests on the outer side (green surface) of the workpiece.

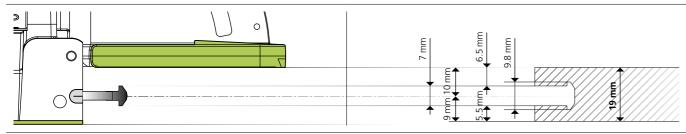
#### **Advantages**

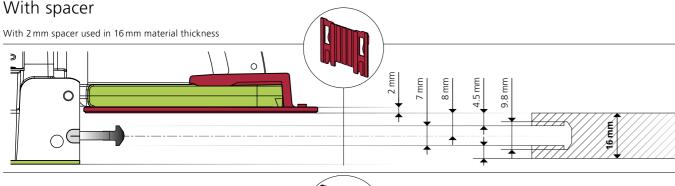
To create joints in various angles, at least one of the two workpieces needs to have one of its edges cut to an

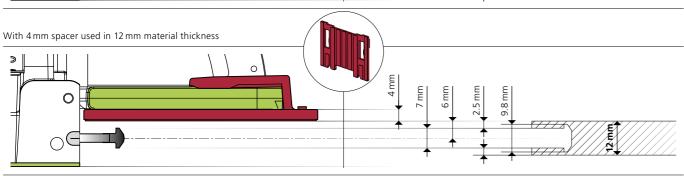
angle. There are two possibilities to cut a groove into an edge: Applying the Zeta P2 either on the outer side

- Perfectly flush on the visible work piece outer side. Material tolerances cannot lead to misalignment with this method
- Steplessly adjustable stop square, allowing for perfect positioning of the groove in every board thickness
- Thick work pieces with two rows of grooves (see picture above) with varying groove positions to increase strength
- No mistakes due to sliding during cutting because the machine sits very tightly in its position

### Without spacer



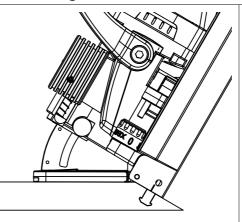




possible with this method

Only angles 45° oder 67.5° are

# B. Positioning the Zeta P2 on the **inner side** of the workpiece:



Using this method, the swivelling front is adjusted to the angle of the workpieces edge and then fixed in that position.

The machine now lies on the inner side (green surface ) of the work piece, due to which material tolerances can show on the outer side of the workpieces.

#### Advantages

- The groove position is fixed, however, to two more positions are available using the 2 mm or 4 mm spacers
- The advantage of this method is that all angles from 0-180 degrees are possible

# **Networked production**

From planning and design to procurement, programming and machining with CNC.

Our planning and processing partners support you with integrating Lamello connecting elements into your production process, from A to Z.

#### CAD/ERP/CAM software



#### CNC machines/Aggregates/CNC tools



tapio



# Components for the successful integration of Lamello connection systems into your networked production





#### CAD/ERP/Configurator software

- Design and planning software with integrated Lamello connectors
- Also download CAD data:
- from the Lamello website
- from iFurn
- from specialist retailers (ComNorm)

The degree of integration of the data and the parameterised position rules influence planning efficiency.



#### CAM software

- Software for generating CNC programming data
- Post-processor

Data transfer between CAD and CNC, and in particular the control of the macros/component, must be individually coordinated.



#### CNC machine

- Machine with 3/4/5-axis

The number of axes and equipment options influence the processing possibilities



OERTLI 🕸

#### CNC software

- Purchase software for machine/macro/component from the manufacturer or
- Program the machining process yourself

The macro/component determines/affects the processing possibilities



#### Suitable aggregate

- Aggregate sub-program
- The angle aggregate makes it easier to cut the P-System groove in the surface and the centre of the surface

The right unit can significantly increase efficiency when cutting connectors.



Purchase tools from Lamello or a P-System tool partner
 You can find the tools recommended by Lamello on PAGES 62-63.

The right cutting tool can significantly increase precision and efficiency when cutting the connectors

Note: These are planning and machining tips, please contact your system providers/specialists if necessary.

# **Service overview**

Lamello's planning and machining partners



		М	achir	ing p	artne	rs C	NC m	achir	nes/A	Aggre	gate	s/CI	NC to	ools																				
ompany			AES		Diesse		Felder	F			HOLZ-HEK		Holzfraese		Homag		MO MO		IMA	INFOTEC	Masterwood		SCM, Morbidelli		Vitap	Atemag	Benz Tools	T T T T T T T T T T T T T T T T T T T	GROTHEFELD	HSD	Leitz	Leuco	Oertli	
				⊗BI	ESSE		FORMA	GANNO	mat	HOL	ZHER	Ho	olzfraest oly deuemn.		не нома	)	KOI	MO(,	MA SCHELLING GROUP	INFOTEC	<b>⊘</b> masterwo	of scr	m@group		/itap	TEMAS	BEI	NZ GROT		HSD SECRETARIS	leitz	LEUCC	OERTLI	
Product name		CNC machines	AesWOP	CNC macnines bSolid	NC Hops bCabinet	CNC machines	F4Integrate	CNC machines	LOMA!	CNC machines	CabinetControl NEO	3D-Master	CNC machines SmartWOP	Macchine CNC	WoodWOP		CNC machinas	לואל ווומלוווועס	CNC machines	CNC machines	CNC machines		Maestro CNC	Xylog Plus CNC machines	Software TPA	Various	Various	2	Various	Various	Various	Various	Various	
Offer/	ERP software			1																														
laterial nanagement/	Interface with procurement																																	
ordering	Interface with CAD				•				•	•		•	•						•		•		•		•									
isualisation / anning /	Interface with ERP				•				•				•		•																			
onstruction/ arts list	Data cloud for CAD data																																	
	CAD 2D software			•	•		•																		•									
	CAD 3D software			•	•		•					•			• •						•				•									
	Configurator				•				• 1		•	•	•		•						•													
INC programming	Interface with CNC		• 4	•	• •		•		•	•	•	•	•		• •				•	• 2	•	)	•		•									
	CAD/CAM software		•	•	• •		•			•	•	•	•		•				•		•	)	•		•									
	WOP programming software		•	•	• •		•		•	•		•	•		• •				•				•	•										
	ISO programming software				•		•					•					•	2						•										
NC machining	CNC with consoles	•		•		•				•				•			•		•	• 3	•	•												
	CNC vertical/horizontal (compact)	•		•		•		•		•				•			•	•		•	•	•		•										
	CNC nesting	•		•		•				•		•	•	•			•	•	•	•	•	•												
	Aggregates			•		•				•				•								•		•		•	•	•	•	•				
	CNC tools																														•	•	•	

# P-System with CNC

Joining methods and requirements for CNC machines/machining options



CNC machines			With consol vertical or h					43.747.000	With nestin	g technology	,		
Number of axes			3			4	5		3		5		
				Machining option	Machining option			Machining option		Machining option			
Joining methods	Machining		•										1
	Access drill hole	U											
	Profile groove in the edge					C				G		G	
	Profile groove on the surface (close to the edge)		A	E	F	C			E	F	D	A	F
	Profile groove on the surface (centre of the surface)*		A	E	F	C	A		E	F	D	A	F
	Access drill hole 45°					C							
	Access drill hole 45°		B			C							
	Access drill hole 22 – 108°					C							
	Access drill hole 22 – 108°					C							
54 * The Divario	P-18 can also be used as an alternative connec	ting element in the mi	ddle of the surface (2	×8mm holes with	out profile groove)	The information co	oncerns technical op	tions regarding how	the applications cou	ıld he implemented			5!

<sup>\*</sup> The Divario P-18 can also be used as an alternative connecting element in the middle of the surface. (2 × 8 mm holes without profile groove)



Detailed information on machining	Detailed information on machining	Possible setup of aggregates and tools	Comments
		Integrated CNC Z-axis with drill (5/6 mm) or with collet chuck for clamping Ø 10 mm and drill 131556	P-System CNC drill bit on PAGE 62
		Saw blade clamp Ø 40/DTK 52 mm and cutter 132143 or with collet chuck and cutter arbor	You can find dimensions for cutters and clamping Ø and lengths of cutter arbors on PAGE 62/63
		Angle aggregate  One to four spindle angle aggregates  Floating trimming unit for P-System  Corner notching aggregate  Aggregate for door locks	A unit overview can be found on the Lamello website: www.lamello.com under planning and machining partners
B		Manually adjustable swivelling aggregates Information: Several tool changes required for angle cuts, drilling and P-System grooves	<b>Note:</b> The cutting depth in the centre of the surface may be restricted depending on the model. <b>Tip:</b> For a mitre, the drill hole could be made with the manual drill
C max. 10 mm		Automatically adjustable swivelling aggregates with automatic tool changer (FLEX5+C/5-MOTION PLUS/Flex5+C, from year of manufacture 2015)  - Tool holder WFC 40-25 clamping Ø 10 mm for drill  - Drill shaft Ø 10 mm, tool protrusion max. 50 mm  - Tool holder WFC 40-25 with flange and cutter 132143	<b>Note:</b> In the centre of the surface, the profile groove depth is limited to 10 mm
D		Shrink chuck for clamping Ø 12 × 40 mm and shaft tool 131342 or collet chuck for clamping Ø 12 × 40 mm and shaft tool 131342	P-System CNC shaft tool cutter on <b>PAGE 63</b> .
E			

\* More information on PAGES 62-63

The information concerns technical options regarding how the applications could be implemented.

These must be adapted to your company facilities and coordinated with the planning and machining partners.

Possible combination of CNC machines with Zeta P2

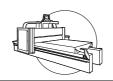
More regarding the machining on PAGE 61











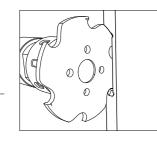


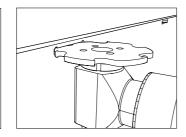


# **P-System** equipment options

For CNC machines for particularly efficient machining







Vertical and horizontal CNC machining centres «CNC compact class»









#### **IE HOMAG**

#### **DRILLTEQ V-500** 25-spindle + 1× aggregate (VKNR 1549) 1× tool set (VKNR 9763)

#### **EVOLUTION 7405** Connect

#### **BIESSE**

# Brema Eko 2.1

1× aggregate 2× P-System CNC groove cutters 1x P-System CNC cutter arbor 1× drill Ø 6 mm

0 · 2 · 6

Nextec 7707

1x tool set

#### BIESSE

#### Brema Eko 2.2

1× aggregate for 90° 1× aggregate 45° for 2× 45° 2× P-System CNC groove cutters 1× P-System CNC cutter arbor 1× drill Ø 6 mm















#### Project TF 100/TF 100 2.0

1× aggregate 2× P-System CNC groove cutters 1x P-System CNC cutter arbor 1× drill Ø 6 mm



1× aggregate 2× P-System CNC groove cutters 1x P-System CNC cutter arbor 1× drill Ø 6 mm

**4**morbidelli

cx 210





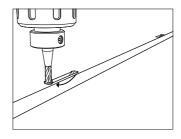


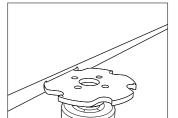
# **■Vitap**

#### Vitap K2 2.0

1× aggregate 2× P-System CNC groove cutters 1x P-System CNC cutter arbor 1x drill Ø 6 mm









# FORM AT

#### Creator 950

1× P-System CNC groove cutter in HSK63F 1x P-System CNC shaft tool cutter\* in HSK63F 1× drill Ø 6 mm

\*optional for P-System CNC shaft tool cutter: 1× aggregate for 90° 1× P-System CNC groove cutter





## GANNO*mat*

#### ProTec + P-System add-on package

Editor with Lamello P-System macro 1× P-System CNC groove cutter in HSK63F 1× P-System CNC cutter arbor 1× P-System CNC shaft tool cutter 1× drill Ø 6 mm





# **HE HOMAG**

#### **DRILLTEQ V-200**

woodWOP «Lamello P-System» component 1x P-System tool set



## HE HOMAG

#### **DRILLTEQ V-310**

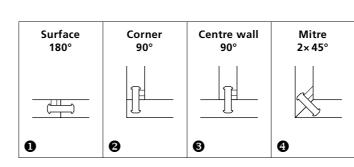
for 180° + 90° joints: woodWOP component «Lamello P-System» 1× P-System tool set

additionally for 45° joints: 2× aggregate 45° 1× tool set for 45°

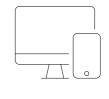
0 . 2 . 6

0 . 2 . 3 . 4

#### Connectivity



### www.lamello



Experience CNC live and receive comprehensive product information!









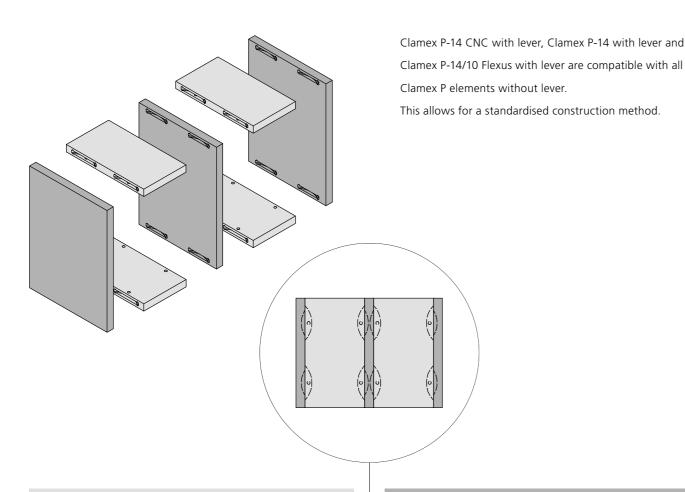




# Ideas for standardising

The machining on a CNC machine

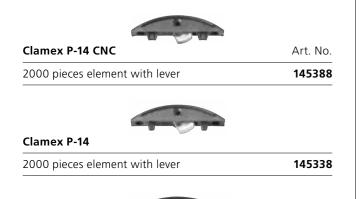
# Possible combination of CNC machines with Zeta P2



**Depth 14 mm** for all P-System grooves in the panel edge (with the access hole)

Clamex P-14/10 Flexus

2000 pieces element with lever



145318

Depth 10 mm for all P-System grooves in the surface

Clamex P-10 Art. No. 2000 pieces element without lever 145358

Clamex P-10 Medius 2000 pieces element without lever 145369

Precise drilling on a CNC machine; use these drill holes to position the Zeta P2 to cut the P-System grooves. This application is especially ideal if the CNC machine is a nesting machine and or no aggregate is available. This method combines the precision and efficiency of a CNC machine and uses the simple and fast machining of a P-System groove with a Zeta P2.

## Positioning drill holes for the Zeta P2









#### Positioning pin CNC for Zeta P2,

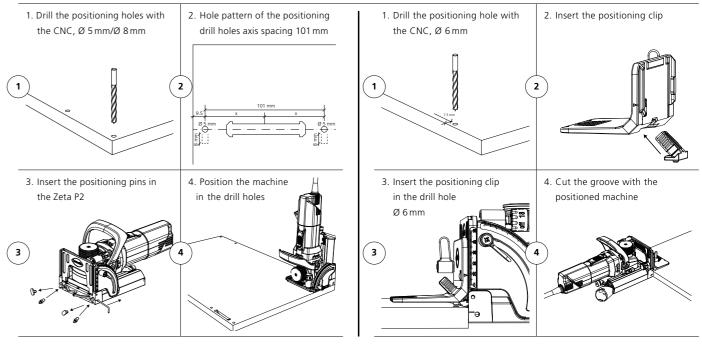
2 pieces	Art. No.
Ø 5 mm	251048
Ø8mm	251066

#### Positioning clip CNC

access hole (6 mm)

for Zeta P2	Art. No.
Ø 6 mm	251067
for positioning in the Clamex P	

## Machining steps



# **CNC** tools

For the P-System



# P-System CNC tools



P-System CNC drill bit Art. No.  $\frac{131556}{6 \text{ mm}}$ , solid carbide, for mitres,  $\frac{131556}{10 \text{ mm}}$ 



#### P-System groove cutter CNC DP (diamond),

Ø 100.4×7 mm	Art. No.
Ø 100.4×7ר 30 mm, Z3, NL 4ר 6.6ר 48 mm	132142
suitable for all P-System CNC cutter arbor listed	
on the right	
Ø 100.4×7ר 30 mm, Z3, NL 4ר 6.6ר 48 mm	132149
LH for Weeke BHX 200 / DRILLTEQ V-500	
(left hand rotation)	



Art. No.

 $\emptyset$  100.4 × 7 ×  $\emptyset$  30 mm, Z6, NL 4 ×  $\emptyset$  6.6 ×  $\emptyset$  48 mm **132145** suitable for all all P-System CNC cutter arbor listed on the right



Art. No.

Ø  $100.4 \times 7 \times Ø$  40 mm, Z3, NL  $4 \times Ø$   $5.5 \times Ø$  52 mm **132143** E.g. for angle aggregates and FLEX5+C/ 5-MOTION PLUS



Art. No.

 $\varnothing$  100.4×7× $\varnothing$  16 mm, Z3, NL 4× $\varnothing$  5.5× $\varnothing$  28 mm **132144** E.g. for corner notching aggregate



Art. No.

Ø 100.4  $\times$  7  $\times$  Ø 35 mm, Z3, NL 4  $\times$  Ø 5.5  $\times$  Ø 50 mm 132148 e.g. for Brema Eko 2.1, Masterwood Project TF 100, Format4 D-Jet Ø 100.4  $\times$  7  $\times$  Ø 35 mm, Z3, NL 4  $\times$  Ø 5.5  $\times$  Ø 50 mm 132180 LL e.g. for Format4 Nesting profit H08 (left hand rotation)

#### One tool with 2 functions



#### CNC cutter arbors for P-System groove

cutter, Ø 30, NL 4×M4ר 48mm	Art. No.
Shaft Ø 20 × 50 mm, L = 102 mm	132150



Art. No. Shaft Ø 25 × 60 mm, L = 102 mm 132151



Art. No.
Shaft Ø 16 × 50 mm, L = 85 mm

132152



Art. No. Shaft Ø 16 × 55 mm, L = 68 mm 132153



Art. No. Shaft  $\emptyset$  16 × 50 mm, L = 85 mm, with clamping 132154 surface (2°- angle) e.g. for aggregate for door locks



Art. No.

Shaft Ø 20 × 50 mm, L = 85 mm,

with clamping surface (2°- angle)

e.g. for aggregate for door locks

M6 × 16 mm Torx countersunk bolt, 4 pieces,

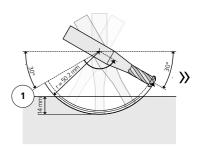
suitable for cutter arbors

Screwdriver with cross-grip, Torx T20 × 100 mm

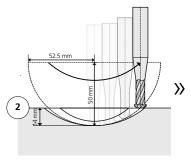
271919



P-System CNC shaft tool cutter	Art. No.
HW solid (carbide), shaft Ø $12 \times 40$ mm, L = $80$ mm	131342



P-System CNC shaft tool cutter with 5-axis



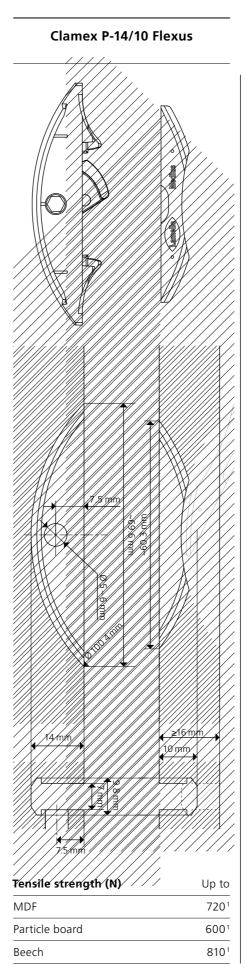
P-System CNC shaft tool cutter with 3-axis

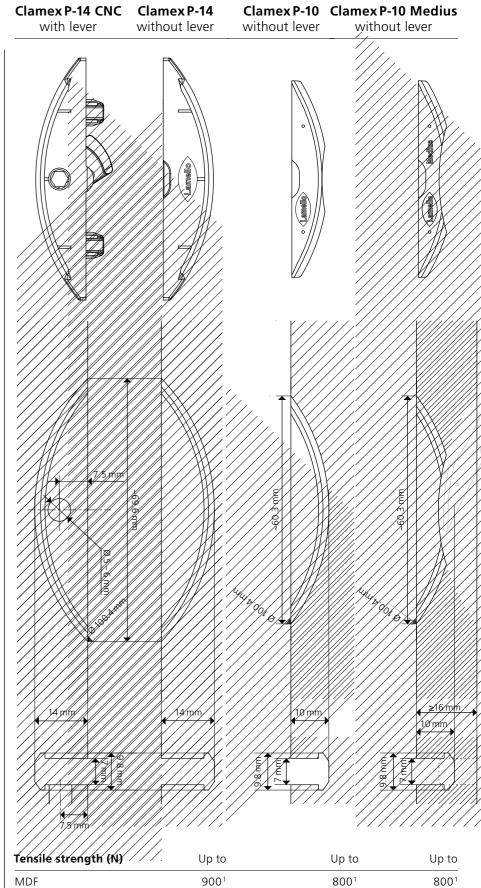
Lamello recommends making all profile grooves with a disc cutter, primarily for reasons of precision, service life, machining time and thus economic efficiency.

A P-System CNC shaft tool cutter or contour cutter should only be used for the machining of surfaces if no angle aggregate is available.

Overview of connectors + grooves (scale 1:1)

Clamex P-14	Clamex P-1	0	Clamex P-14/10	Medius
7.5,mm 69.6,mm 89-6,mm 10.5,mm	5.5 mos		1,5,mm 69,67mm 2,55,67mm 2,55,67mm 2,55,67mm	
14 mm	10 prim	190 pm	14 min	216 mm 10 mm
Tensile strength (N) Up to MDF 9001		Up to 600 <sup>1</sup>	MDF	Up to 800 <sup>1</sup>
Particle board 800 <sup>1</sup>	Particle board	600¹	Particle board	6001
Beech 1000 <sup>1</sup>		9001	Beech	900¹





900¹

8001

1000¹

Particle board

Beech

800¹

600¹

900¹

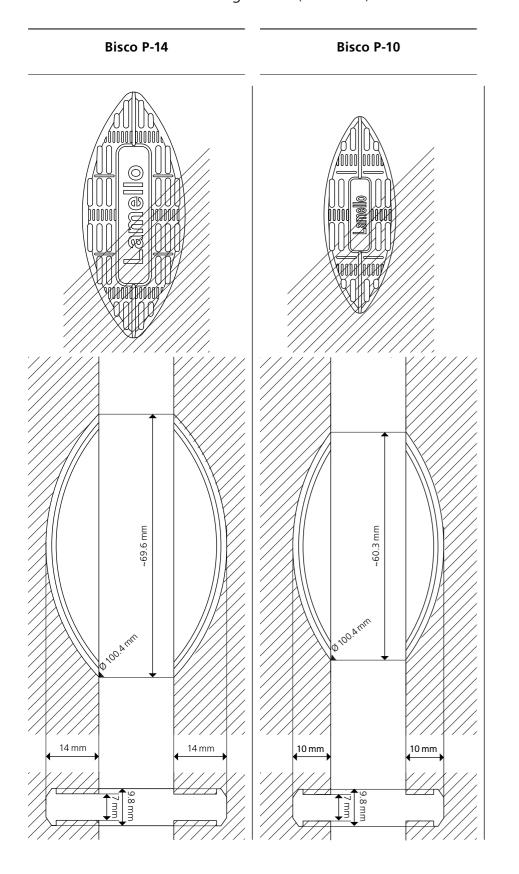
800<sup>1</sup>

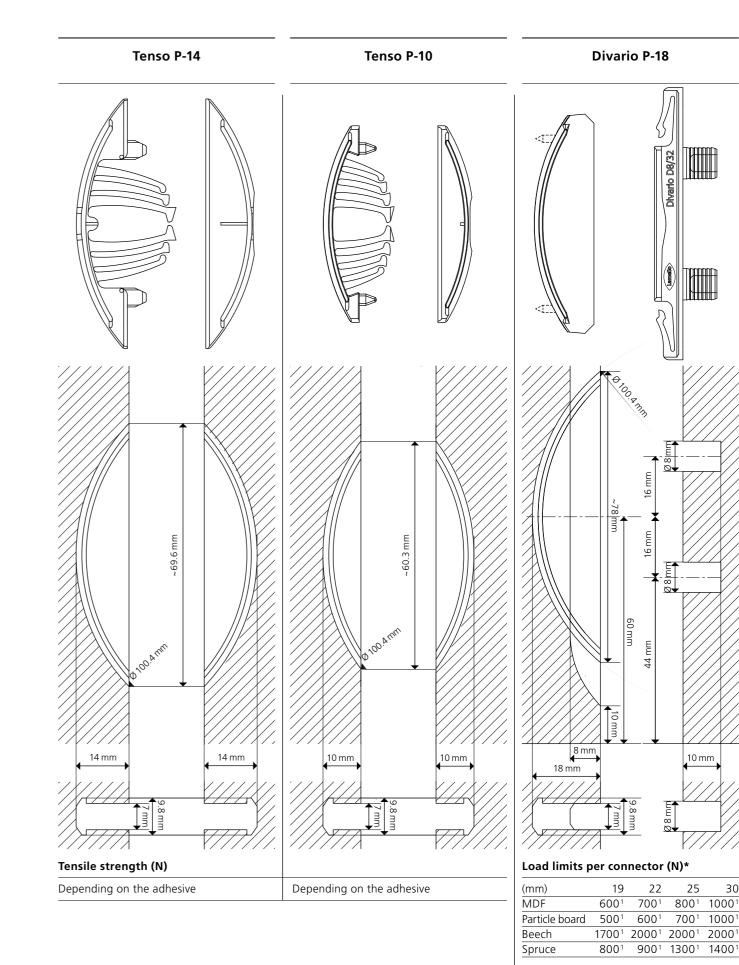
600¹

900¹

<sup>&</sup>lt;sup>1</sup> See comment on load limits on **PAGE 75** 

Overview of connectors + grooves (scale 1:1)





 $<sup>^{\</sup>rm 1}$  See comment on load limits on PAGE 75 I \* Up to

# Tensile strength (N)

8001 10001

700¹ 1000¹

# Accessories / Spare Parts

P-System



# P-System



#### P-System connector assortment

professional	Art. No.
Scope of delivery: 120 pairs Clamex P-14,	145323
30 pairs Clamex P-14/10 Flexus, 30 pairs Clamex P-10	),
120 pairs Tenso P-14 incl. preload clip, 30 pairs Tenso	P-10
incl. preload clip, 20 pieces Bisco P-14, 20 pieces Bisc	o P-10,
80 pairs Divario P-18, Divario installation tool/drill/	
marking gauge, Clamex P installation tool, Tenso P-1	4/10
preload tool, Sortainer T-loc	



#### P-System connector assortment

basic	Art. No.
Scope of delivery: 80 pairs Clamex P-14,	145314
80 pairs Tenso P-14 incl. preload clip,	
30 pairs Clamex P14/10 Flexus, 30 pairs Clamex P-1	4/10
Medius, 20 pieces Bisco P-14, Tenso P-14/10 preload	d tool,
Systainer II T-Loc incl. compartment dividers	

# Clamex P





Allen key	Art. No.
4 mm, 75 x 55 mm	271945
4 mm, 120 × 50 mm	271945A







Cover cap, 100 pieces, 90°		Art. No.
RAL 9010 pure white	$\bigcirc$	335280
RAL 9011 graphite black	•	335281
RAL 1014 ivory, pine		335282
RAL 1011 brown beige, beech		335283
RAL 8007 fawn brown		335284
RAL 8017 chocoloate brown		335289
RAL 9002 grey white		335285
RAL 7035 light grey		335286
RAL 7040 window grey		335287
RAL 7031 blue grey		335288
RAL 7022 umbra grey		335298

	Art. No.
$\bigcirc$	335362
•	335363
	335364
	335365











Art. No.
125344
255250
255251
255252



Clamex P drill jig long	Art. No.
Drill jig for thick workpieces 100 mm,	125345
(P-14), incl. drill	



Drill	Art. No.
piral drill Ø 6 mm with centering point,	131506
or Clamex P drill jig	
piral drill Ø 6 mm with centering point,	131508
or Clamex P drill jig long	
Depth adjuster for drill, 6 mm diameter	255243

# Accessories / Spare Parts

P-System



# Combination CNC and Zeta P2



#### Positioning pin CNC for Zeta P2\*,

2 pieces	Art. No.
Ø 5 mm	251048
Ø 8 mm	251066



Positioning clip CNC for Zeta P2*	Art. No.
Ø 6 mm	251067

for positioning in the Clamex P access hole (6 mm)

#### Tenso P



Tenso P-14/10 preload tool Art. No.
Tool to pre-load the Tenso P 145400



## P-System 4 mm depth

adjuster attachment for P-8	Art. No.
For offset installation on dividing panels	145439
16 mm with Tenso P-10	

# Divario P



#### Divario P-18 Marking jig metal with

marking points	Art. No.
Marking jig incl. drill with centering point and	125510
rotating depth collar for the precise drilling of	
Divario drill holes by hand	



#### Divario P-18 Marking jig plastic,

to mark with a pencil	Art. No.
Marking jig to mark the Divario holes	125511
with a pencil	



Divario P-18 Installation tool	Art. No.
Divario P-18 Installation tool for fixing	125500
the Divario in the workpiece	



Divario P-18 Starter set	Art. No.
In systainer3 M137, scope of delivery:	145552
Divario P-18, 80 pairs, drill, marking jig in metal	
and installation tool	

# Zeta P2



#### Stop square for

Zeta P2, Top 21, Classic X	Art. No
For stabilising the biscuit joiner in the	251044
vertical position, ideal for obtuse mitre joints	



# 1



pacer for Zeta P2, Top 21, Classic X Art. N	
5 mm, aluminium for 18 mm panels	253027
2 mm, plastic for 16 mm panels	253023
4 mm, plastic for mitres	253026



#### P-System groove cutter DP (diamond),

Ø 100.4×7ר 22 mm	Art. No.
Z3, 4 NL for Zeta P2	132140



#### P-System groove cutter HW (carbide),

Ø 100.9×7ר 22 mm	Art. No.
Z3, 4 NL for Zeta P2	132141



Dust bag	Art. No
For Zeta P2/Top 21/Classic X	257532

## **Batteries**



Art. No.
Battery pack 18 V, LiHD 4.0 Ah

313013



Art. No. Battery pack 18 V, LiHD 5.5 Ah **313015** 



Art. No.

Battery charger ASC 55

123100DE

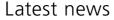
71

\* For detailed information, see **PAGE 56** 

# We are here for you!

Support in person

Do you have any questions concerning our products or a certain application? Would you like to learn more about the process benefits for your business? Our qualified employees and sales partners will be happy to help you quickly and competently, whether by telephone, online or during a personal support on site.



Stay up-to-date and sign up for our Lamello News and e-newsletter. Become part of the Lamello community on social media and be inspired, or visit our stand at one of the numerous trade fairs. We are always happy to hear from you.



# Support in your planning

With the connector search and the P-System configurator on our website, you can quickly find the right connector for your design and requirements. With CAD data for our connectors, tips and tricks, as well as videos about the wide range of applications, we can guide and support you in your planning on our website and on the Lamello YouTube channel.

# Qualified sales partners

Our professional and committed sales partners provide you with qualified advice, always keeping you informed about new products. This way, you can see the benefits of our products first hand.

# Competent planning and machining partners

From planning and design to the right tool to machine with the CNC machine: more than 40 industry-leading partner companies support the efficient use and integration of our products into your production.

Quality is one of the cornerstones of our business, and so our products are designed to last. If a repair is necessary, we can offer you uncomplicated service through our certified Lamello service partners and a spare parts warranty of at least 10 years.

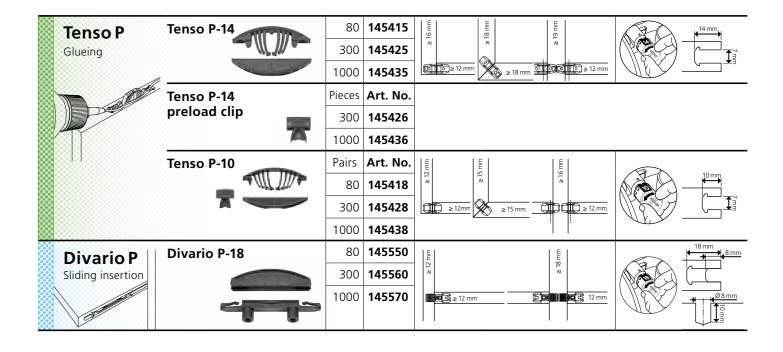
service partners and a spare parts warranty of at least 10 years.

P-System configurator

# Overview of connectors

P-System

Clamex P	Clamex P-14	Pairs	Art. No.	0.   E
Detachable		80	145334	
		300	145346	
		1000	145356	
	Clamex P-14/10 Medius	80	145370	0   M   N   N   N   N   N   N   N   N   N
		300	145371	
		1000	145357	18 mm 210m 32 ≥ 12 mr 14 mm .
	Clamex P-10	80	145372	
		300	145373	
		1000	145374	≥ 12 mm ≥ 15 mm
	Clamex P-14/10 Flexus	80	145315	15 mm 15 mm 15 mm 15 mm 17 mm 18 mm 18 mm 18 mm 19 mm
		300	145316	
		1000	145317	18 mm 14 mm 14 mm
	Bisco P-14	80	145301	1   E   E   E   E   E   E   E   E   E
		300	145302	
	BE BE	1000	145303	
	Bisco P-10	80	145304	
	450	300	145305	
				≥ 12 mm ≥ 15 mm



# **Disclaimer regarding load limits**

Wherever we list information on material strength or loads for our products, they are empirical values of load limits, based on specifically defined test conditions similar to DIN 68501:2016-11. Specific characteristics, in particular to the effect that the products will reach the listed loads in the actual used case, are not thereby guaranteed. Rather, it is the responsibility of the respective user to check and ensure the suitability of the products for each specific used case. Since actual load limits substantially depend on circumstances unrelated to the products themselves, e.g. the properties of the carrier materials used, the assembly or the installation environment, any advice provided by us in the form of a product recommendation with regard to a specific suitability is always non-binding and does not release the user from his or her own examination. To the maximum extent possible under the law, all warranties, express or implied are DISCLAIMED. This includes, but is not limited to, any warranty of fitness for a particular purpose or merchantability. We undertake no responsibility that the goods except as may be included in any contract, and we assume no responsibility that the goods will be fit for any particular purpose, except as may be provided in any contract.

#### Subject to modifications and amendments

© Lamello AG. The content of this brochure is protected by copyright and cannot be used for any other purpose without the written consent of Lamello AG.



Manufacturer: Lamello AG Joining technology Hauptstrasse 149 CH-4416 Bubendorf Tel. +41 61 935 36 36 Fax +41 61 935 36 06 info@lamello.com www.lamello.com