



Connector trends

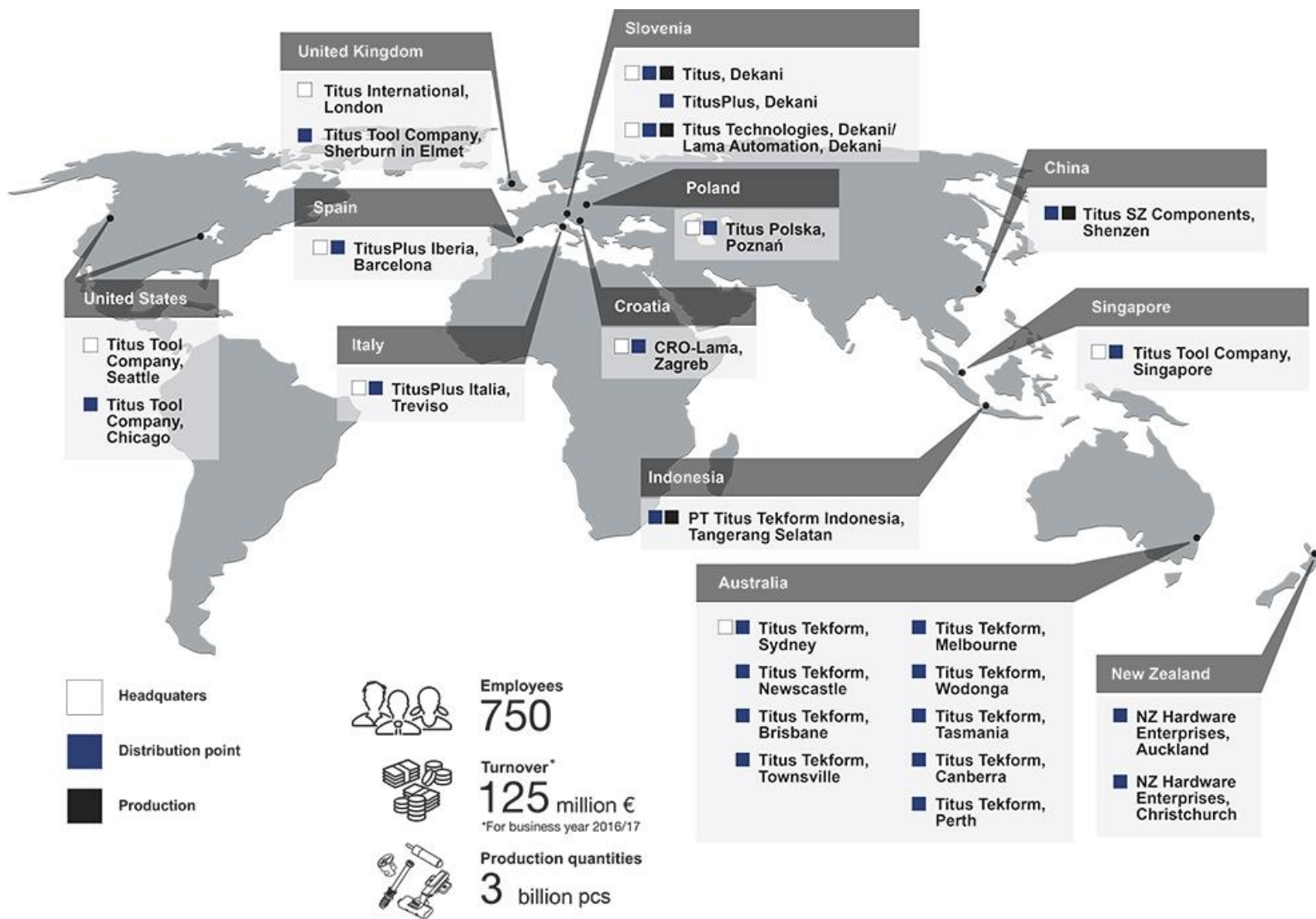
Mike Zary



- Titus – who we are
- History of connectors
- RTA market
- E-commerce growth
- Connector options
- New products

Who are we?

A group of companies under the umbrella of UK Titus International



Product Groups

Titus furniture hardware



- ▶ Furniture connectors
- ▶ Concealed hinges
- ▶ Furniture damping
- ▶ Drawers and runners
- ▶ Kitchen accessories

Titus hydraulic damper



- ▶ Hydraulic dampers

Lama Automation



- ▶ Die cast technologies
- ▶ Automated assembly systems
- ▶ Tooling
- ▶ Ultrasound fastening

History of cams and dowels

- Designed to hold large furniture together
- Screw-in dowels and cams first offering
- To reduce CAF scores the push-in dowel
- Manufacturing tolerances came with TL 2,3 and 4
- Better holding in multiple materials TL5



RTA furniture sales

- Total U.S. furniture sales were \$70 billion in 2016, according to One Click Retail.
- Online furniture sales is growing to more than \$36 billion in 2017 and is expected to rise to more than \$55 billion by 2020, according to eMarketer.
- Amazon furniture sales were \$2.3 billion in 2016. YTD furniture sales are up 50 percent in 2017.
- IKEA to launch 3rd party online platform

Reasons for on-line growth

- Shop from home
- Delivered right to home
- Prices are very competitive
- Immediate satisfaction (no long lead-time to get product)
- Manufacturing is moving back to North America



Problems associated with RTA

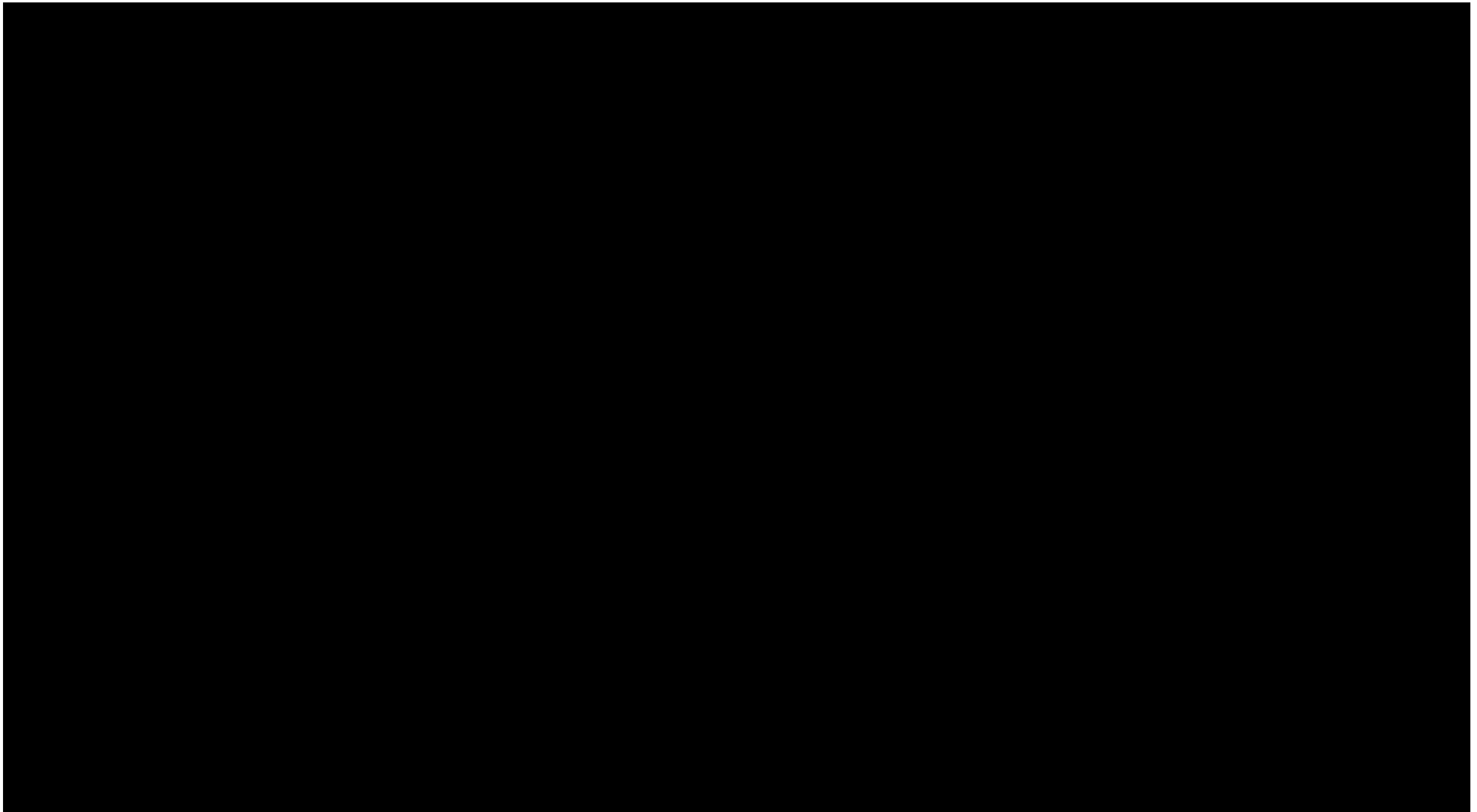
- Assembly challenges to the end user
- Heavy to ship
- Difficult to package
- Consumers acceptance not as high as rigid furniture
- Negative on-line feedback

CAF

Quick & Easy

Consumer Assembly Friendliness





Quickloc - one-piece connector

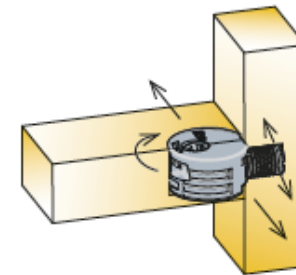
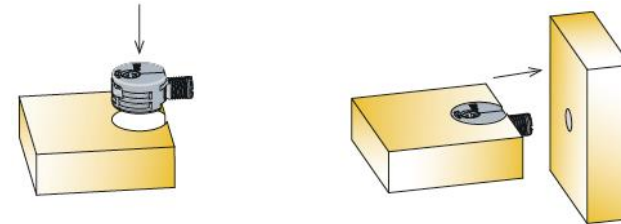
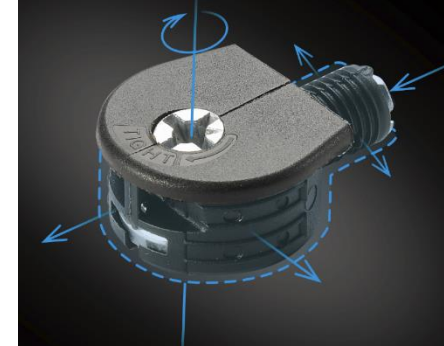
Most CAF friendly product

No edge boring

Housing and dowel expands
for strong joints

Tool-free insertion

Tightens in less than one turn







Consumer Assembly Friendliness

Cam and dowel benefits

- Consumer acceptance...tried and true
- Low cost...less than 1% of total furniture cost
- Easy to machine
- Many options to choose
- Pull-up creates tight joints



Range of Dowels

dowel		characteristics
Combi		Screw-in Combination of zinc and steel ETHC Tolerances +/- 0.5mm
Quickfit		Tool free insertion ETHC Tolerances +/- 0.5mm
Quickfit TL2		Tool free insertion ETHC Tolerances +/- 1mm Suitable for factory pre-insertion
Quickfit TL5		All metal Tool free insertion ETHC Tolerances +/- 1mm Suitable for factory pre-insertion

Screw in dowels

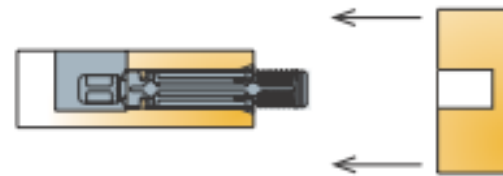
- Highest CAF score
- Least expensive option
- Dowels can be easily over driven
- Put in on an angle



Push in dowel

- Low CAF score
- Can be edge or face inserted
- Easy to use
- More tolerant than screw-in dowels
- Performance matches screw-in dowels

2a. Either push dowel into edge hole or...



2b. Insert the dowel into side panel



New - Full Metal Jacket TL5

- All steel dowel
- Made to work in a variety of materials
- 5 or 8mm drillings
- 5mm pull-out values similar to screw-in dowels
- Easy to reuse







Titus+

Titus Cam

A Wide Selection



Cam	Characteristics	Recommended for
Cam5000	 <p>Superior strength Optimal performance with all Titus dowels</p>	<ul style="list-style-type: none"> - Demanding furniture construction - Standard furniture connections, RTA
Cam3000	 <p>Fully shaped external body Light weight</p>	<ul style="list-style-type: none"> - Low density chipboard - Standard furniture connections, RTA
Shallow profile Cam3000	 <p>Shallow cam profile Ultra light weight Off-centre drive</p>	<ul style="list-style-type: none"> - 12mm board thickness - Cost effective solution for standard thicknesses (16mm, 18mm) - Drawer sides, - Small to medium cabinets
Cam2000	 <p>Heavy duty shape Medium weight Reinforced cam</p>	<ul style="list-style-type: none"> - More demanding furniture construction - Large cabinets

Cam 5000

- Newest cam offering
- Updated aesthetic design
- Works with all current dowels

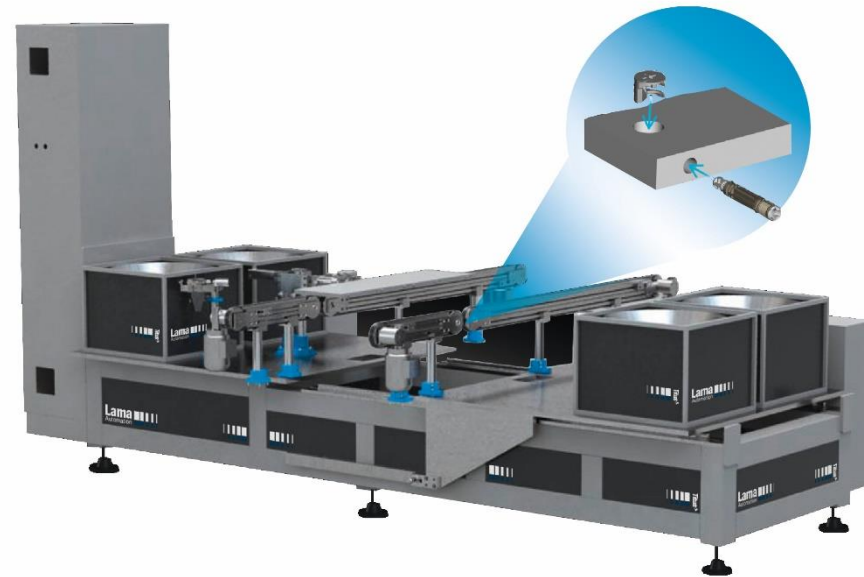


Titus Fastfit

‘Totally integrated engineering’ solution that reduces cabinet assembly time by 50%



- Easier and faster home assembly of the cabinet
- Lower risk of customer claims
- Works with standard furniture boards of various dimensions
- Safety from a proven connectors' solution



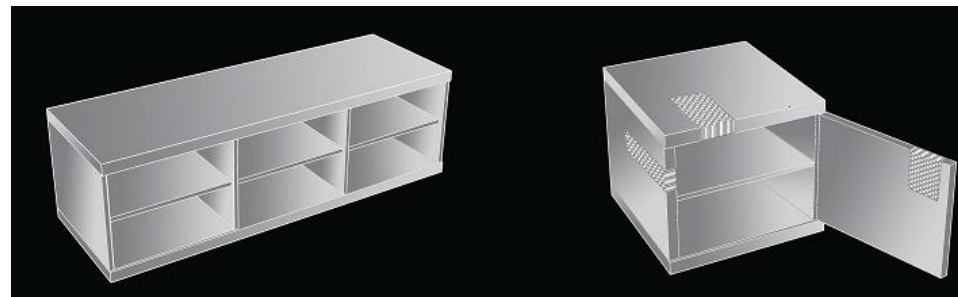
Titusonic



Ultrasonic welding of wood materials without the use of adhesives

Fast –bonding in 3-4 seconds

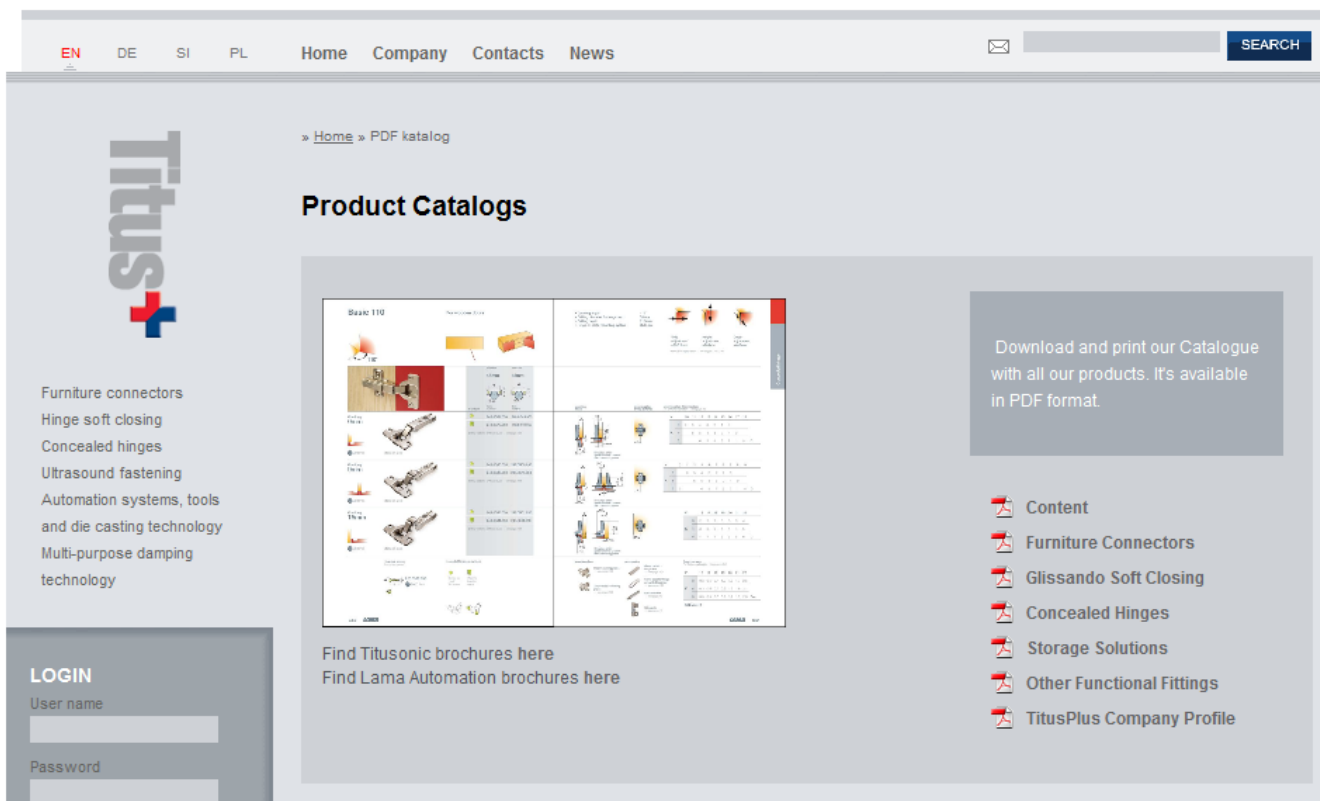
- **Clean** – no glue
- **Strong** – quality assured
- **Can be applied to most wooden based materials**



For more details and to see all connector options, please download our full catalog at

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The screenshot shows the TitusPlus website interface. At the top, there is a navigation bar with language options (EN, DE, SI, PL), a home icon, and a search bar. The main content area features the Titus+ logo on the left and a 'Product Catalogs' section in the center. Below the logo, a list of product categories is provided: Furniture connectors, Hinge soft closing, Concealed hinges, Ultrasound fastening, Automation systems, tools and die casting technology, and Multi-purpose damping technology. The 'Product Catalogs' section displays a grid of product images and technical diagrams. To the right of this grid, there is a call-to-action box that says 'Download and print our Catalogue with all our products. It's available in PDF format.' Below this box, a list of links is provided, each with a document icon: Content, Furniture Connectors, Glissando Soft Closing, Concealed Hinges, Storage Solutions, Other Functional Fittings, and TitusPlus Company Profile. At the bottom left, there is a 'LOGIN' section with fields for 'User name' and 'Password'. Below the login fields, there are two links: 'Find Titusonic brochures here' and 'Find Lama Automation brochures here'.