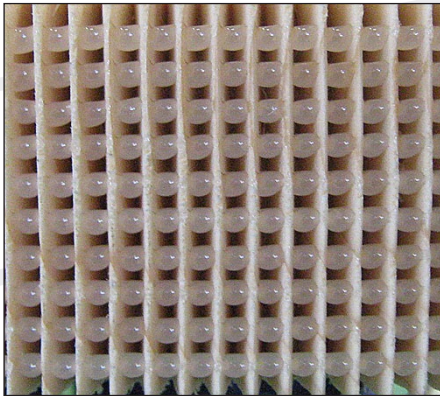
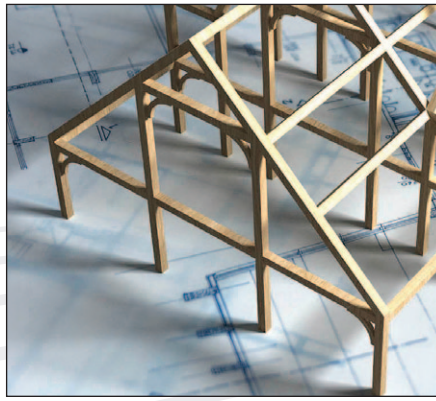




# FINGER JOINT APPLICATION SEPARATE ADHESIVES SOLUTIONS BY CONTACT-LESS SYSTEM



Various products where timber lamellas are connected/glued together on the cross section of the timber material. All in order to decrease the waste of the timber by bad parts or knots, or to create end-less lengths.

## Advantages

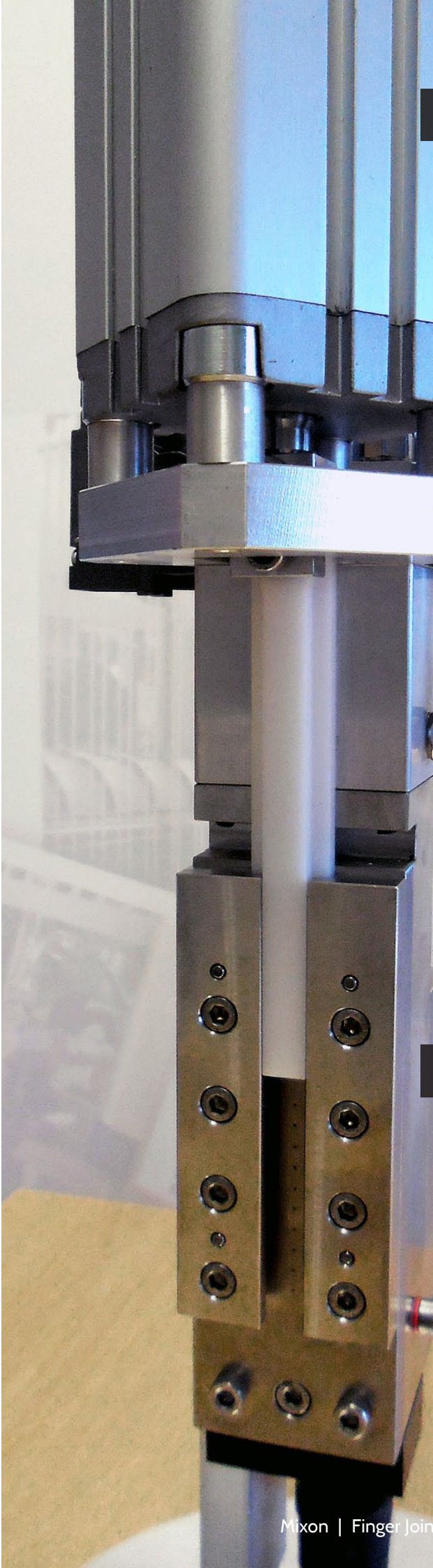
of our finger joint application systems

- No mixed or cured glue in the machine means no more cleaning
- No physical contact like with matrix application, thus less wearing
- Application outside finger-joint machine, gives higher performance and less glue spill in machine
- Possibility to control application by camera
- Applicable for fast lines with speed up to 250 joints per minute
- Adhesive application with a start/stop system, for accurate application of adhesive in the joint
- All parts available from stock for quick spare-part deliveries
- Camera system for advanced control system

## ■ Choice of materials and components

We have designed the equipment for long lasting reliable performance. This means that we use the state of the art materials and components like:

- High-end stainless steel qualities
- Ceramics
- High value rubbers and plastics like Viton, HEPDM, PTFE and PEAK
- Control systems of Mitsubishi/Siemens
- Operator panel with integrated LCD touch screen
- Valves for the hydraulic system of Sun
- Components are standard Mixon stock parts or bespoke components
- Very advanced coatings to preserve the materials from acid attack



## Application areas

for finger joint application

Various products where timber lamellas are connected/glued together on the cross section of the timber material. All in order to decrease the waste of the timber by bad parts or knots, or to create end-less lengths.

The products which are produced according the principle are:

- Window scantling
- Non constructive beams or lamellas
- Constructive beams
- Furniture
- Pre-process for CLT
- Laminated beams
- Other customized solution

## Adhesive systems

for mixed application

Our solutions deal with the following adhesive systems:

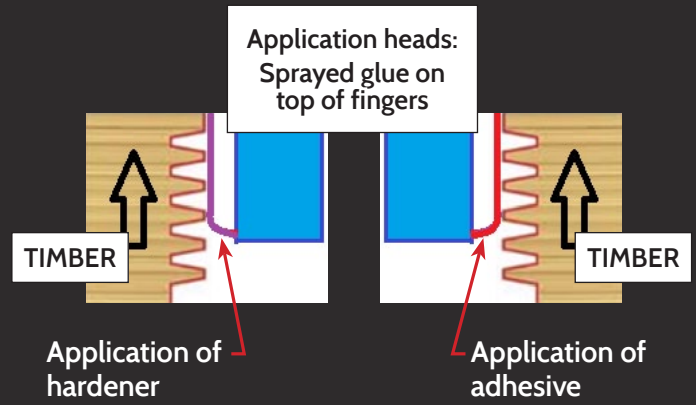
- Two component systems which allow the separate application of glue and hardener, like MUF, PRF and MMF

# The Mixon 2400-CL

finger joint separate & contact-less application solutions

Mixon's system for mixing and dosing for finger joint application is based on 26 years of experience.

In order to apply the adhesives fast, adequate and reproducible we use our reliable components and have completed the machinery with high-end control systems.



### ■ Dosage

The glue and hardener are dosed and pressurized by double working displacement pumps. One end of the jointed timber will be applied with glue and the other end with hardener.

The technical solution works as two separate controlled dosage units as the two separate application systems can work fully independent of each other. The adhesive will

be sprayed on top of the jointed timber material. The adhesive is designed to apply the glue strings on top of the fingers, ready to be over-viewed by a camera to detect the completion of each glue string.

The lack of mixed glue at any place in the machine, gives the huge advantage by the complete lack of cleaning.

### ■ Application

The adhesive application heads are designed to apply the adhesive in a 90 degrees angle on top of the jointed timber. One application head applies the glue, while the other application head apply the hardener. As soon as the timber joint is pressed the two adhesive components meet for bonding.

The application system is designed to cover 100% of the jointed surface. An automatic height adjustment on the application head will change the height set-point, to meet various timber dimensions.

The adhesive application should preferably take place outside the finger joint machine for two reasons. First of all the capacity of the finger joint machine will not be limited by the time frame of the adhesive application. Secondly the risk of adhesive contamination inside the finger joint machine is taken away.

The pressure in the application system is in the order of 40 – 60 bar, which gives the pre-requisites to achieve fast and accurate adhesive application in the joint. A correct start and stop of the glue cycle in the joint is guaranteed.

### ■ Control system

In order to assure that each single joint will have the two adhesive components for correct application, a control system is developed that will overview each single applied joint. The control systems exist of a camera, a lighting system and software to evaluate each single application. For traceability the system can store the data of each single application by photo and applied value.

The operator panel is equipped with an LCD touch screen, with simple “windows-like” menus for easy changes of

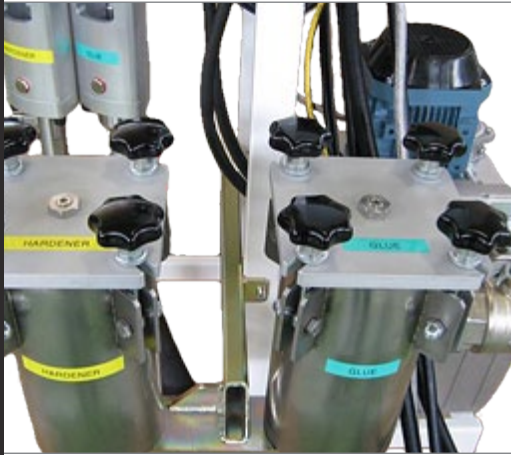
the glue operation. By storing the application set-points in the memory, it's easy to recall the perfect input parameters by changes for let's say timber dimensions. This receipt handling will in all extent help the operator to quickly adjust the machine to new set-points, without losing valuable time to optimize the production.

Dosage test equipment for quick and reliable check of the applied adhesive spread and adhesive mixing ratio.

### ■ Cleaning

Due to the fact that glue and hardener are not mixed in any place of the machine, the cleaning activities are fully taken away. All available production time can be dedicated to the production of joints.

If you have other questions please contact us or find more information on our web site [www.mixon.se](http://www.mixon.se).

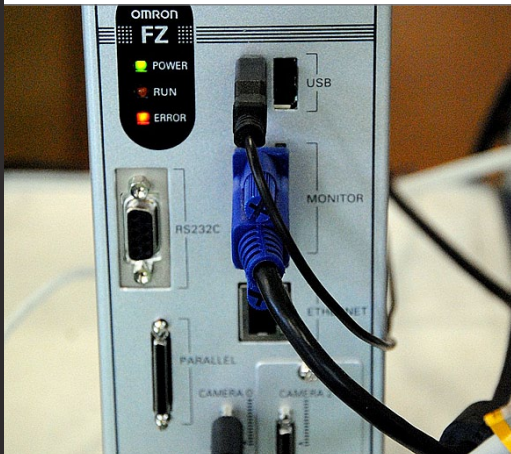


*Can the contact-less system be used in any finger joint line?*

■ As this application requires a cross movement, this system can be applied for the most systems, however we do not recommend this system in a package line or very fast horizontal single joint lines.

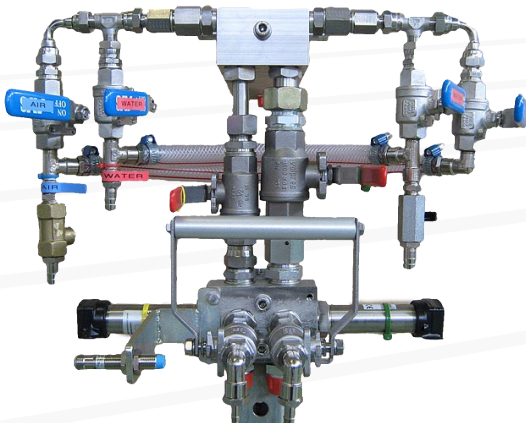
*Is a camera system necessary for this kind of application?*

■ No, depending on the type of product you produce this system is either necessary or “nice to have”. But we recommend this safe-guard system anyway as each single adhesive application will be validated for approval. Without the camera system you have not the assurance that all joints are perfectly applied.



*When I change glue system, do I need to change the whole Mixon solution?*

■ No normally we can offer our services by changing one of the pumps. Our standard components can easily be changed for minimum costs, but maximum flexibility.



*Spare parts, how can Mixon help me?*

■ The absolute majority of the components we use in our machines are on stock at Mixon. After you have placed the spare part order you will normally receive the spares within 24 to 48 hours, of course depending on your coordinates.

*Which kind of adhesive systems are applicable for separate application?*

■ Please contact your adhesive supplier to get a full update of possibilities from an adhesive point of view.

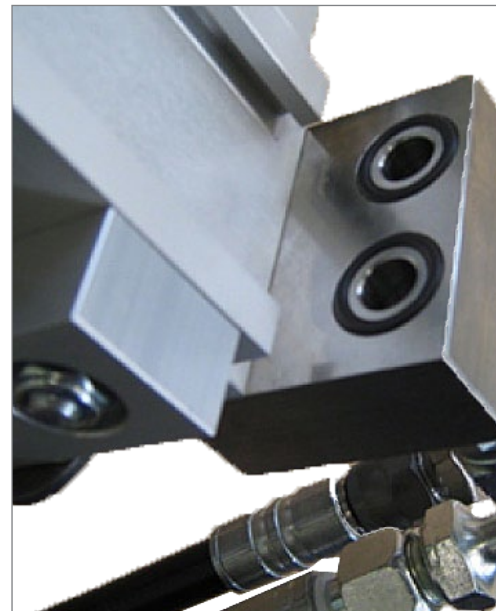
Normally the MUF systems will give full support to apply glue and hardener separately. Note that the characteristics of the adhesive need to meet the requirements for “string” application.



*My production is on the other side of the world, what kind of quick assistance can Mixon offer?*

■ Normally we can assist direct per phone or email. However we recommend the customer to invest in the option “remote control”. This gives us the possibility to look into the program of the PLC by the www. This is a very quick and free service we can offer our customers to address issues.

Further we recommend our customers to agree on an annual preventive service, which normally gives full production availability during one year after the service.



# Specifications

of our solutions

## ■ Hydraulic

Model	Capacity (l/min)
Two sided separate application	
Mixon 2452H/CL	0,5 - 2,4
Mixon 2453H/CL	1,0 - 4,8
Mixon 2454H/CL	1,7 - 8,3
Mixon 2455H/CL	2,7 - 13,2

## ■ Ratio & Measures

Mixing ratio	100:50 up to 100:200
Application width	Between 25 mm and 350 mm
Weight	about 220 kg
Dimensions (l x b x h)	1.000 x 800 x 1.800 mm

## ■ Needed connections

Compressed air	6 bar, 100 l/min
Warm water	40-45 °C, at 6-8 bar
Electricity	400 V/50 Hz/3-phase/ 10 A or 230 V/50 Hz/3-phase/ 16 A

## ■ Pneumatic

Model	Capacity (l/min)
Two sided separate application	
not available	-
not available	-
not available	-
not available	-

## ■ Ratio & Measures

Mixing ratio	Not relevant
Application width	Not relevant
Weight	Not relevant
Dimensions (l x b x h)	Not relevant

## ■ Needed connections

Compressed air	Not relevant
Warm water	Not relevant
Electricity	Not relevant

Mixon | Finger Joint Application - Separate | 2400 - CL Series