mixonVision

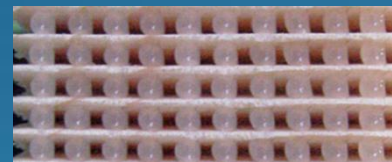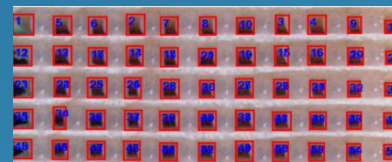## Technical details.

- Complete system, only 220V connection is required.
- Camera, depending on focus/distance/angle the apropriate lens will be chosen.
- Camera takes 120 frames per second.
- Camera protected in a moist/dust approved alumium housing.
- LED lights to lighten the wood-detail at glue application.
- Stand/tripod to place camera/LED light in right position.
- Operator station, a modern panel, complete with screen (24", full color) & mouse.
- Integrated lockable cabinet for PC in the operator station.
- PC that runs the software
- Software/algorithm to control the adhesive application.
- System suitable for following control functions:
  - ➢ Contactless finger joint application;
  - ➢ Edge glue application;
  - ➢ Lamella application;
  - ➢ Continuous string application.

- For production lines with speed up to 360m/min.
- For 1 or 2 component adhesives.
- For transparant or tinted adhesives.

Picture reality

Picture transferred

Picture measured by algorithm

Are you interested and want to improve your production?

The gain is obvious.
At unchanged available production time, you will increase the amount of approved products.
More products for sale and less waste.
This equation will give you a better outturn at the bottom line!

The investment is low.
The system is tested and ready.
The solution involves all required parts, from hardware to special developed software.
The system will be supplied at a 100% functionality warranty.
The control system is developed for all type of glue application moments.

We will happily assist you with your questions and without any obligations provide you a suitable offer. Please feel free to ask!

Contact Mixon

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Find your local representative on our homepage:
www.mixon.se
contacts/ our sales representatives

A brand new innovative active camera system.

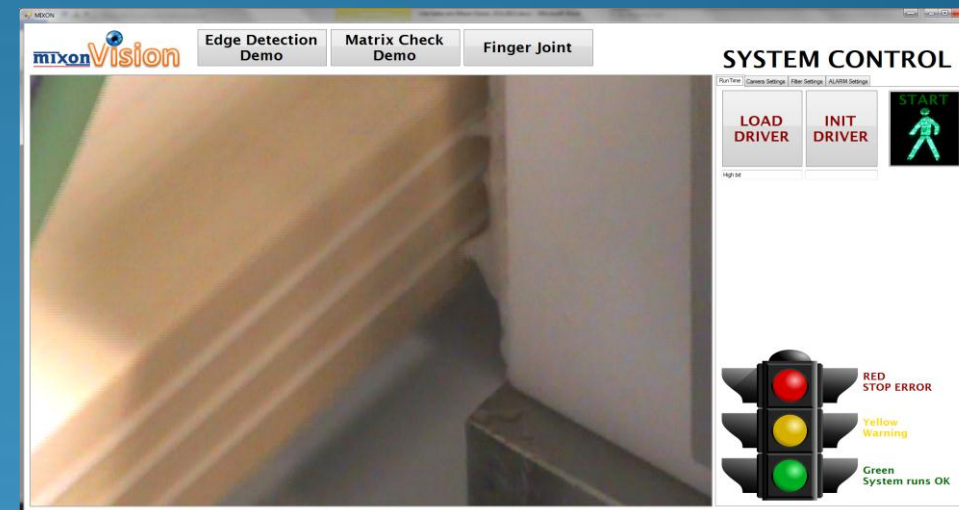Do you want to improve your productivity, by less production of non-approved products?

Production should and may cost, as you want to supply a quality product, in line with the honor of the brand you represent.
On the other hand you want to skip those costs for products, which have not passed your quality standards.

When it comes to adhesive application everybody knows that in a perfect world, all production processes will perform without any failures. Imagine there are no more "Monday morning" batches. In stead of finding out too late that the adhesive application is out of range and by that: you are forced to discard a few minutes or more of produced goods. This is called waste, expensive and irritating! Now we can help your operators to be better.

Now we can offer you a solution!
We have developed a camera system in combination with software, where you at al times can safeguard the correct amount and correct application of the adhesive.
The system checks the applied adhesive on-line in on-going production. The system compares all the times the applied adhesive, against a perfect/required situation. Deviations will be reported directly by the system and adjustments can/must be made immediately, without loosing valuable production capital.

Operator screen shows result, easy and clear

The investment is affordable!

Usually the camera systems available on the market are percepted as expensive.

Due to present availability of state of the art hardware equipment at acceptable prices and one-off development costs, we will sell this solution at a fair and affordable price level.

The system is developed and standardized to meet all kind of adhesive applications, regardless if the adhesive system is supplied by Mixon or by any other supplier. Mixon Vision is applicable in any production line where you want to be in ultimate controll of the adhesive application, at any moment.
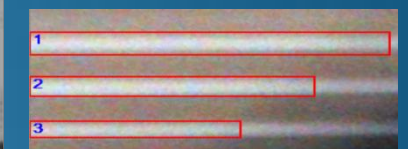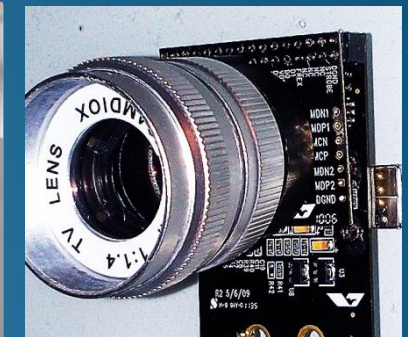
The solution will be supplied at a 100% functional guarantee.

A complete system includes:
- ✓ Operator panel
- ✓ PC that runs the control system and software
- ✓ Software
- ✓ Camera(s) in protected housing
- ✓ Lighting

Are you willing to invest 1% of your turn-over in such a system?
We are convinced that this investment will decrease your waste. The return on investment is based on how much you manage to decrease the drop-out of un-passed products, but… the pay-back will be within one year!

The operators control unit

EASY INTERFACE
FOR OPERATOR,

ADVANCED
ALGORITHMS IN
THE
BACKGROUND!

How does it work?

The complete system will be installed by a qualified Mixon technician. The system is 100% complete and based on your adhesive application details: one, two or more cameras including lighting will be installed.

When all is in place we will calibrate the control system in relation to the adhesive application on your production line. This means that we will learn the system how the adhesive application should look like/ the optimum result. The **applied** adhesive volume/glue spread, as well as **where** the adhesive is applied, and will be checked and monitored.

As soon as the control system is started, the solution will at all times check where and how much adhesive is applied. The performance of the adhesive application will be compared with the optimum values.
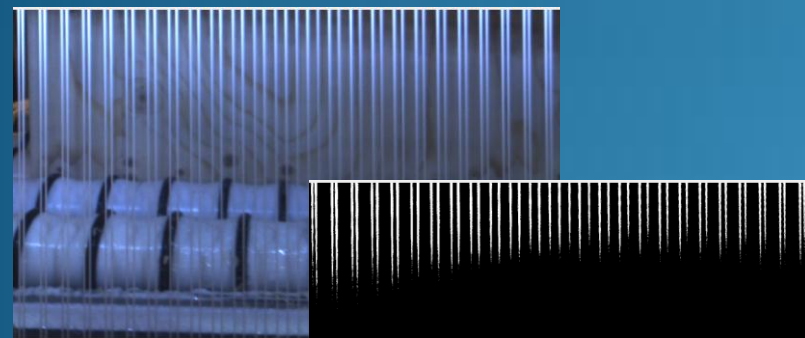
Measured values and deviations will be reported instantly and by a traffic light system. The operator knows the status of the applied adhesive:
- ✓ Green light: the application is approved;
- ✓ Orange light: the application is approved, but the application values moves away from set-point, however still within accepted deviation values;
- ✓ Red light: the adhesive application is out-side the accepted range.

Set-points can easily be changed. The system is developed for easy installation start-up and handling of the control system.
An easy understanding of the menues on the screen will guide the operator to start/change/adjust. While the control system is running the results are monitored constantly and the application result is shown live on the screen. The system is controlling the applied adhesive, however it's up to the operator to use the system to change the set-points of the application machine.

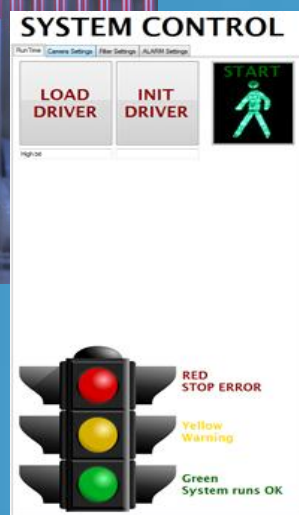For this reason the controll system can be built-in any line, even those not supplied by Mixon

```
Glue thickness=9
Glue Loation= (X=1364,Y=0)
Glue thickness=8
Glue Loation= (X=1421,Y=0)
Glue thickness=9
Glue Loation= (X=1479,Y=0)
Glue thickness=9
Glue Loation= (X=1537,Y=0)
Glue thickness=9
Glue Loation= (X=1595,Y=0)
Glue thickness=9
Glue Loation= (X=1652,Y=0)
Glue thickness=10
Glue Loation= (X=1710,Y=0)
```

SHOOT PICTURES

TRANSFORM

MEASURE & COMPARE

REPORT BACK

SYSTEM CONTROL
Run Time | Camera Settings | Filter Settings | ALARM Settings

LOAD DRIVER | INIT DRIVER | START

High bit

RED
STOP ERROR

Yellow
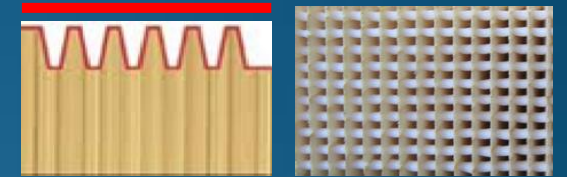Warning

Green
System runs OK

The system is developed to meet the following adhesive application systems

FINGER JOINT APPLICATION
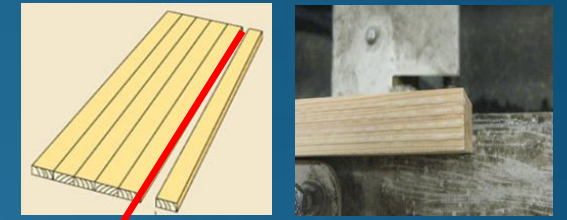For contact-less application where the glue lines are applied on top of the jointed material
The system can detect a one or two component adhesive and can solve a one- or two sided application

EDGE GLUE APPLICATION
For adhesive application for solid wood, the glue lines can be detected on the edge (vertical area).
The system can detect any adhesive system and the control system can without limitations monitor the applied adhesive at a line speed of 360m/min.

LAMELLA APPLICATION
For lamella aplication (for example window scantling), the glue lines can be detected on the horizontal part of the wood.
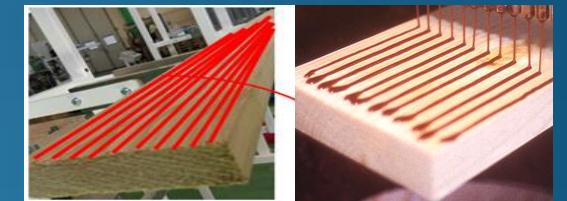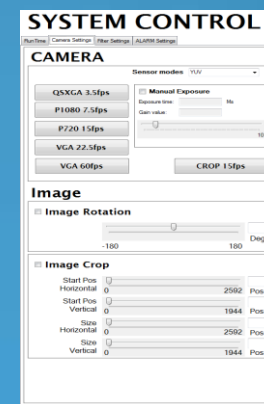The system can detect any adhesive system and the control system can without limitations monitor the applied adhesive at a line speed of 360m/min.
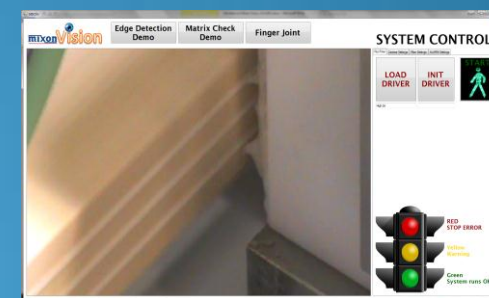
GLUE LAM APPLICATION
For glue lam application (usually contruction wood) , for an adhesive system based on separate application of glue and hardener, by two ribbon spreaders.
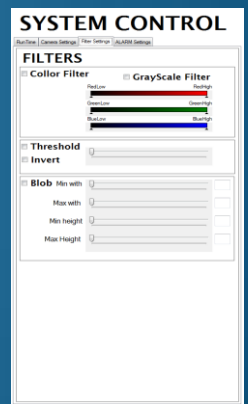The system wil detect the glue lines directly under the ribbon spreader and report back.

SYSTEM CONTROL
CAMERA

Sensor modes   YUV
- QSXGA 3.5fps   ☐ Manual Exposure
- P1080 7.5fps   Exposure time
                      Gain value
- P720 15fps
- VGA 22.5fps
- VGA 60fps   CROP 15fps

Image
☐ **Image Rotation**
         -180   180   Deg

☐ **Image Crop**
Start Pos Horizontal   2592 Pos
Start Pos Vertical   1944 Pos
Size Horizontal   2592 Pos
Size Vertical   1944 Pos

Camera settings

System running in control mode

SYSTEM CONTROL
Run Time | Camera Settings | Filter Settings | ALARM Settings
CRITERIA
ALARM Level Low
Warning Level Low
Warning Level High
Max Level

Log
Date/ Time last alarm
Number of alarms
Number of warnings

Alarm levels

SYSTEM CONTROL
Run Time | Camera Settings | Filter Settings | ALARM Settings
FILTERS
Collor Filter   ☐ GrayScale Filter

☐ Threshold
☐ Invert

☐ Blob Min with
         Max with
         Min height
         Max Height

Filter adjustments

mixonVision