ELECTRONIC WOOD SYSTEMS SCANNING FOR QUALITY

Blow Detection System

BLOW-SCAN

Blow detection systems

automatically detect blows, bursts and unglued areas during the production of wooden composite panels. They send inaudible ultrasound through the panels and can be deployed in harsh production environments, such as dust, steam and high temperatures.

The systems are automatically calibrated in the panel gaps. Dirt deposits and temperature drifts are automatically compensated.

The production requirements are different for each panel type

Blows, bursts and unglued areas, i.e. air inclusions are always undesired. These quality deficiencies can be detected and automatically reported by means of ultrasound. While it is possible to limit the production of plywood to the measurement only to “blows yes/no”, the production of chipboards, fibreboards and OSB panels can be achieved considerably more. It is already possible to recognise the change in properties of the panels in order to enable an early detection of blows and to receive references in terms of the panel quality. An important performance feature of blow detection (early warning) is that the production capacity can be specifically optimised. Overdimensionings can be avoided.

Blow detection systems are preferably used in the production of chipboards, MDF, OSB and plywood panels. In addition to the blow detection, any changes in the properties of the panels are displayed in a multi-colour ultrasound image. Before any blows occur, the operator will be provided with the information to adjust the process parameters in such a way that any blows are avoided.

“AirKnife”

By using the air sword “AirKnife”, the blow detection function will be significantly improved once again.

The air sword provides a constant airflow across the entire width of the panel. This creates homogenous, aerodynamic conditions in the measurement range, which ensures that the ultrasound is always coupled into the panel with the same intensity.

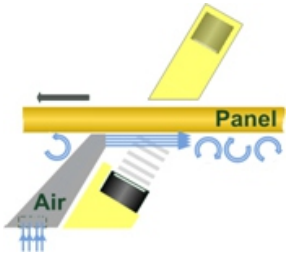
Air turbulences caused by the transport underneath the panels can no longer disturb the measurement signal.

Special features

- **Automatic “online calibration”**
  No moving frame construction required
- **Automatic adjustment of all sensors to the same level of sensitivity**
  No calibration plates required
- **Automatic compensation**
  of the dust load on the sensors
- **Automatic compensation of the temperature drift**
- **Real-time system**
  leads to a high level of system stability (GAUGE-CONTROLLER)
- **High production speed allows**
  up to 5.5 m/s (330 m/min.)
- **Interface for service purposes**
  enables the configuration directly at the measuring system

Options

- **“AirKnife”**
  to improve the blow detection system (early warning)



- Connection to process control system and PLC
- Colour marking

Technical data

Technology:	Ultrasound
Number of measurement channels:	1 to 22 (more upon request)
Channel spacing:	min. 110 mm
Noticeable imperfection:	min. Ø 28 mm
Maximum board thickness: (depending on the board density)	up to 60 mm
Minimum board density: (depending on the board thickness)	550 kg/m³
Number of colours:	2 or 500
Automatic calibration:	YES
Automatic compensation of temperature drifts:	YES
Automatic compensation of sensor contamination:	YES

Remote maintenance
“EWS Online Support”

Visualisation

- Position and size of imperfection
- Multi-colour ultrasound image
- Trend/history function