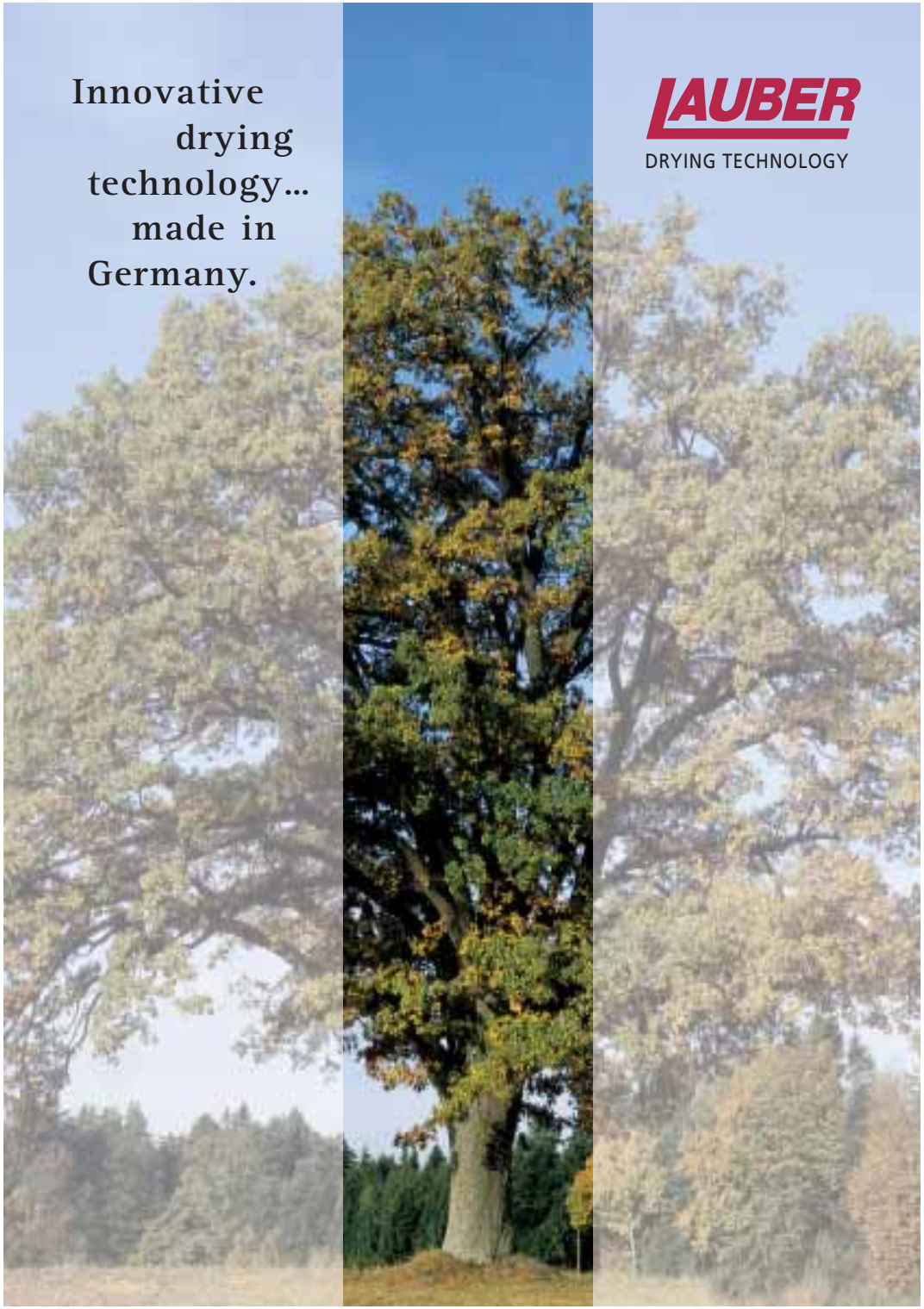

Innovative
drying
technology...
made in
Germany.
LAUBER
DRYING TECHNOLOGY

MÜHLBÖCK VANICEK

LAUBER

DRYING TECHNOLOGY

"Our main concern is to help you working professionally, economically and therefore more successfully. Whether you intend to dry a small or large wood quantity, whether you dry wood, steam wood or only warm-treat, if you ask for a complete solution or only for individual components – we support you and will win you as a satisfied LAUBER customer".

LAUBER Drying Technology

LAUBER with its long living wood dryers is successful positioned at the market … since many, many years (exhibition booth 1970).

Tradition, performance and innovation is represented by LAUBER, Germany:

All over the world, LAUBER is well-known as the manufacturer of high-quality wood dryers in the proven fresh-air / exhaust-air drying technology. Our customers and partners honor us as well-experienced producer and professional partner in all aspects of drying technology. The long-living expectancy of the Lauber wood dryers combined with our convenient control system MP 902 has made us a leading supplier of optimised and very efficient drying technology. More than 3000 LAUBER wood dryers are successfully working all over the world. The main customers are small to medium sized woodworking enterprises. Lauber wood dryers are also used in many institutes, schools and training workshops as training objects and reference assets.

By beneficial co-operation of the two companies LAUBER and MÜHLBÖCK VANICEK in sales, development and service since many years, both companies are in the position to offer a broad spectrum of different drying systems and sizes to the market. The most important aim of this big alliance is to give solutions which meet exactly the individual demands and special drying capacities of the common customers. Large drying kilns and vacuum dryers, primarily suitable for sawmills and woodworking industry, are manufactured by MÜHLBÖCK VANICEK. Whereas LAUBER with its medium and small sized wood dryers has been known as the experienced partner of the wood-working on crafts enterprises.

For the future we will always aim for an optimisation and a constant advancement of assigned techniques and procedures of wood drying by comprehensive research and development. Qualified and flexible co-workers guarantee an optimal service and support in fulfilling a good partnership with our customers!

Our complete range of products includes components for the self-assembly of drying kilns, control systems for drying demands, measuring instruments for the moisture in wood and building materials and air dehumidifiers. Also we produce drying kilns for warm-treatment or technical ageing of different materials like plastic materials, sealing compounds, food stuff or something else.

"Transportable" Lauber wood dryer in the past (1968).

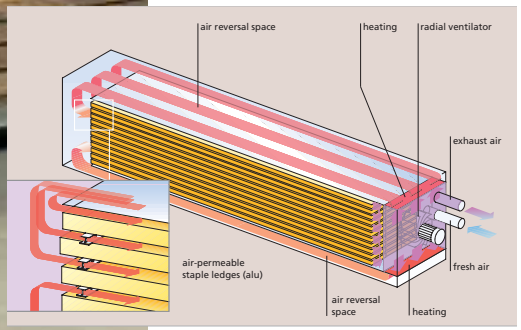
Longitudinal ventilated wood dryer with front side fan.

Whether longitudinal or transversal ventilated drying kilns – everybody who dries wood needs LAUBER.

Longitudinal ventilation: Timber drying along the wood fibre.

In LAUBER longitudinal ventilated dryers a radial ventilator is arranged at the front side. This fan sucks the air through the wood pile. From all sides on its entire length, each board is ventilated by the air flow.

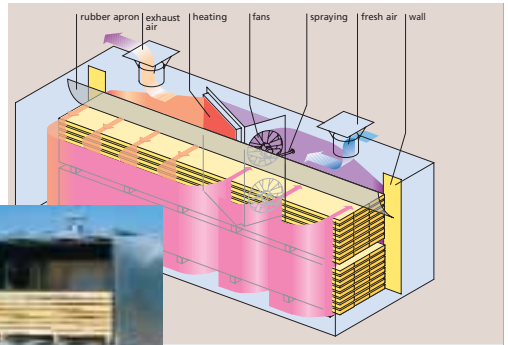
The natural water flow in the wood runs parallel to the wood fibre. Because of the natural water flow in the wood, this kind of ventilation offers a very efficient drying process. High air speed is possible during the longitudinal ventilation and guarantees an optimal drying process on the entire pile length. Another advantage is the large pile length with small quantities of wood. Even if the longitudinal current dryer is not completely filled, an optimal ventilation is guaranteed: The pile area is adapted automatically by inserting cover plates over the quantity of wood which shall be dried. In order to make the longitudinal air circulation effective, special air-permeable staple ledges (aluminium) are used.



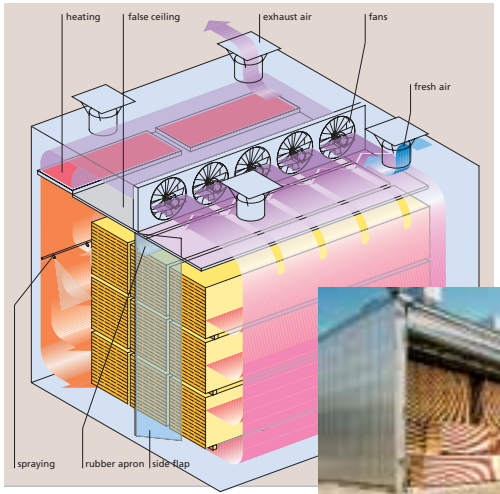
Transversal (cross wise) ventilation: the right choice for larger wood quantities.

Wood dryers with several wood packages in height and width are ventilated transversal (cross wise) to the wood pile. According to the size of the chamber, several fans are installed and therefore chambers can be build in nearly every size.

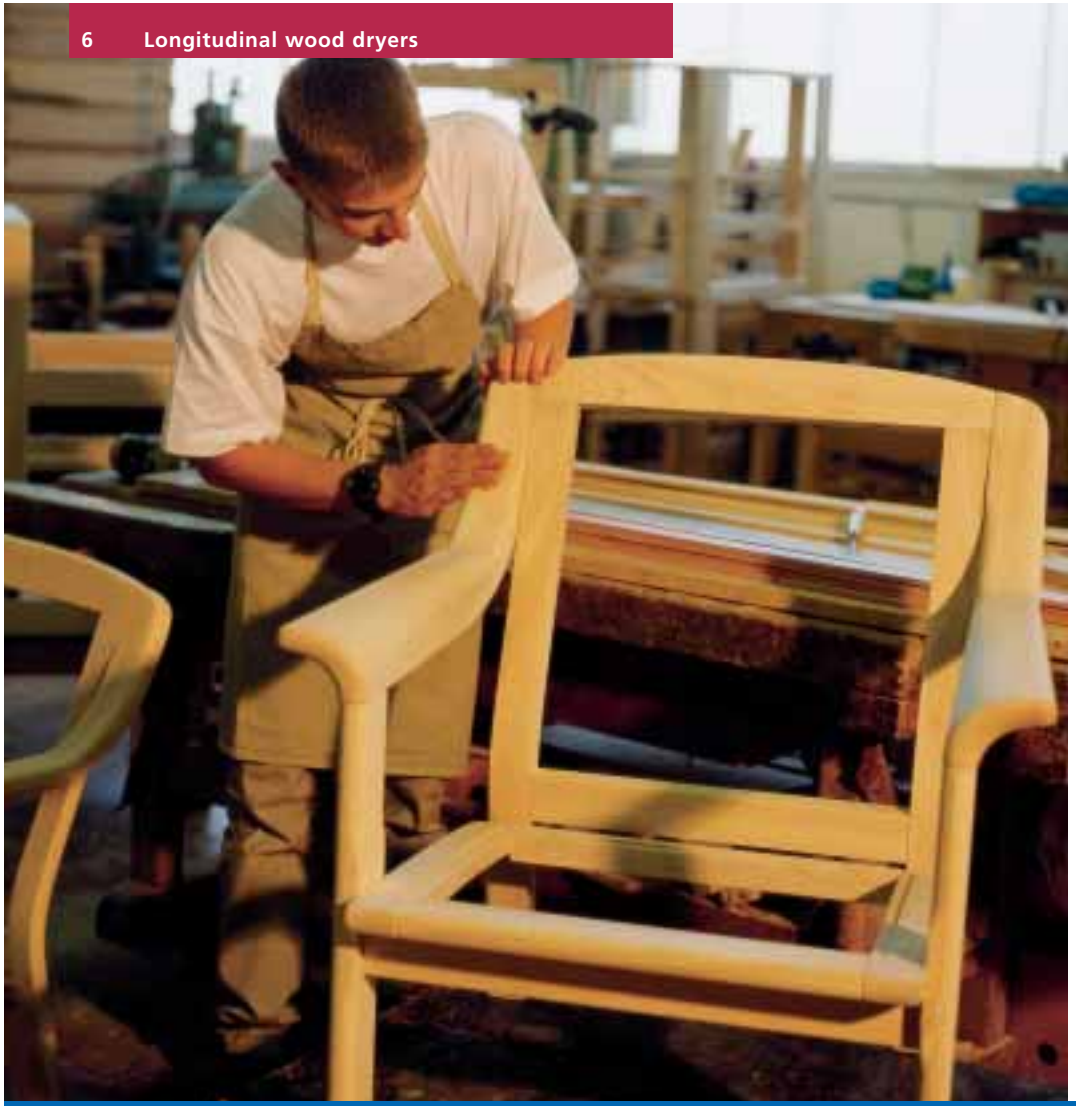
In transversal ventilated drying chambers normal stable ledges of wood can be used and pre-stacked pile packages can be directly loaded into the drying chamber.



Transversal ventilated wood dryer with an integrated LAUBER ventilation-tower which has accurately defined air circulation created by special arrangement of fans and warm water heating elements.



Large transversal ventilated dryer with ventilators and warm water heating register in a false ceiling.



Longitudinal wood dryers: We will help you to be creative in your profession – with our experience and technology!

LAUBER timber dryers can be used for many purposes and installed without using too much space in workshops for interior decoration such as joiners, manufacturers of staircases, glaziers as well as wood pattern-shops, turners and producers of music-instruments.
LAUBER timber dryers are ready for service immediately after delivery and installation. No assembly by the customer is needed. Timber of all wood species can be dried fast, economically and in high quality.

External Lining
This is made of 1.5 mm thick sheet aluminium or in stucco trapezoidal sheet metal. The double shell insulation provides best insulation.

Internal Lining
All side walls are made of special sea-water resistant aluminium. The bottom is constructed as a tightly welded stainless steel vat and is permanently resistant to aggressive timber ingredients, such as tannic acid, etc.

Computer control MP 902
The computer control MP 902 is standard in all LAUBER wood driers. This guarantees a comfortable operation and a fully automatic regulation of the drying process.

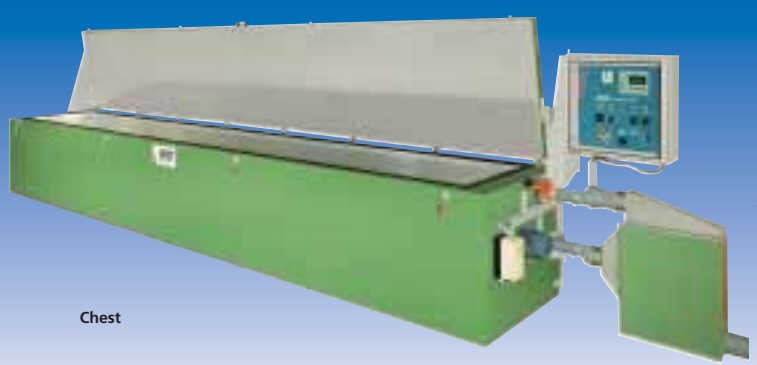
Heating
LAUBER longitudinal timber dryers are equipped with an electric heating. Optionally, a hot water heating register for connecting the dryer to an existing warm water or steam boiler, can be installed.
Water heating register are made of stainless steel with aluminium plates pressed on, with automatic switching between water and electric heating, resp. turning off the system when the flow temperature is not reached.

Chamber
Easy front side loading of the chamber with a trolley. The LAUBER chambers in the longitudinal ventilated system are in lengths from 3.4 to 12.4 m and a pile area from 2 to 29 m^3. The driving out rails are removable.

Chest
LAUBER chests are especially suitable for smaller enterprises. Chests are charged from the top. The advantage is the large pile length with small wood quantities. Two cross sections are available in lengths from 2.3 m to 6.3 m and a pile area from 0.8 m^3 to 2.5 m^3. A servo top cover guarantees the highest safety.

Cupboard
Simple loading of the long side by means of a side car. LAUBER cupboards are available in four cross sections with lengths from 3.3 to 6.3 m and pile area of 1.5 m^3 up to 11.0 m^3. Standard equipment is a special lifting swivel door which shuts the dryer easily and airtight. The driving-out-safety device for the side car provides for a comfortable and safe loading.

Chamber



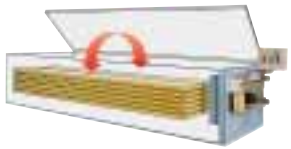
Chest

Cupboard

Technical data:
LAUBER longitudinal wood dryer.

LAUBER chest

Type	Internal dimension length x width x height cm	Pile area (gross volume) m³	External dimension length x width x height cm	Heating kW	Motor kW
1 T–3	230 x 60 x 55	0,8	330 x 95 x 95	3,0	0,37
1 T–4	330 x 60 x 55	1,1	430 x 95 x 95	3,0	0,37
1 T–5	430 x 60 x 55	1,5	530 x 95 x 95	3,0	0,37
1 T–6	530 x 60 x 55	1,8	630 x 95 x 95	4,2	0,37
1 T–7	630 x 60 x 55	2,1	730 x 95 x 95	4,2	0,37
2 T–3	230 x 75 x 55	0,9	330 x 110 x 95	3,0	0,55
2 T–4	330 x 75 x 55	1,3	430 x 110 x 95	3,0	0,55
2 T–5	430 x 75 x 55	1,7	530 x 110 x 95	4,2	0,55
2 T–6	530 x 75 x 55	2,1	630 x 110 x 95	4,2	0,55
2 T–7	630 x 75 x 55	2,5	730 x 110 x 95	4,2	0,55



2 T–AG	75 x 55			4,2	0,55

Self assembly aggregate
for chests (AG)

LAUBER cupboard

2 S–4	330 x 90 x 85	2,5	450 x 135 x 155	6,0	0,75
2 S–5	430 x 90 x 85	3,3	550 x 135 x 155	6,0	0,75
2 S–6	530 x 90 x 85	4,1	650 x 135 x 155	7,5	0,75
2 S–7	630 x 90 x 85	4,9	750 x 135 x 155	7,5	0,75
3 S–5	430 x 115 x 105	5,2	560 x 160 x 180	12,0	1,1
3 S–6	530 x 115 x 105	6,4	660 x 160 x 180	12,0	1,1
3 S–7	630 x 115 x 105	7,6	760 x 160 x 180	15,0	1,1

2 S–AG	90 x 85			7,5	0,75
3 S–AG	115 x 105			12,0	1,1

Self assembly aggregate
for cupboards (AG)

For all LAUBER timber dryers, special sizes and lengths are possible on demand.
Subject to technical changes.

LAUBER chamber

Type	Internal dimension length x width x height cm	Pile area (gross volume) m³	External dimension length x width x height cm	Heating kW	Motor kW
2 K–4	340 x 90 x 85	2,6	450 x 110 x 150	6,0	0,75
2 K–5	440 x 90 x 85	3,3	550 x 110 x 150	6,0	0,75
2 K–6	540 x 90 x 85	4,1	650 x 110 x 150	7,5	0,75
2 K–7	640 x 90 x 85	4,9	750 x 110 x 150	12,0	0,75
3 K–5	440 x 115 x 125	6,2	550 x 135 x 190	12,0	1,1
3 K–6	540 x 115 x 125	7,8	650 x 135 x 190	15,0	1,1
3 K–7	640 x 115 x 125	9,1	750 x 135 x 190	18,0	1,1
4 K–5	440 x 140 x 125	7,7	550 x 160 x 190	15,0	1,5
4 K–6	540 x 140 x 125	9,4	650 x 160 x 190	18,0	1,5
4 K–7	640 x 140 x 125	11,2	750 x 160 x 190	24,0	1,5

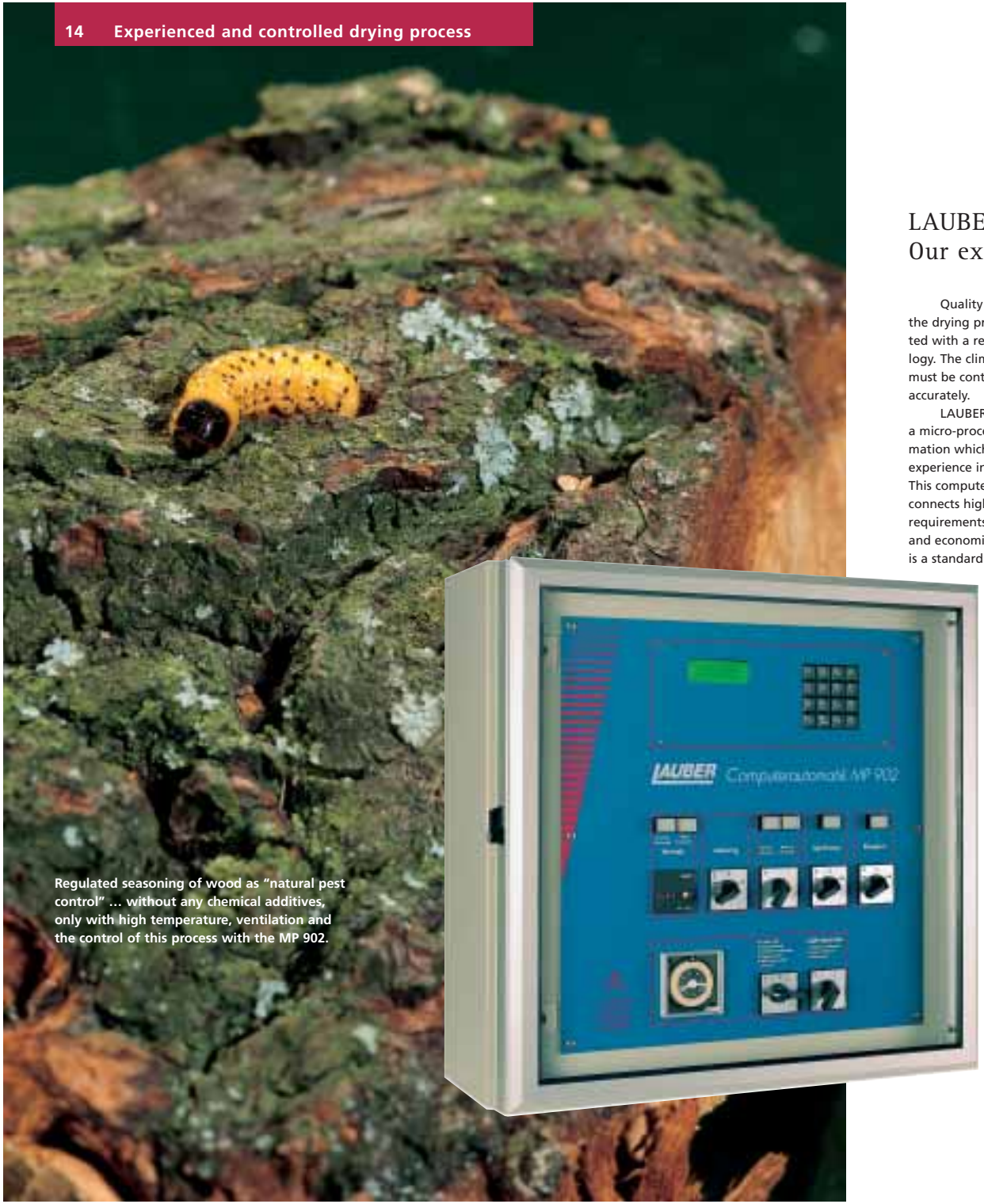
2 K–AG	90 x 85	7,5	0,75
3 K–AG	115 x 125	15,0	1,1
4 K–AG	140 x 125	18,0	1,5

Self assembly aggregate
for chamber (AG)

Self assembly aggregate (AG)

The completely installed front side with the technology and the automatic control MP 902 is supplied by LAUBER (self assembly aggregate).

The chamber, cupboard or chest itself is manufactured by the customer.

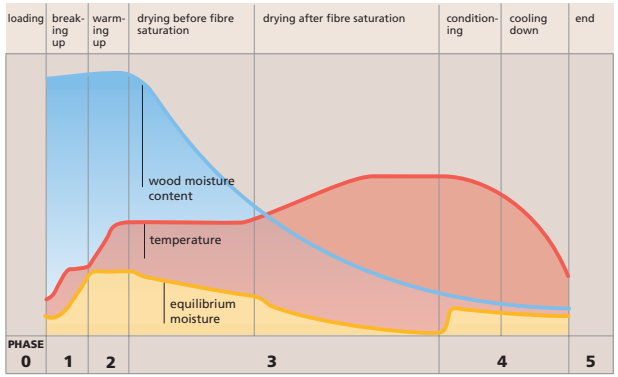


Regulated seasoning of wood as "natural pest control" ... without any chemical additives, only with high temperature, ventilation and the control of this process with the MP 902.

LAUBER computer automatic MP 902: Our experience regulates the drying process.

Quality and security aspects in the drying process are closely connected with a reliable monitoring technology. The climate in the timber dryer must be controlled and regulated accurately.

LAUBER has developed therefore a micro-processed computer automation which is based on decades of experience in wood drying.
This computer automatic MP 902 connects highest quality and safety requirements with short drying times and economical aspects. The MP 902 is a standard equipment in all LAUBER wood dryers and runs the drying process automatically.



The timber itself decides the conduct of drying.

The drying process needs a controlled climate which depends on the wood type and the moisture content. One requirement for an optimal drying process is the continuous measurement of the wood moisture *(u)* and the wood equilibrium moisture *(ugl)*. The equilibrium moisture depends on the relative humidity and the drying temperature.

The computer automation MP 902 guarantees the observance of the drying gradient and drying temperature matched for the corresponding type and thickness of timber. It always controls exactly the climate in the drying chamber and follows the optimal drying conditions for the given moisture content in every case.

The MP 902 automatically opens and closes the air valves and thus controls precisely the necessary regeneration of air. If the timber equilibrium moisture in the drying chamber is too low, the MP 902 itself activates the spraying in order to moisten the air of the drier. At the same time the MP 902 checks whether the air has been warmed up sufficiently to vaporize the water sprayed in.

Drying gradient (dg):

This is the term used to denote the relationship between the current moisture content *(u)* and the equilibrium moisture content *(ugl)*. The drying gradient indicates the intensity and speed of the drying process.

Relationship between wood moisture content (u) and equilibrium moisture content (ugl):

ugl = u → the wood moisture is not changing, there is no drying of the wood
ugl > u → the wood pours by moisture absorption
ugl < u → the wood shrinks by humidity delivery
drying gradient = *u: ugl* = 2: 1 corresponds to a mild / slow drying process (oak etc..)
drying gradient = *u: ugl* = 4: 1 corresponds to a sharp / fast drying process (soft woods)

Perfect drying with LAUBER computer automatic MP 902.

The new LAUBER preset system which allows all possible varieties of drying is the heart of this computer automatic MP 902 which is equipped with highest standard of technique and maximum comfort:

With 3 inputs the process of drying is completely programmed!

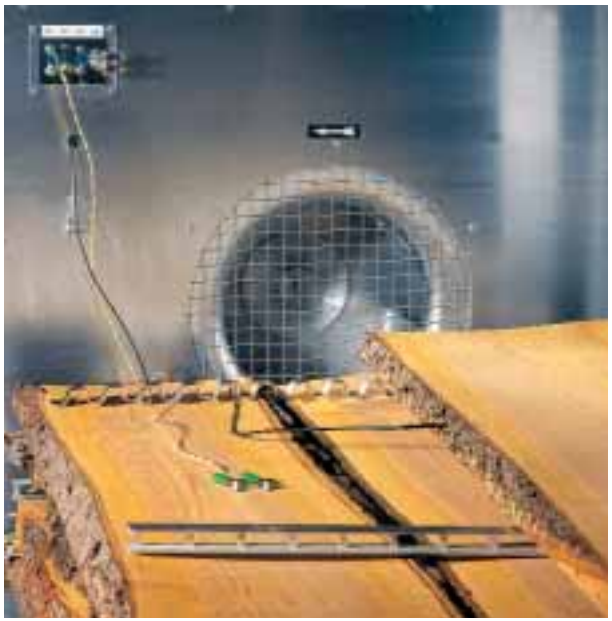
❶	the wood code	3545
❷	the thickness of the timber	52 mm
❸	the final moisture content	9 %

MP 902

The advantages of the computer automation MP 902.

- Fully automatic measurement and regulation of the wood moisture, equilibrium moisture and the temperature.
- Constant and clear announcement of all measuring parameters and the current conditions of the drying process.
- Approximately 1000 given drying programs for all types of wood to ensure the optimum drying guidance in every case. Nevertheless drying parameters themselves can be changed manually by the customer.
- The built-in safety "switch-off" continuously supervises the timber equilibrium moisture. It automatically switches off the dryer in case of lacking *ugl*, for example in cases of no water inflow (clogged up nozzle).
- The drying conduct may either is checked from one timber humidity measuring point or from the average of several measuring points.
- A timer (day time clock) for starting an interval drying processes, especially for hard wood.
- Fully automatic heat treatment for pest control and observance of packing regulations (for example export wood to China).
- Wood temperature sensor for the additional optimisation of the drying process and/or for the proof and logging of the temperature of the wood.
- Option of starting steaming processes, for example to change the colour of the wood.
- Matrix printer for logging.
- Maximum comfort with the connection to a conventional computer (PC).

The measuring of the timber humidity (u) is made with drive-in electrodes of stainless steel which are driven in the timber up to 1/3 of its thickness in a distance of 3 – 4 cm across the the grain of the wood. In addition, the wood temperature sensor can optimise the drying course.



The timber equilibrium moisture (ugl) is measured by a climate sensor made of Limba wood which quickly reacts on a change of climate and should be exchanged after every drying process.

Semi-automatic control A:

The measurement of the wood moisture and the equilibrium moisture is made by a measuring point changer outside of the wood dryer in connection with an electronic wood moisture measuring instrument.

The regulation of the drying process is made by manual operation of sprayers and flaps and/or by a thermostat for the temperature control.

With a semi-automatic control A, the drying process can be achieved in short times with good quality by adherence to the drying chart.

Self assembly aggregate with semi-automatic control A.

LAUBER

DRYING TECHNOLOGY

- The producer of compact drying kilns which are immediately ready for operation
- individual solutions according customer`s demand in every special sizes
- chambers for heat treatment
- Partner of

MÜHLBÖCK VANICEK TROCKNUNGSTECHNIK

We invite you to visit our production plant in beautiful south Germany

LAUBER GmbH
Obere Schloßstraße 110
D-73553 Alfdorf
Tel +49 (0) 71 72 - 93 83 0 - 0
Fax +49 (0) 71 72 - 93 83 0 - 9
info@lauber-holztrockner.de
www.lauber-holztrockner.de

Make the right choice in wood drying, take LAUBER!

Visuelle Konzeption Munz 503