

Profile wrapping machines



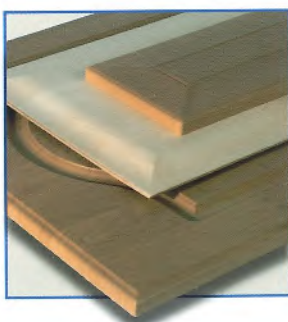
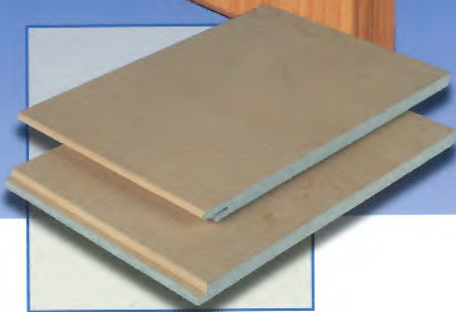
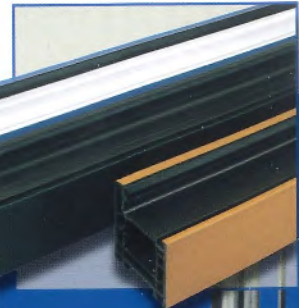
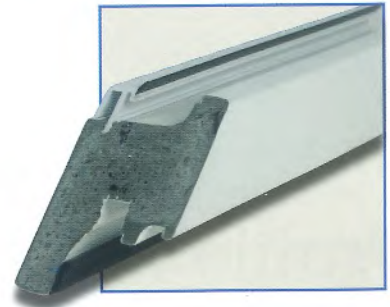
Optimat | profi line | power line



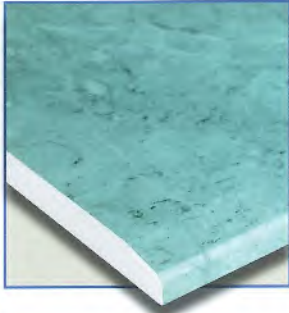
Profile wrapping

Our target groups

Interior decoration



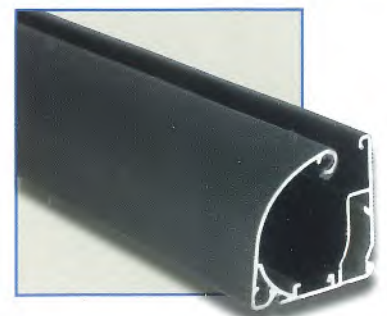
**Windows &
plastics industry**



Automotive industry



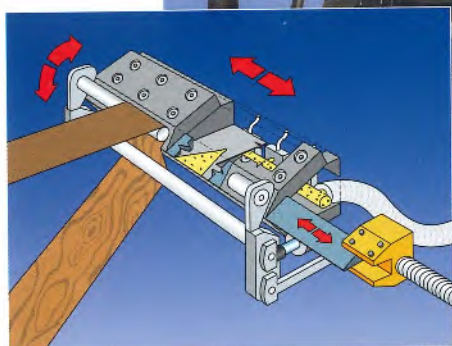
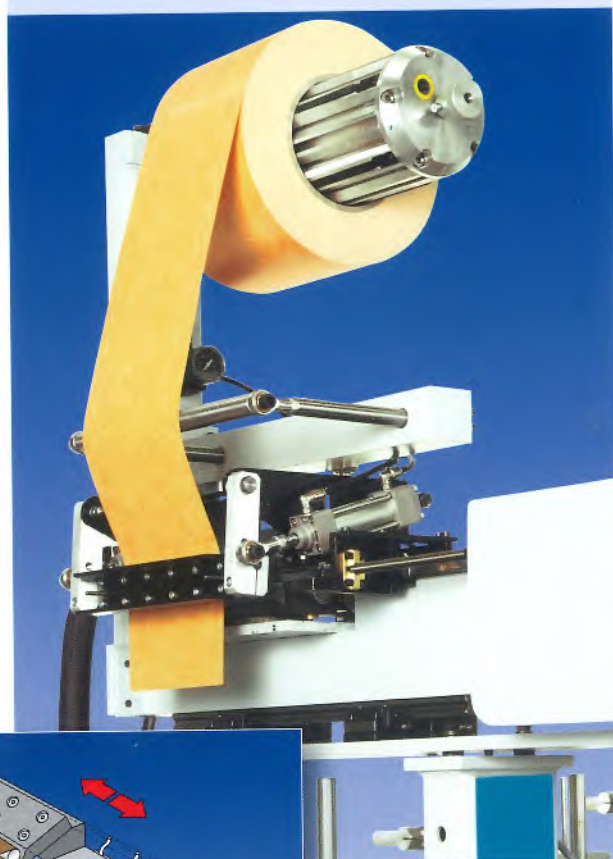
Furniture industry



Adhesive application systems

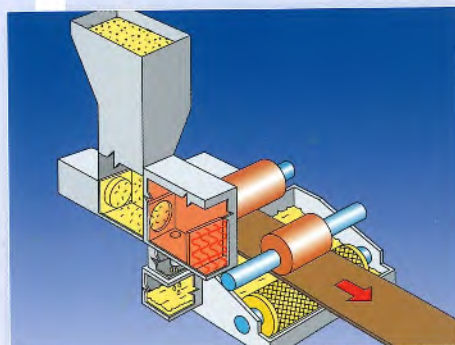
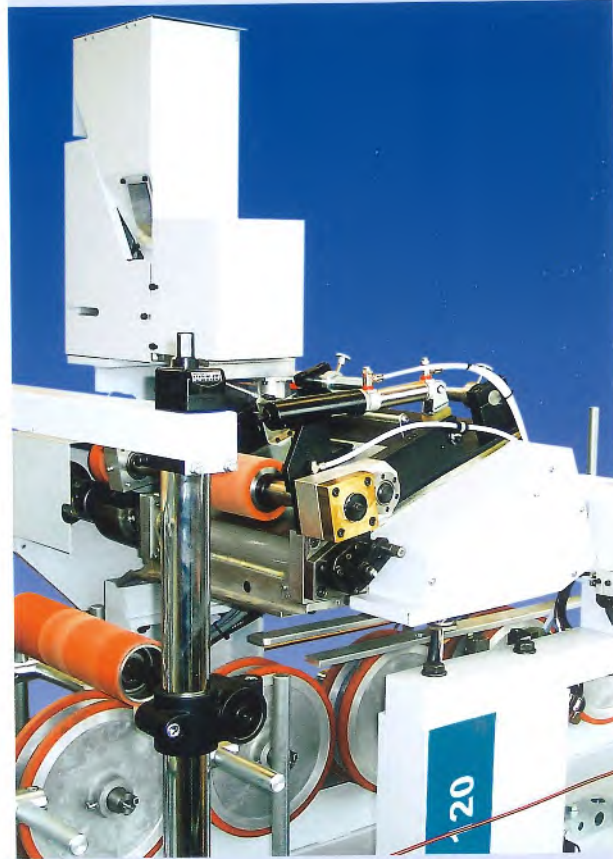
Slot nozzle application

For PUR hotmelt, EVA and polyolefin hotmelt. For bondings with high requirements concerning glue joint and surface.



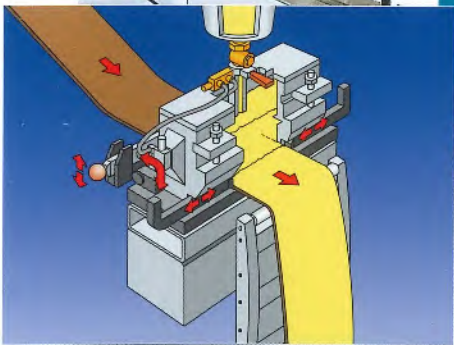
Quickmelt roller application

For EVA or polyolefin hotmelt. For bonding of decor papers, thin laminates and veneers.



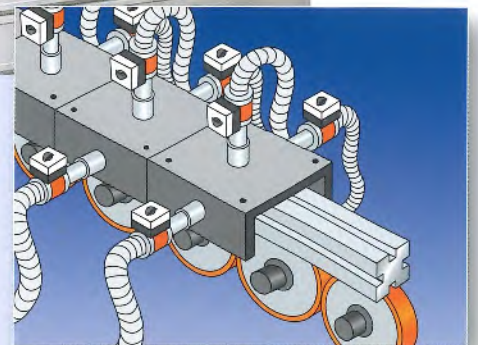
Ductor blade application

For dispersion or solvent glues.
For bonding of thermoplastic foils
and roll veneers.



Plastic & metal profiles

Appropriate profile pre-treatment
like primer application, drying and
profile preheating are decisive
for the quality of the succeeding
adhesive application.



Reproducible adjustments

Solutions to increase machine performance and machine availability!

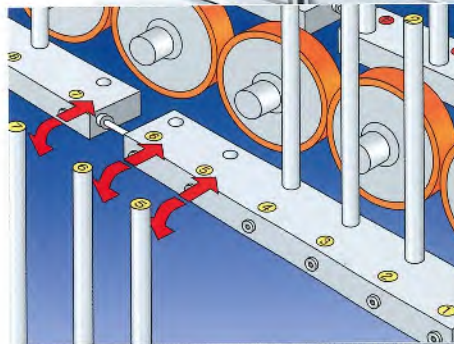
- Our customers have to produce large and small batches - both in an economic way!
- Once executed, orders have to be reproducible anytime – according to fixed specifications and within the shortest time possible.
- Adhesive costs are an important factor – they can be controlled by reliable and reproducible settings.
- During one shift, 20–40 roll changes might be necessary when working with a wrapping machine. The right system provides considerable reserve capacity.
- Even product quality is largely a matter of set-up and has to be controllable.

We have done pioneer work and have nearly tripled machine capacity with new and innovative solutions.

With Friz you optimize e.g.

profile exchange...

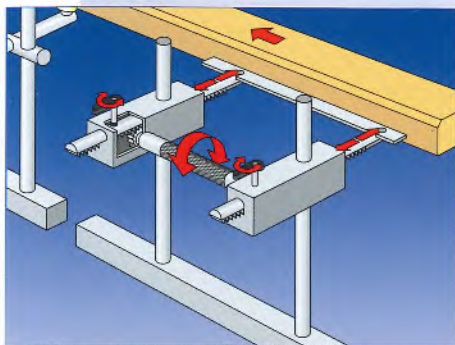
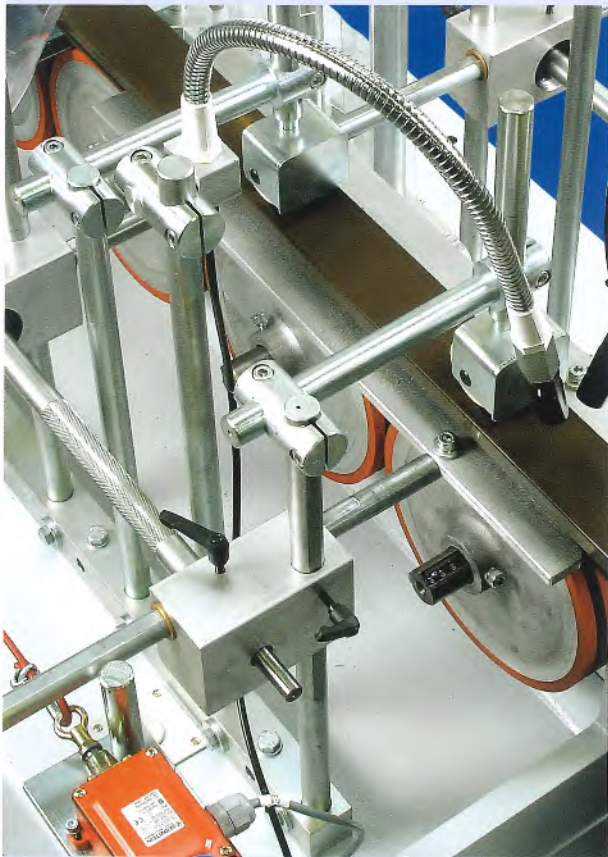
- quick change system
- adjustable tool carrier
- reliably reproducible



With Friz you possess e. g.

guidance elements...

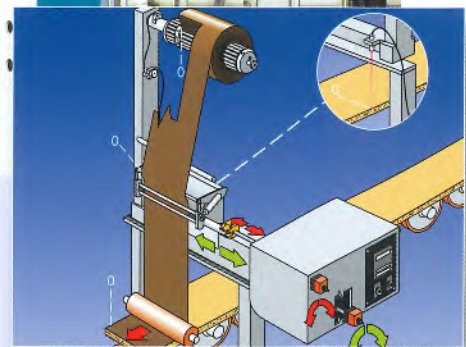
- absolutely parallel workpiece guidance
- simple handling
- quick and reliable



With Friz machines you get e.g.

reproducible machine settings...

- tool change devices
- setting devices with digital positioning displays
- to increase production capacity
- to ensure the economic efficiency



Unwinding systems

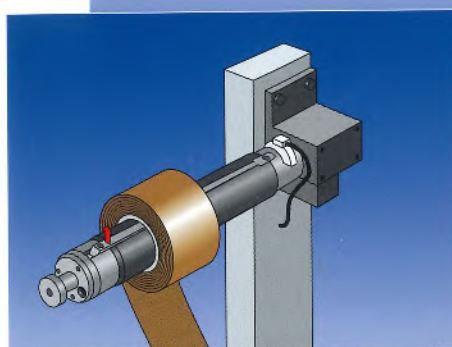
With FRIZ you possess state-of-the-art unwinding systems:

- variable technic equipment
- high machine availability
- roll change without machine stop
- programmable decor change
- mechanic, pneumatic or electronic braking systems

FRIZ unwinding systems are customizable to all requirements. Mechanic or pneumatic clamping elements for 76 or 152 mm core diameter can be used.

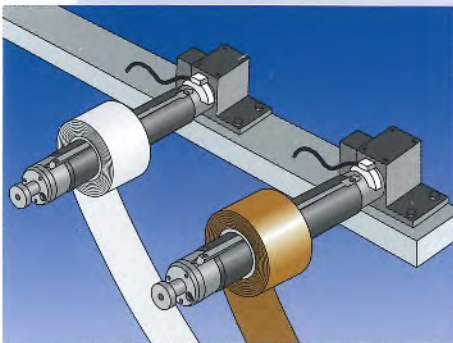
Single pneumatic unwinding

- working width up to 800 mm
- unwinding axle ± 30 mm laterally moveable



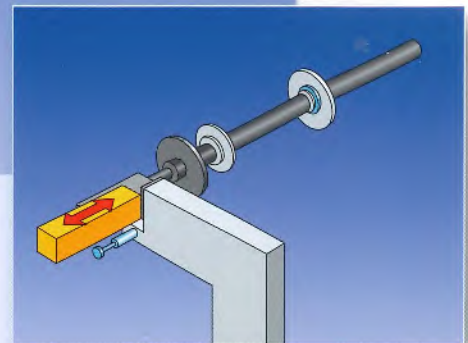
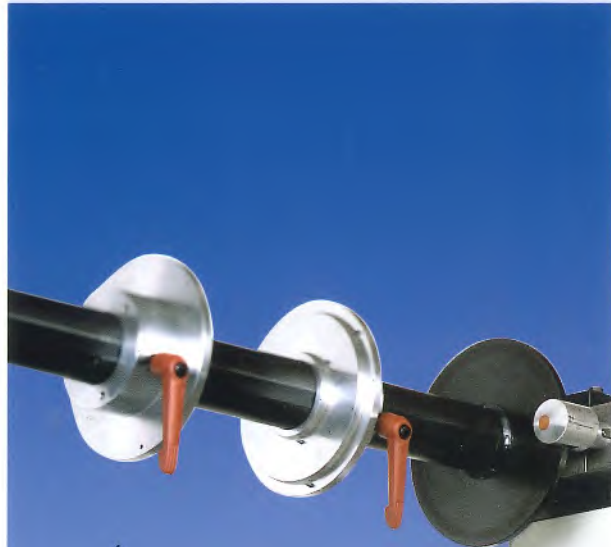
Double pneumatic unwinding

- sensory roll scanning
- optionally with joining device
- both unwinding axles ± 30 mm laterally moveable



Clamping jaw unwinding


- simple mechanic solution
- Roll cores with 76 or 152 mm interior diameter can be clamped without exchanging the clamping elements
- unwinding axle ± 30 mm laterally moveable





1

Removable wheel sets
resp. wheel set gear drives are a precondition for ideal tool use for full wrapping.



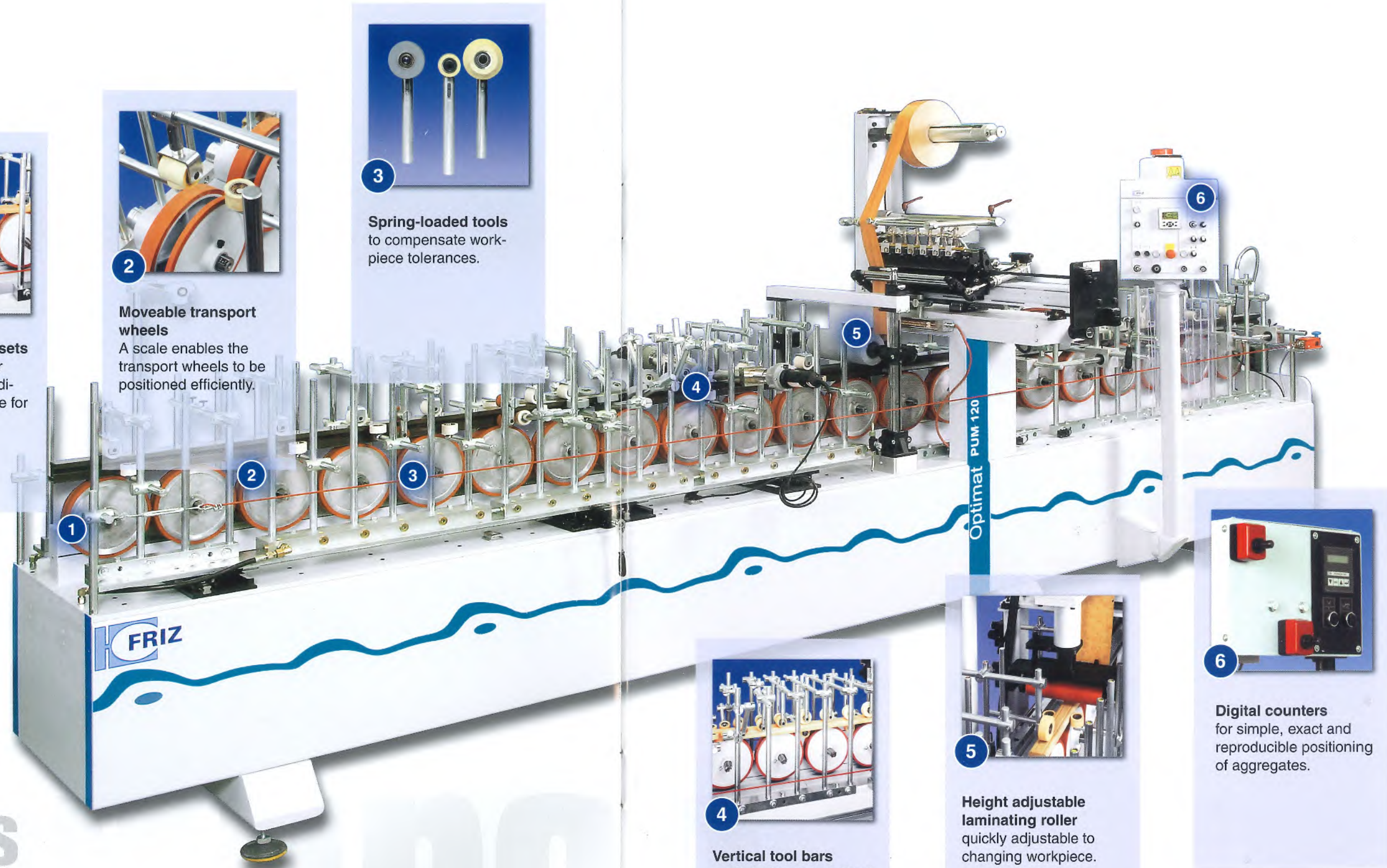
2

Moveable transport wheels
A scale enables the transport wheels to be positioned efficiently.



3

Spring-loaded tools
to compensate work-piece tolerances.



4

Vertical tool bars
each 4 pieces per wheel set make it possible to work with short wrapping sections.



5

Height adjustable laminating roller
quickly adjustable to changing workpiece.



6

Digital counters
for simple, exact and reproducible positioning of aggregates.

Optimat PUM 120

Profile wrapping Modular / flexible

All machines of the OPTIMAT series possess the same basic machine, the difference is in the equipment.

Your requirements determine the machine equipment.

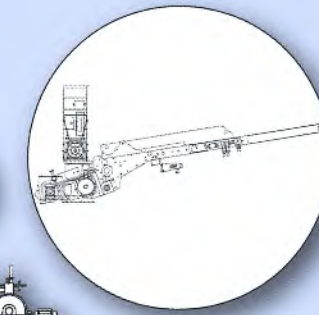
The performance class OPTIMAT can be customised to a lot of your requirements with the elongations included in our building block system.

Standard machines
Optimat PUM 120

... with roller application ▼

... with slot nozzle application ▼

... with ductor blade application ▼



◀ ... elongation 1 m
(optionally with covering)

◀ ... elongation 2 m

◀ ... elongation 3 m

... even our starter class OPTIMAT can do nearly everything!

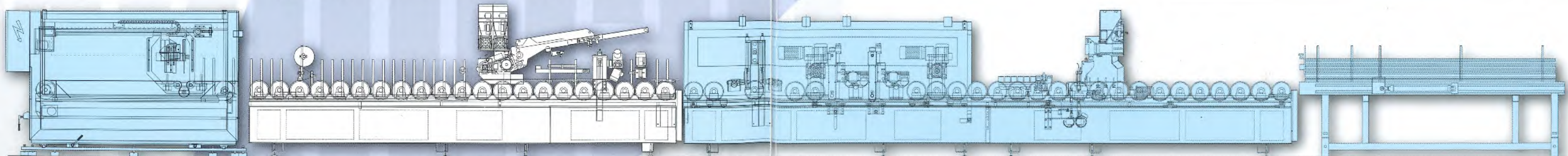
	OPTIMAT PUM 120	profiline PUM 310
Adhesive types		
EVA hotmelt	✓	✓
PUR hotmelt	✓	✓
Dispersion glue	✓	✓
Solvent glue	✓	✓
Laminating material		
Decor paper	✓	✓
Veneer strips	✓	✓
CPL laminates	x	✓
Thermoplastic foils	✓	✓
Core material		
Wood and derived timber products	✓	✓
Plastics	✓	✓
Metals	x	✓

Special requirements are met with our profiline series . . .

. . . profile wrapping unlimited!

High performance machines profiline PUM 310 ▼

Modular



Performance class Optimat



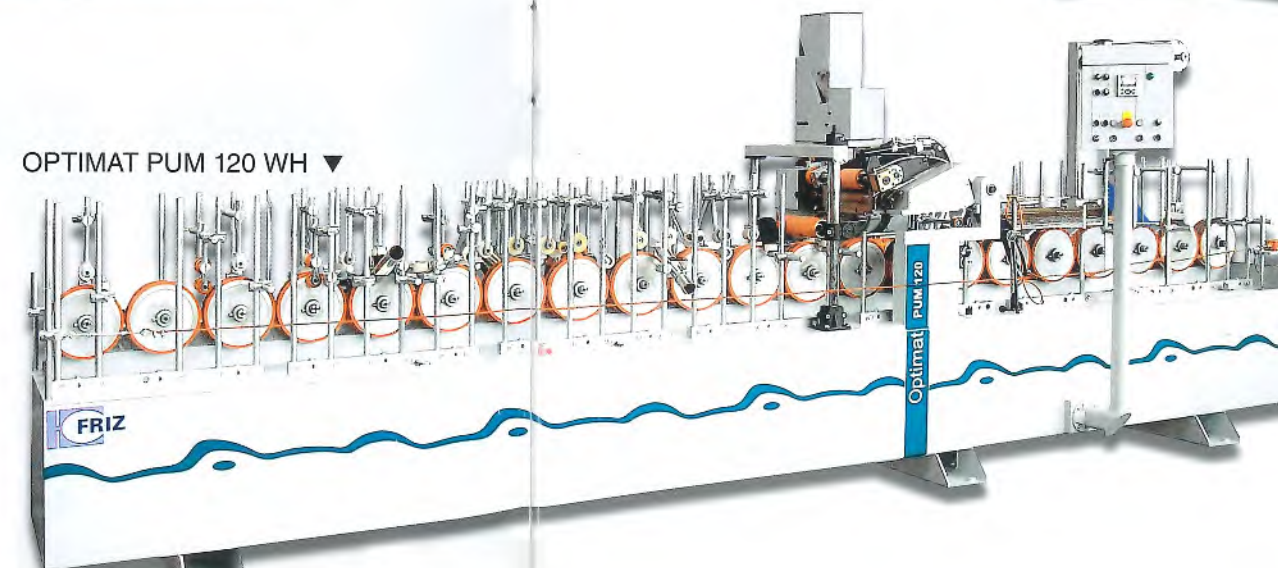
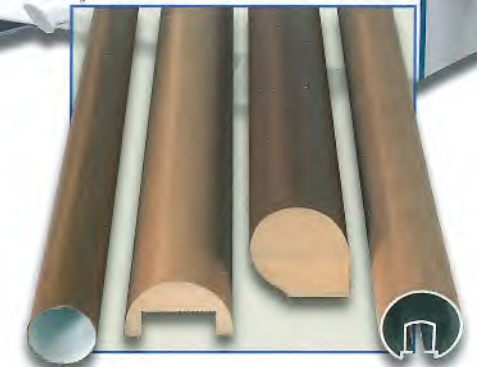
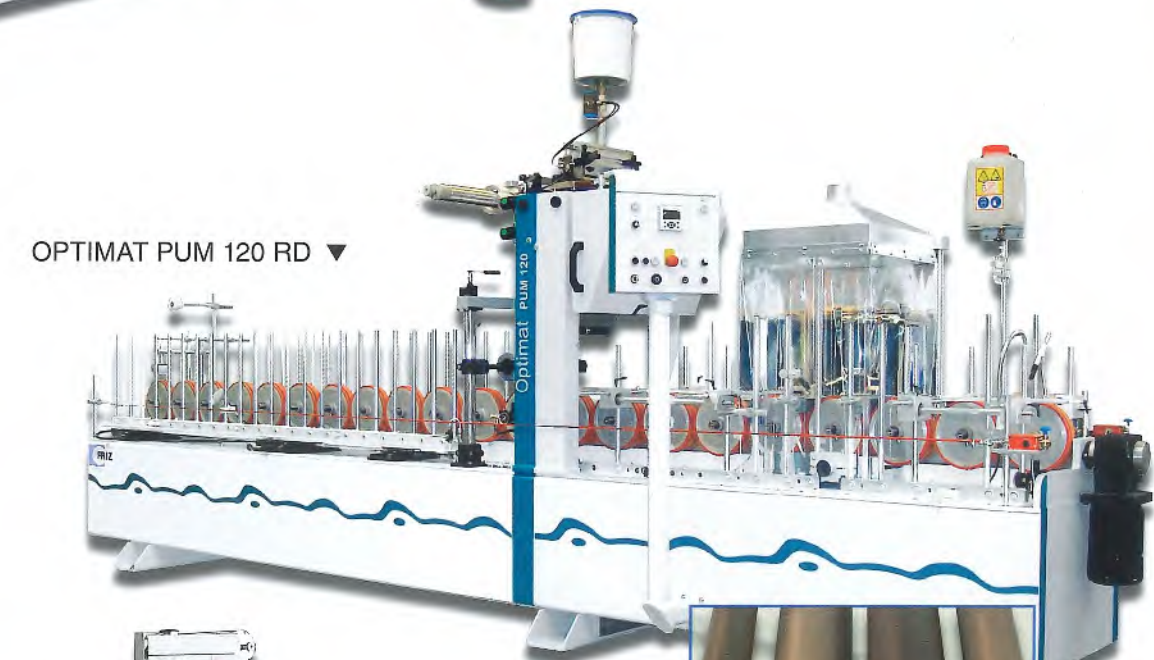
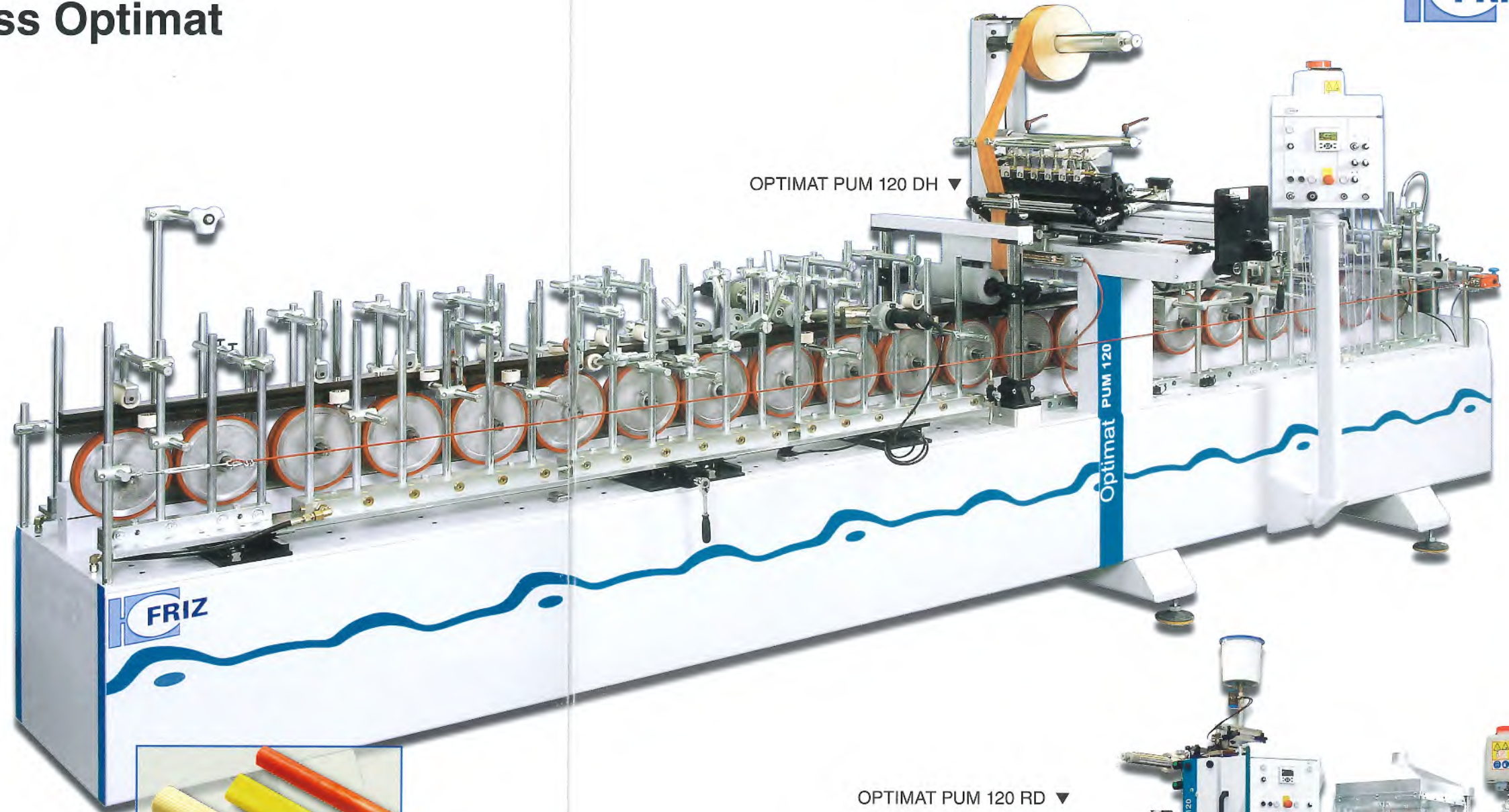
With our standard machines of the series OPTIMAT PUM 120 you can already wrap a multitude of profiles. OPTIMAT means standard machines with high quality level and ideal customisation to your specific production profile.

Basic equipment

- welded machine bed.
- integrated switch cabinet with moveable operating panel.
- complete transport device
- profile cleaning units
- adhesive application system (slot nozzle, roller or ductor blade)
- unwinding device
- 1 full set of wrapping tools

Options

- primer application units
- profile drying units
- profile preheating units
- protective foil unwinding
- wrapping zone elongation
- pneumatic clamping devices for wrapping tools



Optimat

Performance class profi line

Highly automated and interlinked production lines are controlled and set by few operators. State-of-the-art computer-aided controls and guarantee constant quality and ensure high machine availability.

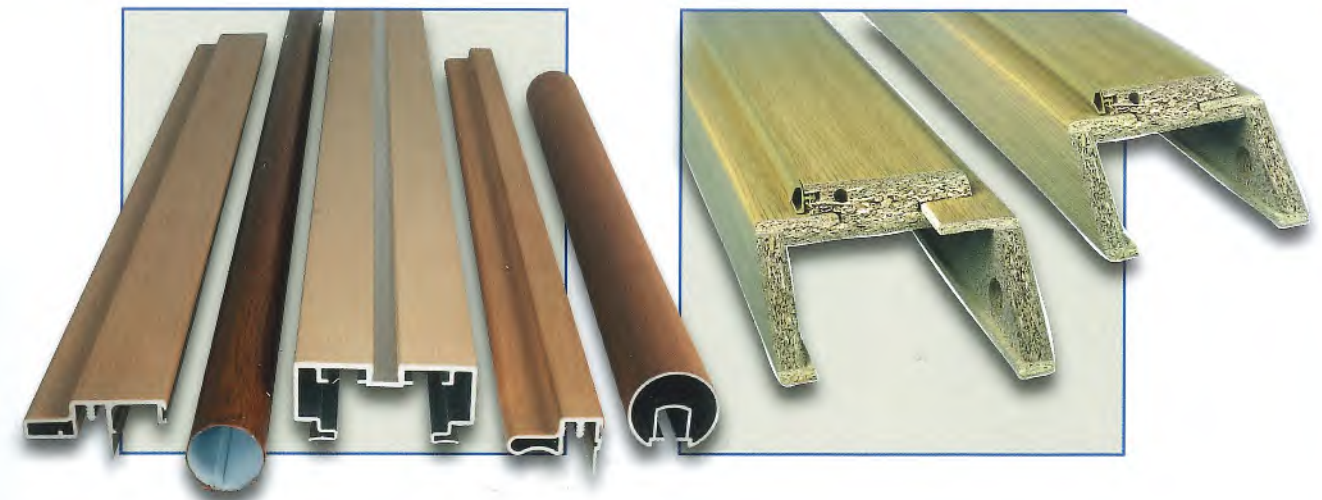
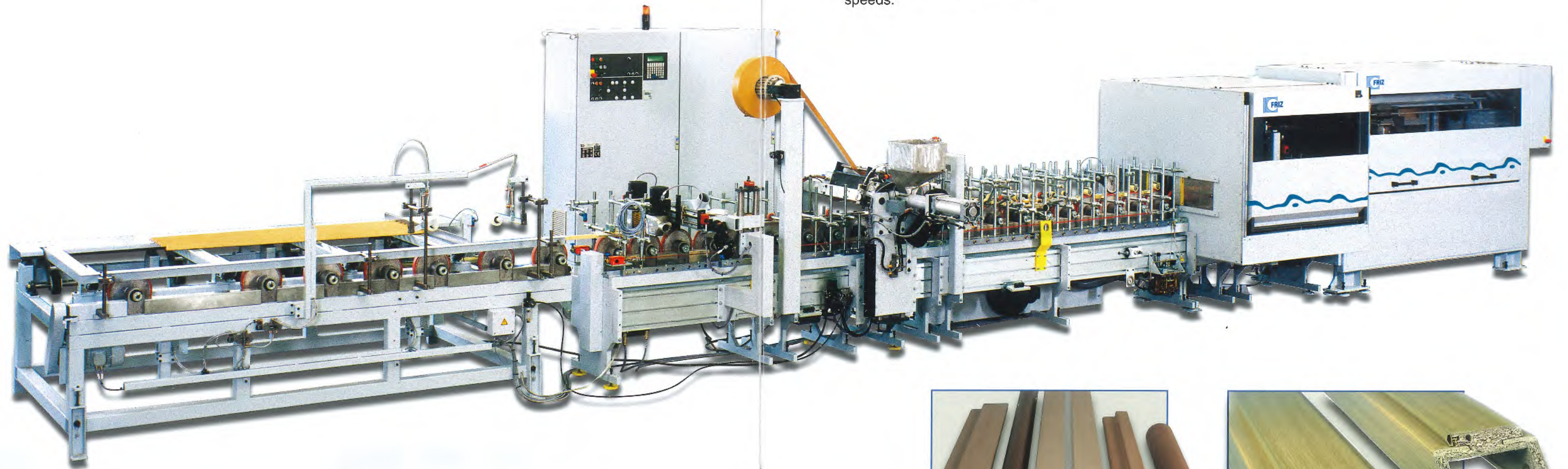
This is our product line Profi line.

With this concept it is possible to offer you compact high-performance lines for special products.

An integration into complex production lines is possible with preceding and succeeding FRIZ machines.

Options

- all possible combinations from our building-block "profile wrapping" are available
- handling systems for profile transport.
- trimming, sanding and cutting units for profile pretreatment and post-processing.
- machine equipment and structural design for maximum production speeds.



Profiline

Profile wrapping

Peripheral equipment

Foil slitting and winding machines **Optimat PFS 700/07** and **Optimat PFS 700/13**

For precise longitudinal slitting of roll PVC and polyester foils, papers, fleeces, fleece-backed veneers, thin metal foils and coated tissues.

This machine concept offers the possibility to use a variety of different materials and therefore it is versatile. With the machine type OPTIMAT PFS 700/13, the same materials can be used as with the machine type OPTIMAT PFS 700/07. The larger working width offers more possible fields of application.



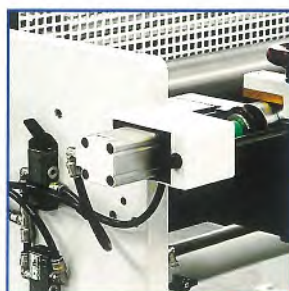
Working widths

The series PFS is available in 2 working widths:

- PFS 700 /07
with 700 mm working width
- PFS 700/13
with 1300 mm working width

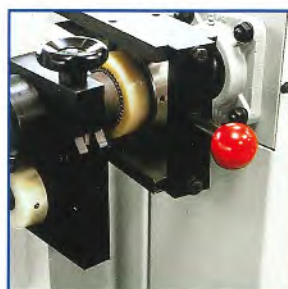


Peripheral equipment



Friction winding shafts

- automatic clamping of roll cores
- no additional clamping elements required
- continuous friction force regulation of friction elements within the winding shafts
- compressed air transmission for friction shafts by detachable pneumatic couplings with rotary connection (only PFS 700/13)



Winding device

PFS 700/07

- shaft bearing fixed on one side
- roll change is possible without dismantling the shafts by lateral pivot bearings

PFS 700/13

- winding shafts removable
- torque transmission by detachable curved tooth coupling
- compressed air transmission for friction shafts by detachable pneumatic couplings with rotary connection

Technical data		PFS 700/07	PFS 700/13
Working width max.	[mm]	700	1300
Working width min.	[mm]	20	20
Roll diameter max.	[mm]	600	600
Interior core diameter	[mm]	76 / 152	76 / 152
Cutting speed	[m/min]	12 – 100	12 – 100
Diameter top knives	[mm]	130	130
Diameter bottom knives	[mm]	105	105
Connected load	[kW]	4	5
Compressed air supply	[bar]	6	6
Machine dimensions (LxWxH)	[mm]	2.100 x 2.100 x 1.500	2.100 x 2.800 x 1.500
Machine weight	[kg]	1.400	1.700

Peripheral equipment

Profile washing and primer application station PWP 600

Wrapping of plastic profiles has to meet very high quality standards. Therefore the profiles are prepared

for wrapping in special stations. Part of the stations is primer application and afterwards drying of the profiles.



Felt application

For the machines of our performance class OPTIMAT, the primer application station can be attached directly onto the basic machine. With this version, the primer is applied onto the profile by spreading elements made of felt.

The primer is fed from an elevated tank to the spreading elements by flexible conduits.

Nozzle application

We complied with our customer's demands for a technical solution to apply primer in an economical and first of all controllable way and developed an application unit which applies primer by means of spraying nozzles. A state-of-the-art control with touch-screen terminal makes it possible to dose the primer liquid precisely for each single spraying nozzle and to save a lot of different metering data. So specific settings for different profiles are reproducible at any time.



- Touch-Screen**
- primer supply
 - nozzle control
 - supply metering



Periph...

Profile wrapping

Peripheral equipment

High-performance separating saws OPTIMAT PUS 300/25 and OPTIMAT PUS 300/45

Separating saws work with electronically controlled synchronous drive to the workpiece. These saws are used to separate continuously wrapped workpieces in the butt joint or to cut off workpiece end pieces.

The feed axle of the saw carriage, the vertical and horizontal positioning axles are high-precision linear guides with servo drives. Workpieces are transported by a non-slip toothed belt.



Basic machine

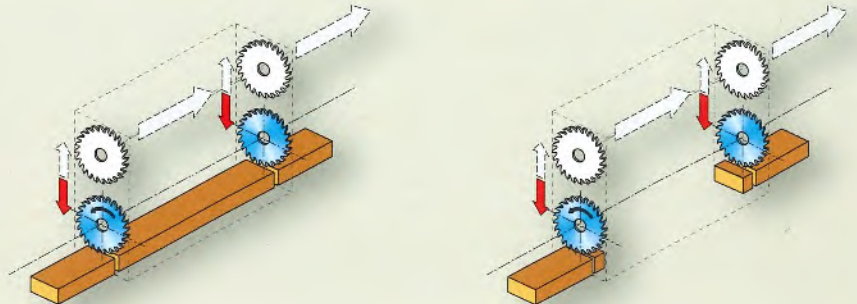
- machine bed in solid and welded design
- frequency controlled drive motor
- Separating saw works with electronically controlled synchronous drive to the workpiece

Mode of operation

- Saws can be operated in 2 modes of operation:
- accurate separating of workpieces in butt joint
 - accurate separating in gap between workpieces

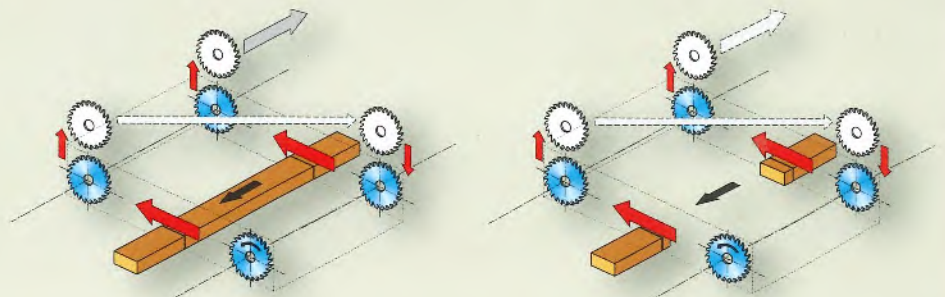
OPTIMAT PUS 300/25 – separating saw with vertical cut up to 250 mm working width

Sawing of narrow parts in the butt joint, only with vertical cut (fine cut)

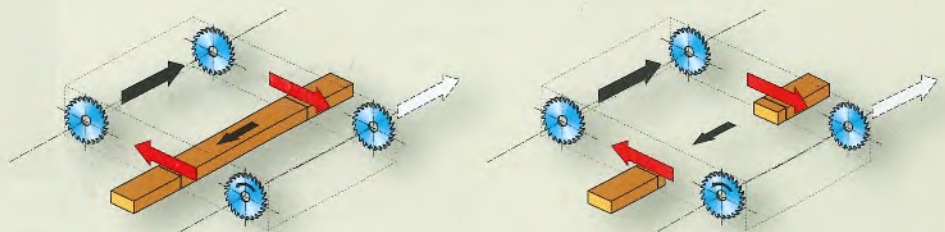


OPTIMAT PUS 300/45 – separating saw with vertical and cross-feed cut up to 450 mm working

Sawing in the butt joint in every direction with lifting and return stroke (fine cut).



Sawing in the butt joint in both cross directions (rough cut).



Friz has been the innovative specialist for machines and methods for surface laminating – since more than 90 years .



Our products are machines and lines for surface laminating for any field of application. From the standard machine to the product-specific line.



Friz machines and methods have been given credit from all leading manufacturers and their suppliers in Germany and all over the world. Recognition for innovation, flexibility, reliability and high availability.

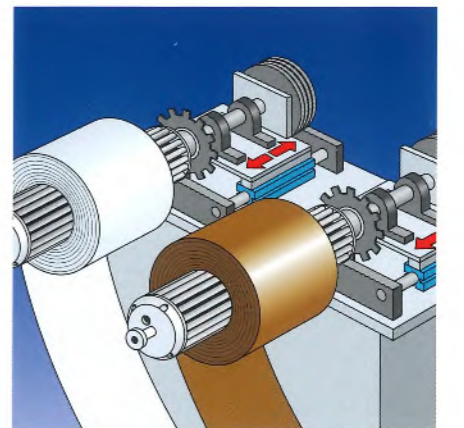
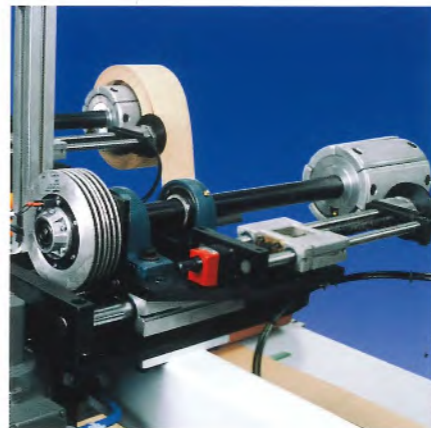
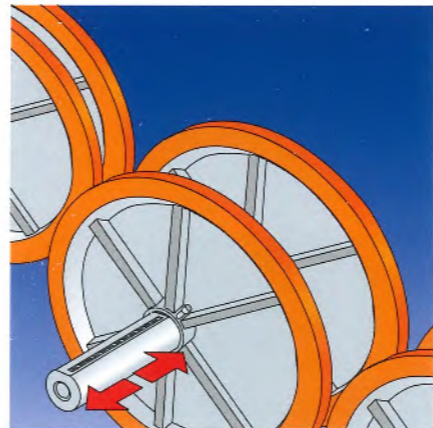
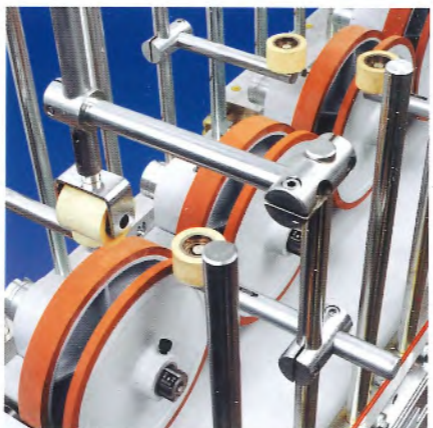
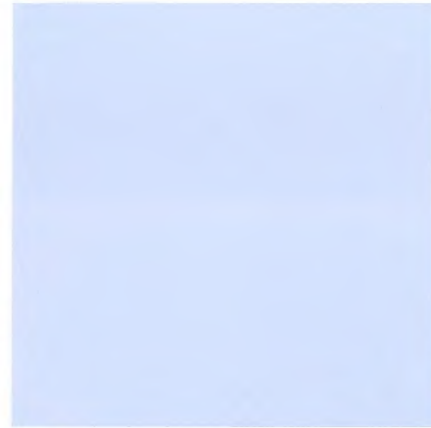
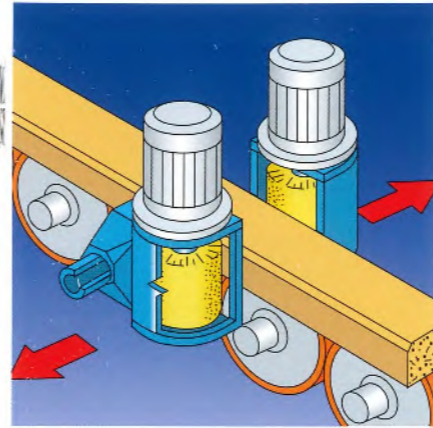
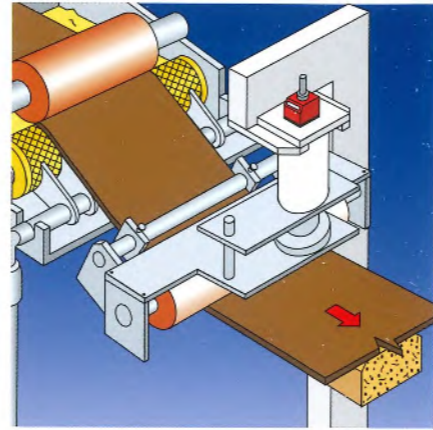
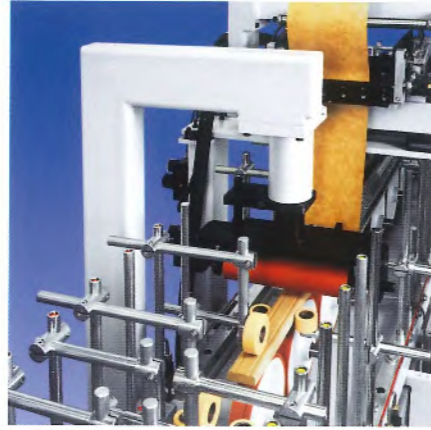


Quality

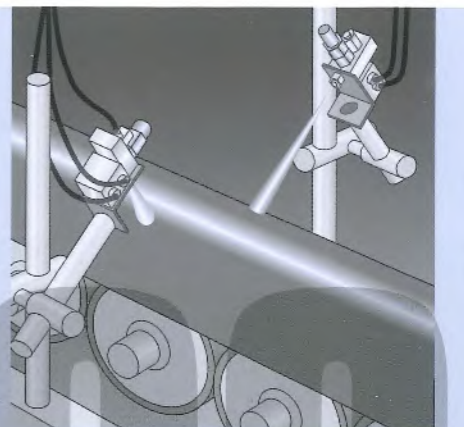
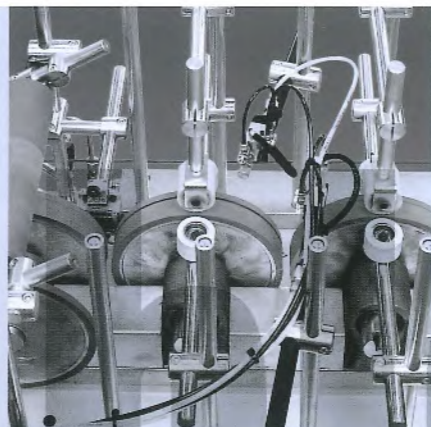
is more than a quality management certified according to ISO 9001 - from the first concept not only the technical realisation is emphasized but also the subsequent handling and economic considerations.

With continuity into the future

Friz employees "live" with laminating technology. Their long experience and creativity are consolidated in a trendsetting product range in line with the market – to the advantage of our customers.



Friz-Building block system

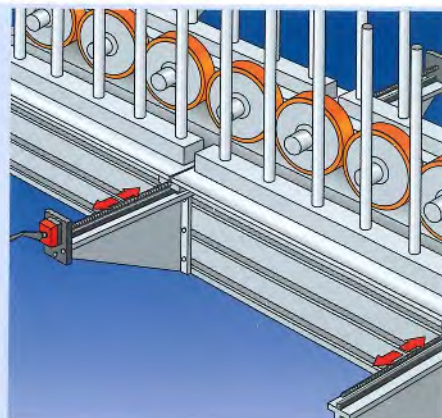
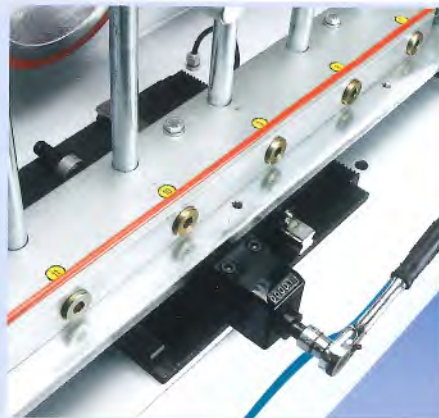


Profile wrapping - building block

Basic machine

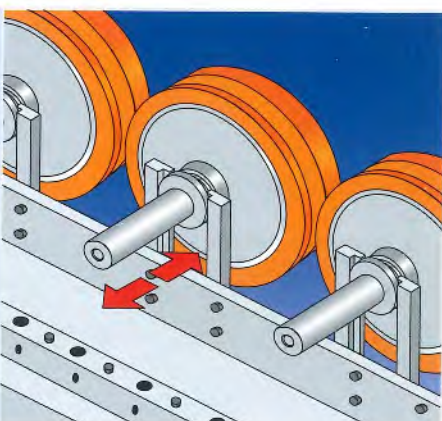
Tool carrier width adjustment

Retooling is not necessary for profiles with same profiling but different width. Together with the Quickclamp system, left and right tool sets can be combined. Width adjustment can be installed on one or both sides. The total machine length can be equipped with the width adjustment only partially or divided into several sections.



Central width adjustment with 2. set of wheels

On machines having a fixed side, the second set of wheels can be adjusted automatically together with the width adjustment of the tool carrier (total machine length).



Machine bed elongation

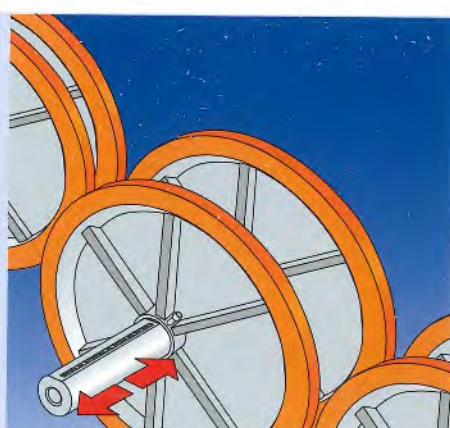
The machine bed can be elongated as required.

(see also page 12/13)



Transport wheels

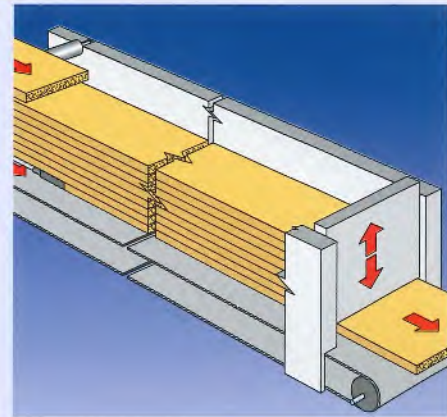
Wheels can be moved on the wheel axle, a scale shows the position. Fastening by hexagon socket screws.



Workpiece infeed and removal

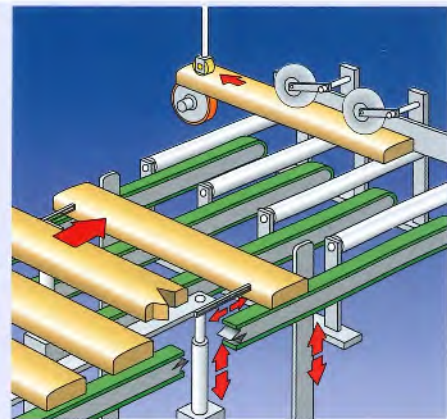
Infeed buffer magazine for workpieces

as workpiece buffer magazine in automatic production lines between profiling and profile wrapping. Loading from the top, infeed from the bottom, with transport belt and pneumatic pusher arm.



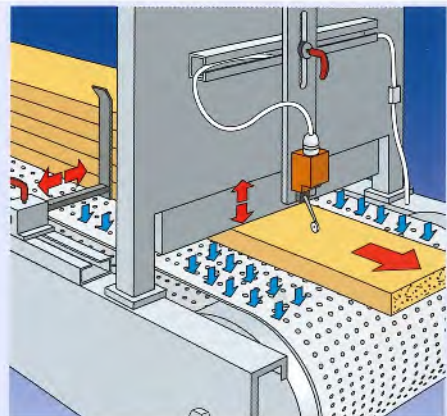
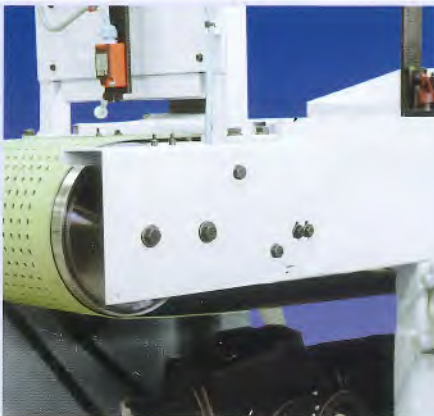
Infeed magazine with cross belt

For continuous feeding of flat lying workpieces. One workpiece at a time is delivered from the synchronous cross belt transport to the infeed roller conveyor and supported by pneumatically controlled top pressure rollers it is pushed into the profile wrapping machine.



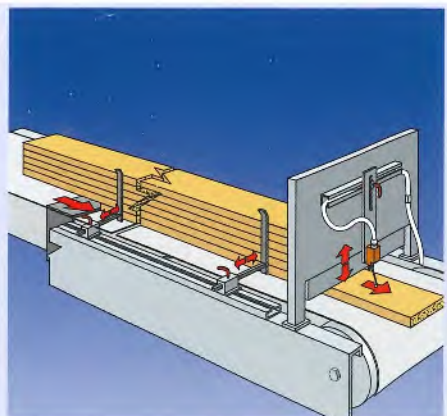
Vertical infeed magazine with vacuum belt

For continuous feeding of a profile wrapping machine with flat lying and stackable workpieces. Vacuum belt serves as workpiece transport.



Vertical infeed magazine with pusher cylinder

For continuous feed of a profile wrapping machine with flat lying and stackable workpieces. Infeed by a pneumatically controlled pusher rail which is adjustable to workpiece length.

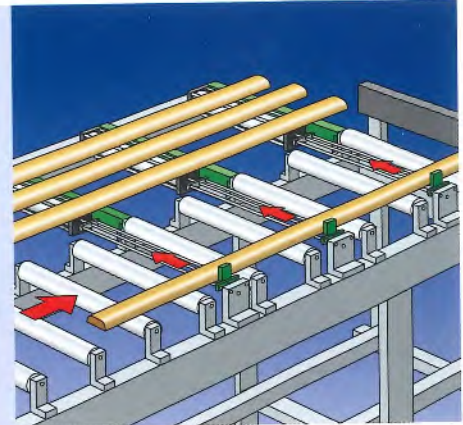
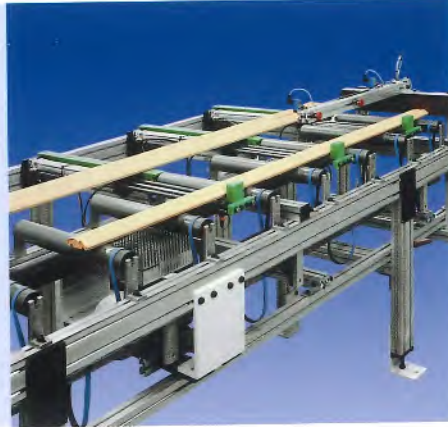


Profile wrapping - building block

Workpiece infeed and removal

Outfeed roller conveyor with buffering

The workpieces already separated in the butt joint are accelerated to put a distance between them. At the end of the roller conveyor, the workpieces are slowed down and pushed by pneumatically controlled pushers to a parallel storage area to be de-stacked manually.

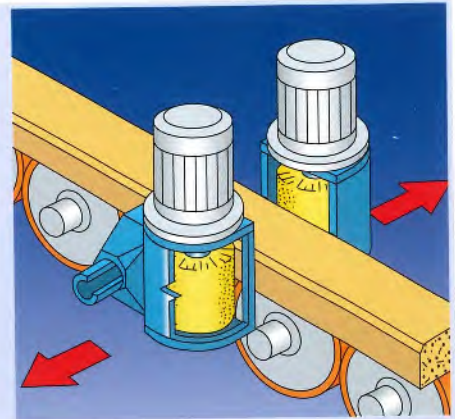
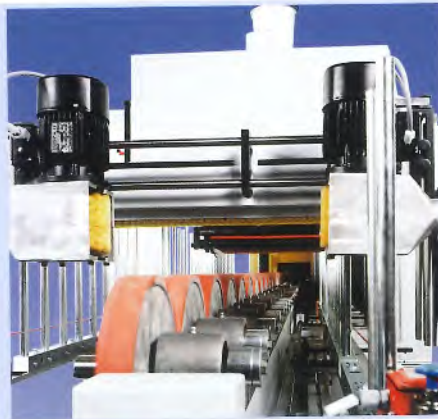


Profile wrapping - building block

Profile pre-treatment

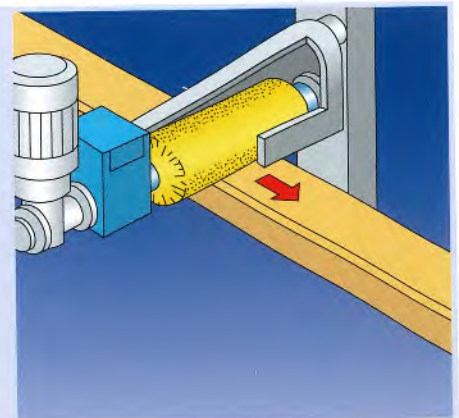
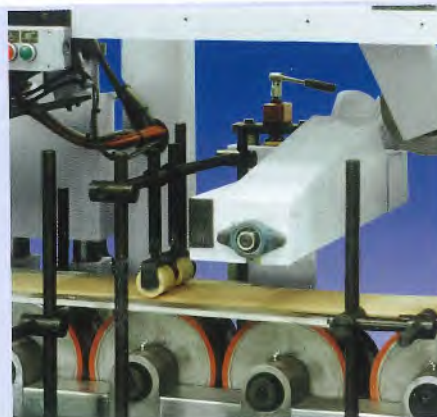
Edge brushes, adjustable

To clean the workpiece side surfaces. Brushes are suspended height adjustable and can be adjusted in width by spindles.



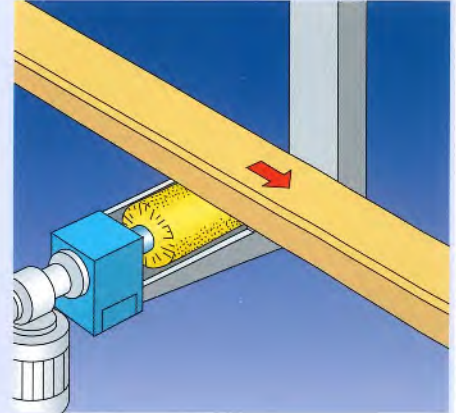
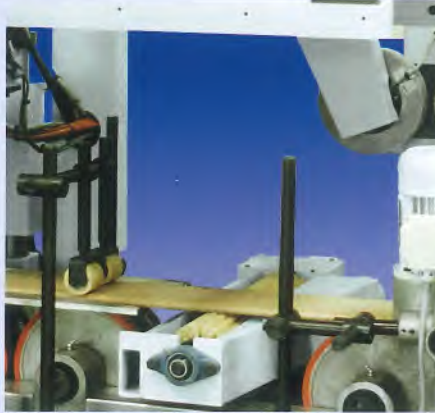
Surface brush, top

To clean the top workpiece surface. Brush is height adjustable by spindle.



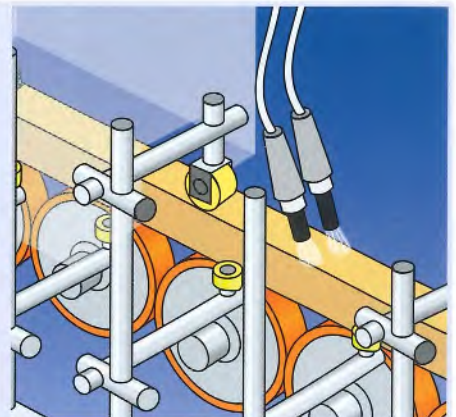
Surface brush, bottom

To clean the bottom workpiece surface.



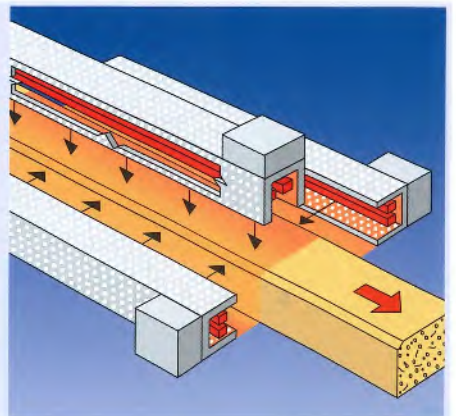
Blow-off nozzles

For additional cleaning of profiles. The wide-spread nozzles are flexibly adjustable.



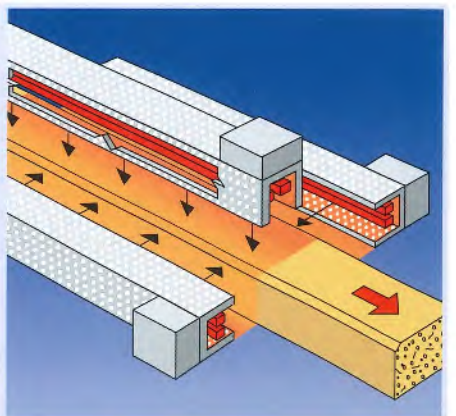
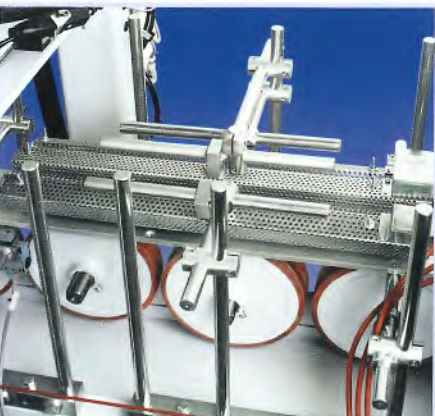
Profile preheating, short-wave

Short-wave radiators are used to work with higher feed speed or to meet the requirements of an increased surface temperature.



Profile preheating, medium-wave

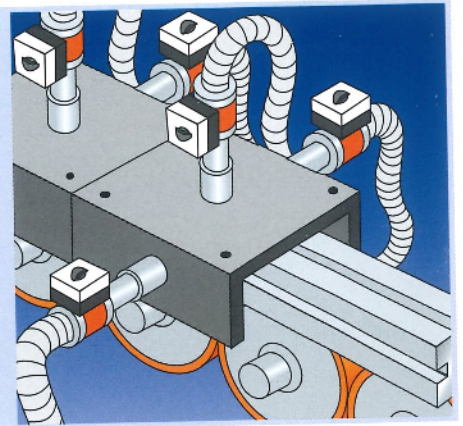
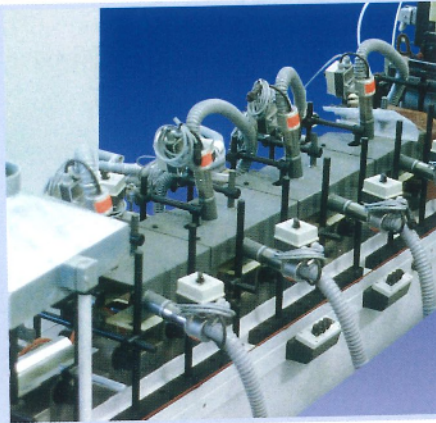
To heat the profile surface for a high-quality bonding.



Profile wrapping - building block

Profile pre-treatment

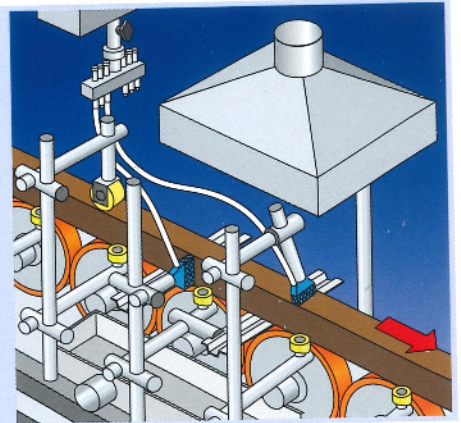
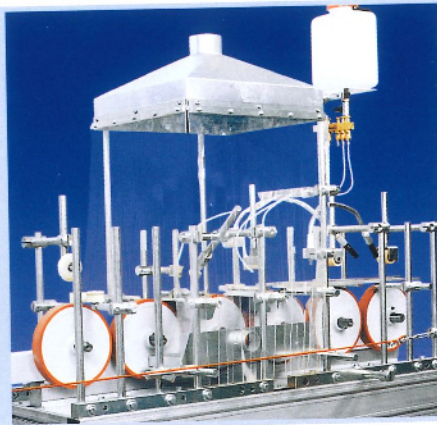
Heating tunnel for metal profiles
with central air supply.



Primer application

Matching liquids are applied to prepare plastic and metal surfaces for subsequent adhesive application.

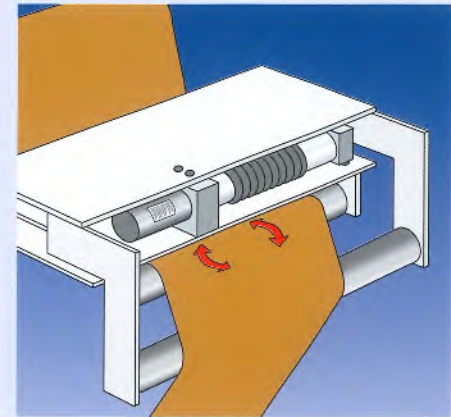
(see also page S 20/21)



Adhesive application, magazines, unwinding

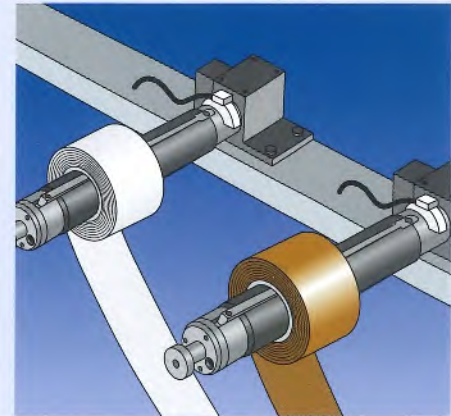
Automatic web edge guider

Computer-aided web edge guider for machines with feed speeds exceeding 60 m/min.



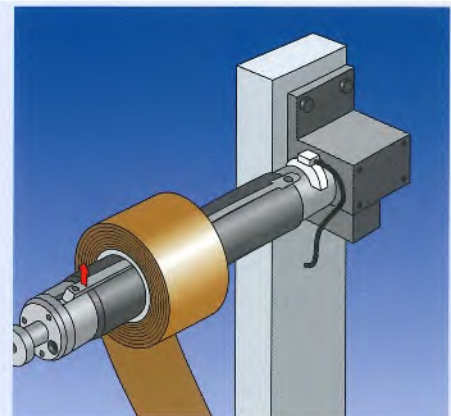
Double unwinding

With pneumatic clamping sleeves and adjustable pneumatic brakes. Unwinding axles laterally adjustable 30 mm to set the foil.



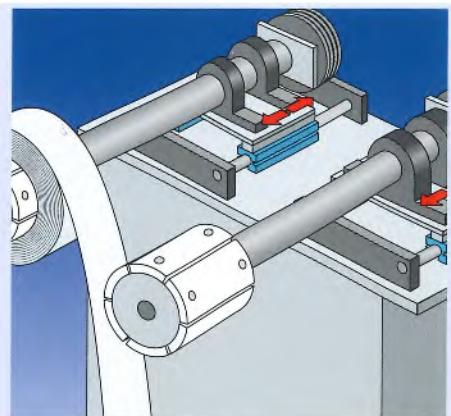
Single unwinding

With pneumatic clamping sleeves and adjustable pneumatic brakes. Unwinding axles laterally adjustable 30 mm to set the foil.



Clamping sleeves

Unwindings can be equipped optionally with clamping sleeves for 76 or 152 mm core diameter.

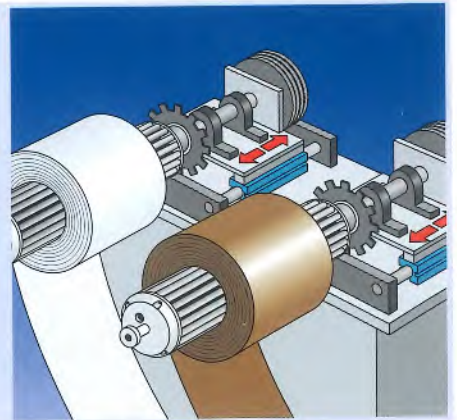
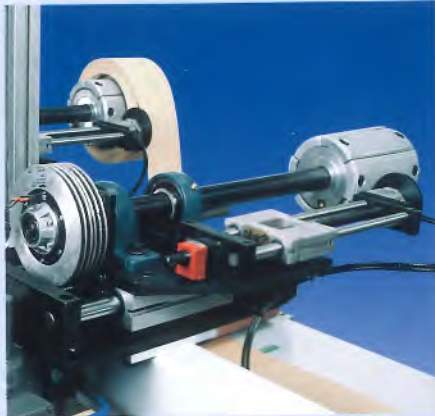


Profile wrapping - building block

Adhesive application, magazines, unwinding

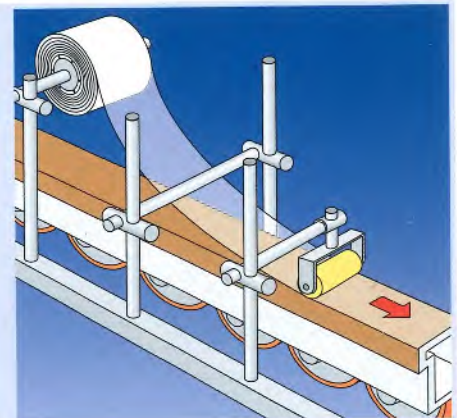
Magnetic powder brake with scanning

Constantly adjustable braking moment.



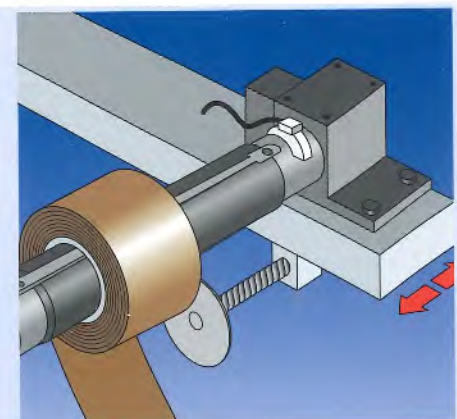
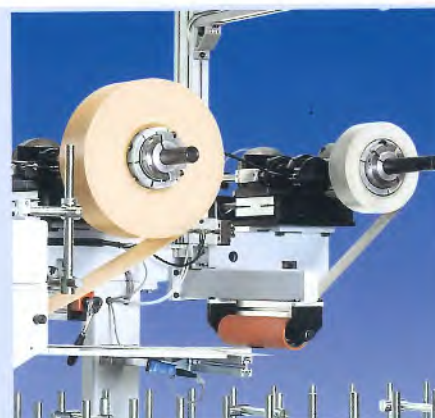
Protective foil unwinding

to apply protective foils onto wrapped work-pieces. Incl. protective foil unwinding, deflecting axle and fork-type pressure roller.



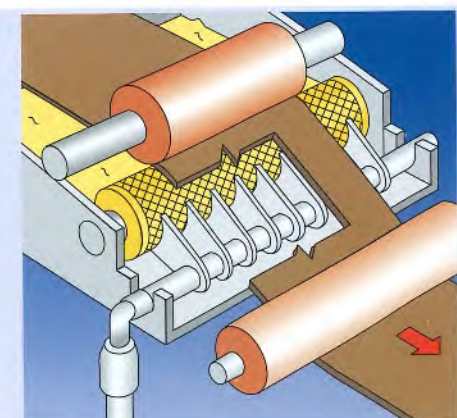
Presetting stop for unwinding

Pneumatic stop adjustable by spindle. Unwinding axle adjustable by spindle together with stop. At production start, the presetting stop is pneumatically disengaged approx. 5 mm.



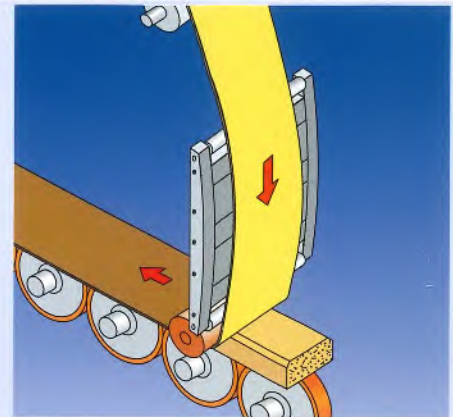
Veneer deflector, heated

Improves adhesive application especially when using thin material and prevents the material being pulled into the roller applicator.



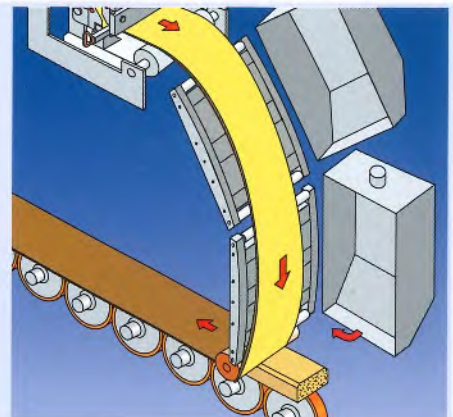
Heating plate for CPL

Adjustable heating plate, heating output specially matching the requirements of CPL.



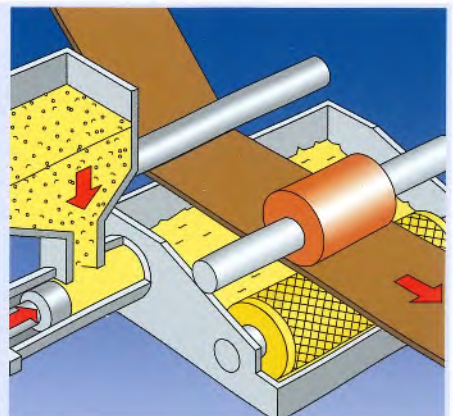
Additional heating plate for dispersion glue

To speed up evaporation when using dispersion glues, an additional heating plate is used, to achieve higher production speeds.



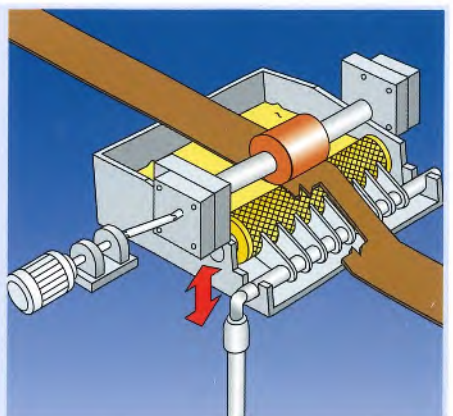
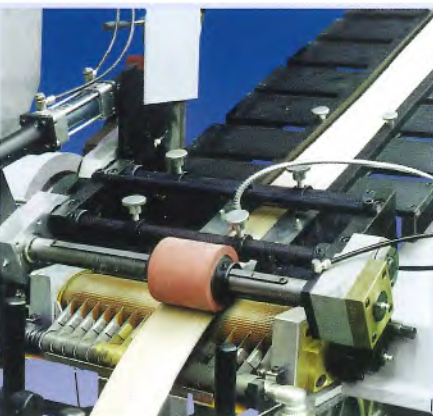
Quickmelt, roller glue applicator

Roller applicator for hotmelt.



Cardan drive for counter-pressure roller

For thick veneer.

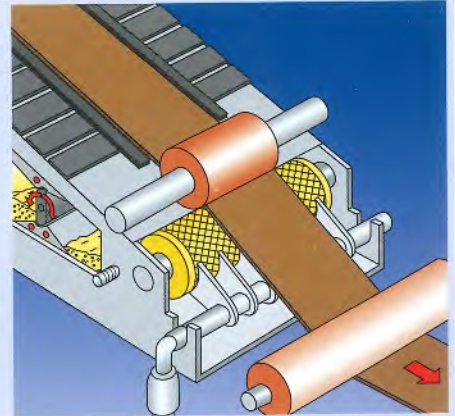


Profile wrapping - building block

Adhesive application, magazines, unwinding

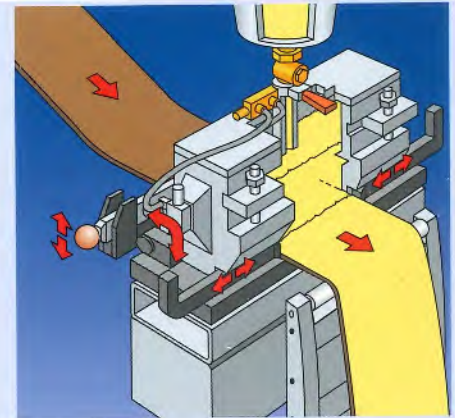
Quickmelt, accessory for veneer

For a manual veneer strip infeed, consisting of:
veneer tray with guides
glue application roller for veneer heated veneer
deflector (0,1 kW)



Ductor blade glue application

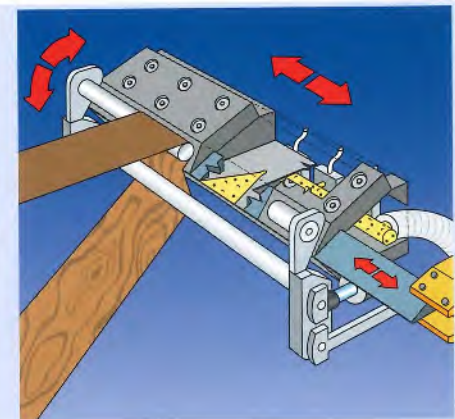
For dispersion or solvent glue. Application width
is infinitely variable by slide.



Slot nozzle for adhesive application

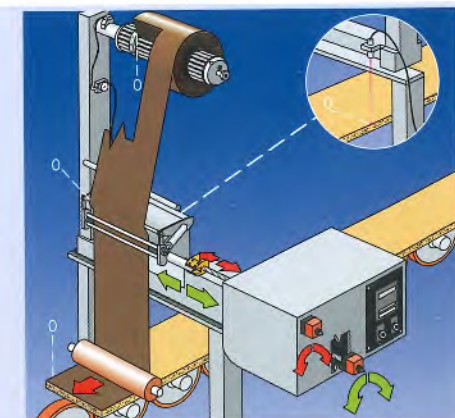
For PUR and EVA hotmelt. Application width is
infinitely adjustable by slide.
There are slot nozzles in different working widths
available.

A reasonably priced alternative to the slide-
adjustable nozzle is the mask nozzle. The
application width is then adjusted by means of a
exchangeable slitted mask.



Slot nozzle, combined with single unwinding

Slot nozzle applicator for PUR hotmelt combined
with a single unwinding and setting mechanism.
This unit is also available as detached conversion
kit, suitable for any profile wrapping machines.



Premelters

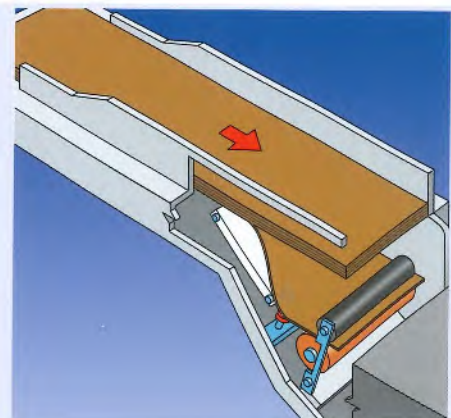
Tank or bulk melters, matching the performance requirements of the profile wrapping machines and the adhesive application systems.

The premelters of our partner **NORDSON** are optimally suitable for exact and sophisticated hotmelt applications.



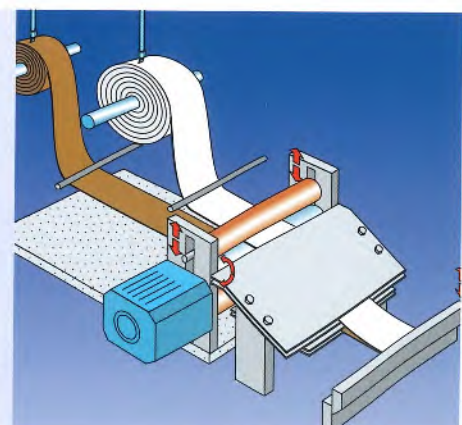
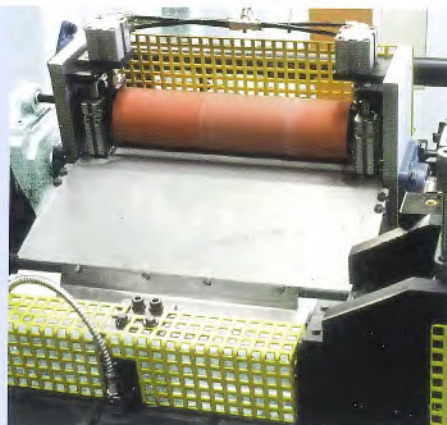
Automatic veneer strip magazine

Automatic magazine working from the bottom. Always the bottom strip is fed. Smooth reloading during production possible.



Automatic roll changer, veneer, CPL

With integrated snipping unit of lengths. Laminates can be run from the first or second unwinding (electronically controlled) or a roll change can be effected while the unwinding still runs.

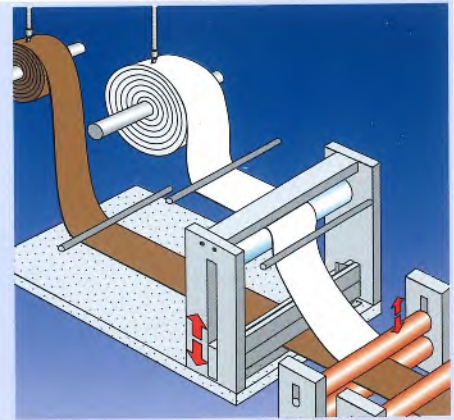
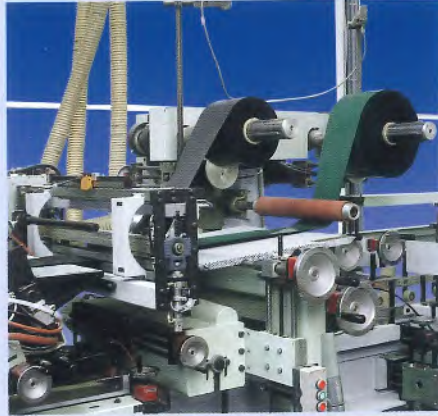


Profile wrapping - building block

Adhesive application, magazines, unwinding

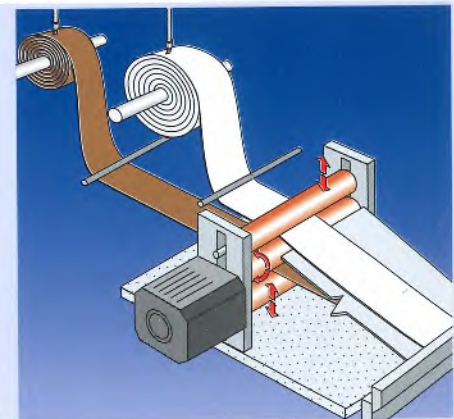
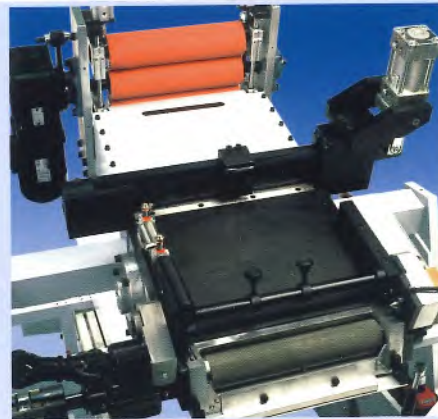
Automatic roll changer, paper and foils

Automatic joining of second roll upon roll end or also after a predetermined running length for decor change, in this case with cutting device to cut off the first roll.



Automatic roll changer, roll veneer or thin laminates

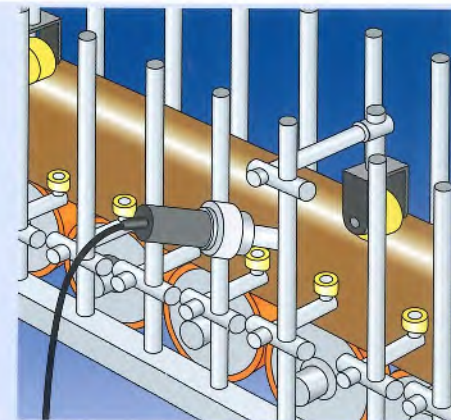
With integrated snipping unit of lengths. Laminates can be run from the first or second unwinding (electronically controlled) or a roll change can be effected while the unwinding still runs.



Wrapping zone

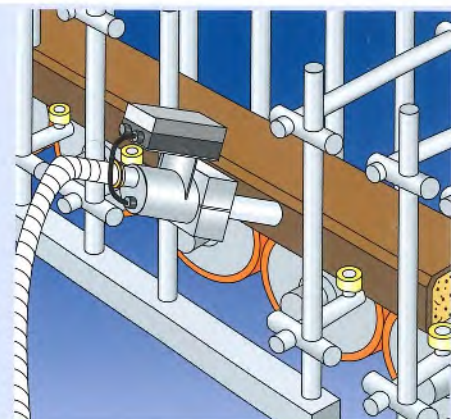
Hot air fans

Hot air fans to reactivate the adhesive joints, incl. suitable slip-on nozzles.



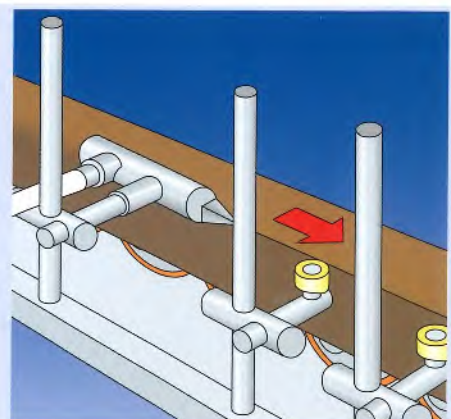
Air heaters

These are standard equipment with all our Profi line wrapping machines. This central air supply guarantees very high product life of the heating cartridges.



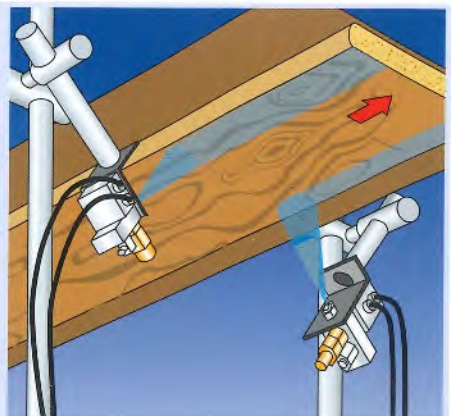
Edge heating shoe

To heat thermoplastic foils before a sharp-edged wrapping edge to avoid stress whitening and trapped air.



Separating agent spraying device

To avoid bonding on the already laminated surfaces during wrapping.



Profile wrapping - building block

Wrapping zone

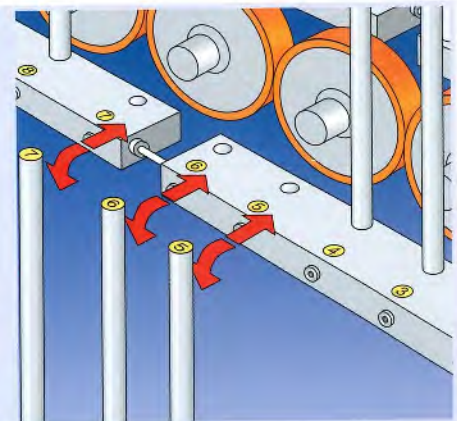
Veneer moisturizing with water or vapor

Humidity is applied onto the veneer with controlled high-pressure nozzles to increase pliability before wrapping.



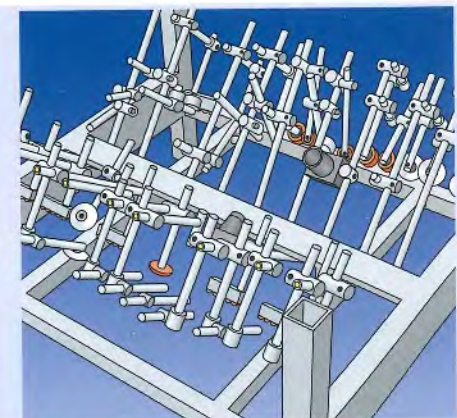
Quickclamp

For preset tool bars. To reduce setting times. Consisting of hydraulic clamping segments and hydraulic unit. Vertical tool bars of the standard tool set are adapted to this system.



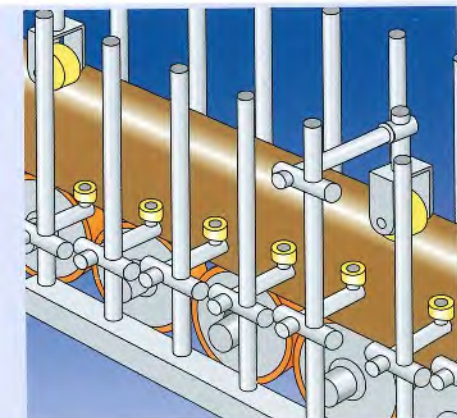
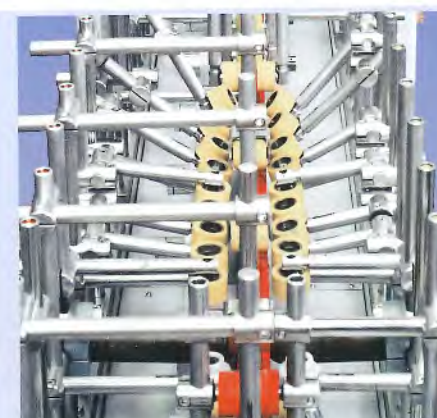
Storage system for tools

For safe and space-saving storage of 2 x 18 preset tool bars.



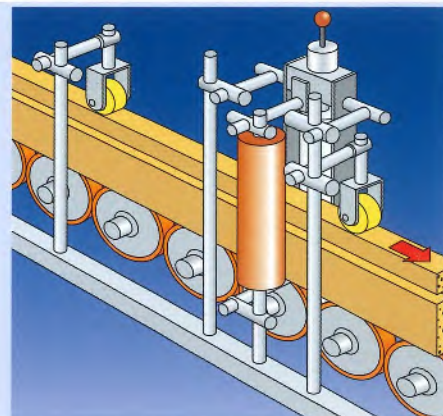
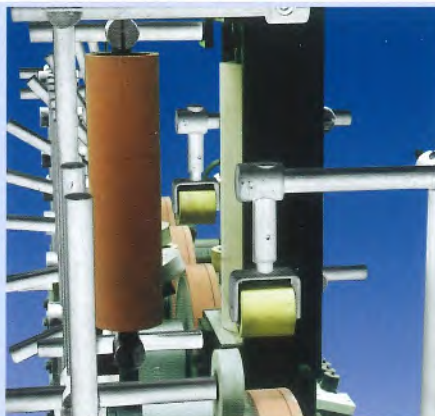
Tool set

Consisting of vertical tool bars, cross-type clamps, tool holders (spring-loaded and rigid) and wrapping rollers.



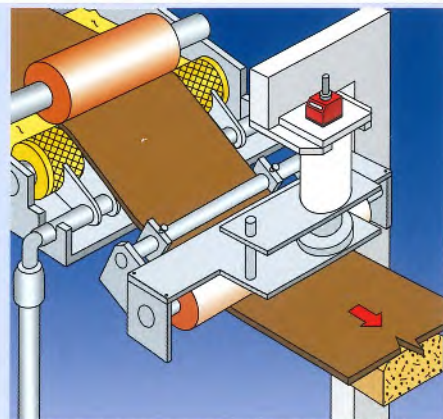
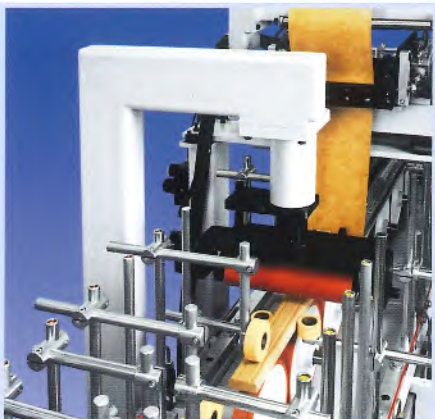
Vertical drives

Mountable onto all wheel axles. Thin workpieces which are wrapped vertically are transported smoothly and continuously in spite of reduced friction on the transport wheels (e.g., drawer profiles).



Height adjustable laminating roller

The laminating roller is vulcanized with glue repellent silicone rubber and is height adjustable by spindle and counter.

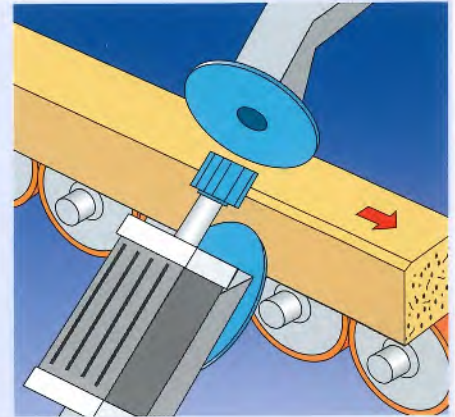
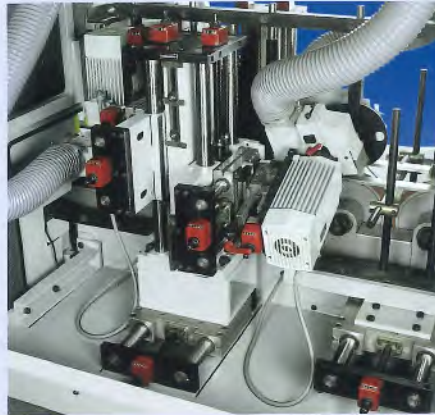


Profile wrapping - building block

Milling, sanding, sawing, separating

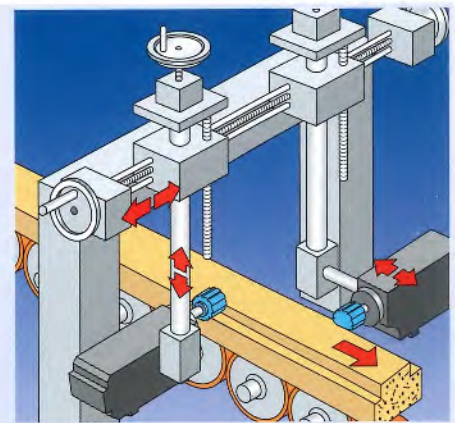
Trimming/radius milling unit

Applicable left or right, various versions are available.



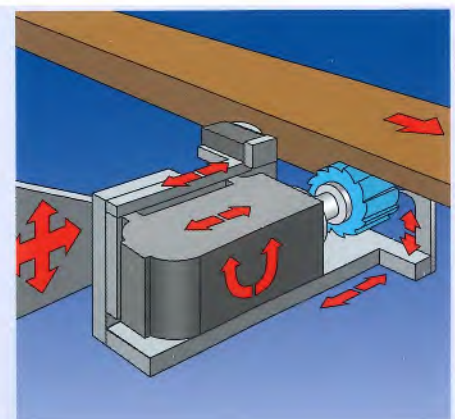
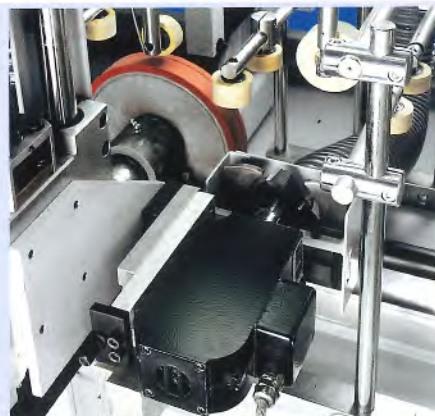
Milling units, rigid

Unit is suitable for simple trimming of veneer excess material.



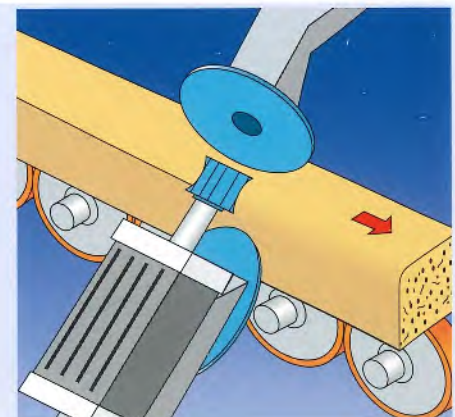
Milling units, traced

Height and width adjustable, motors 180° swivelling, with double tracing.



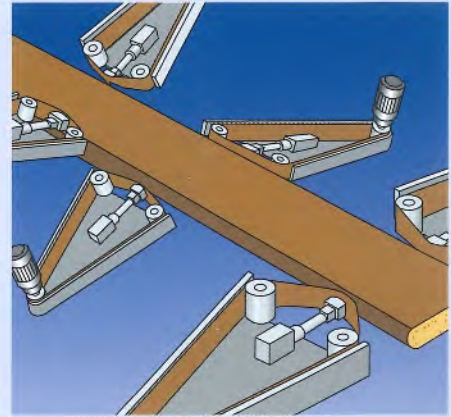
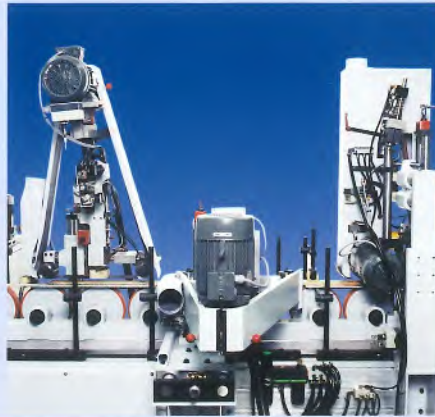
Universal milling unit

Trimmer column with cross support and spindle adjustment.

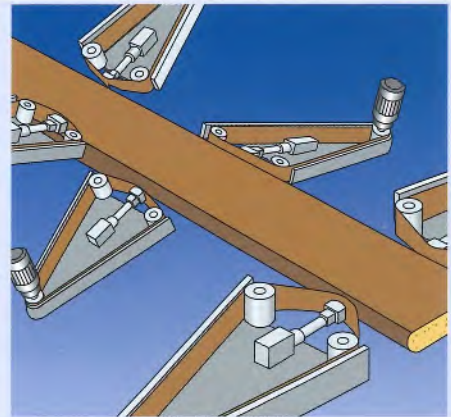


Chamfer and radius sanding unit

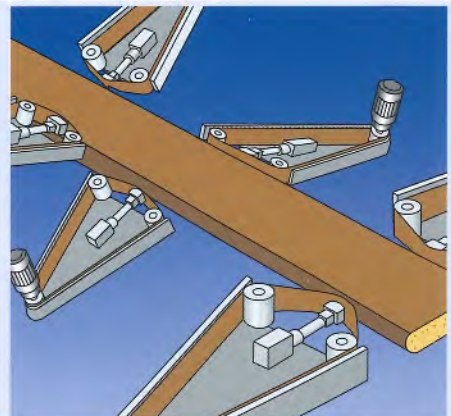
applicable left or right, various disc or belt sanding units are available..



Belt sanding units, straight edges.

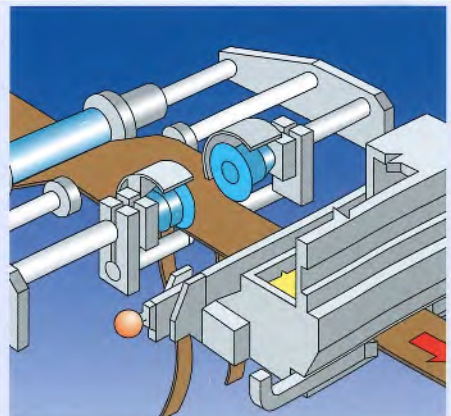


Profile belt sanding unit.



Foil trimming device

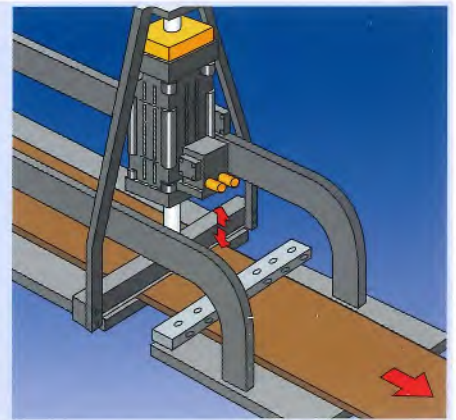
To trim the paper or foil width before applying adhesive, with pneumatically or electrically driven circular knives.



Milling, sanding, sawing, separating

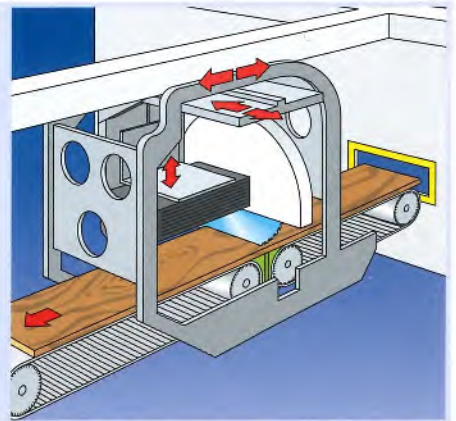
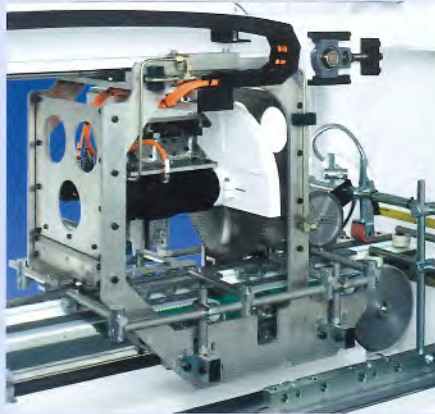
Cutting unit

Coiled laminates or veneers are already cut to fixed lengths in the magazin area prior to wrapping. Using veneer with straight butt joints, the joints are made perceptible for sensors by metal foils in the veneer or by leaving small gaps between the veneers to ensure an exact separation.



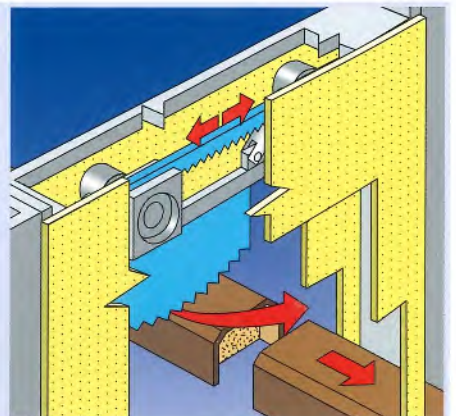
High-performance separating and snipping saw

to separate continuously wrapped workpieces in the butt joint or to cut off workpiece end pieces.



Oscillating knife

To separate continuously wrapped workpieces exactly in the gap between two workpieces.

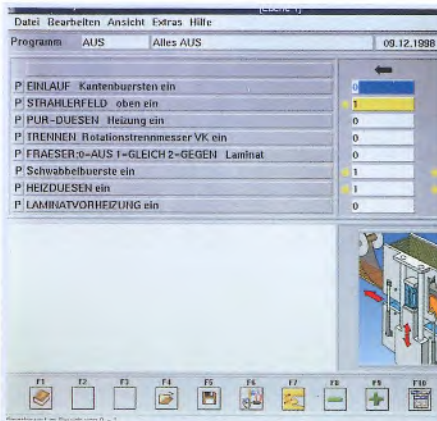


Control systems



PLC control Homatic NC 16

NC 16 is an especially low-priced standard control. Ex factory it is equipped with three basic programmes. So a large portion of all required machining is already stored. Furthermore you can enter more processing programmes according to your individual demands. A modem remote error diagnosis can be integrated.



NC control Homatic NC 21, computer-based

It controls a machine and in addition two transport stations in the same line. Programming during production increases machine availability. With large storage capacity to secure the user know-how, Teach-in, offset and contact plan diagnostics. Network port Ethernet, operator guide system and remote diagnostics can be integrated.



PLC control SÜTRON TP 22

This control is a favourably priced alternative to the NC control NC 21. Control functions are activated directly on the touch-screen terminal. Machine operating states are graphically displayed. Diagnostics functions are managed and logged in sub-programmes.

A modem remote error diagnostics can be integrated.



Control EASY-Control

Control with multifunction display. Standard control for OPTIMAT machines. Simple data entry and display forms admit a central supervision of the most important machine functions.

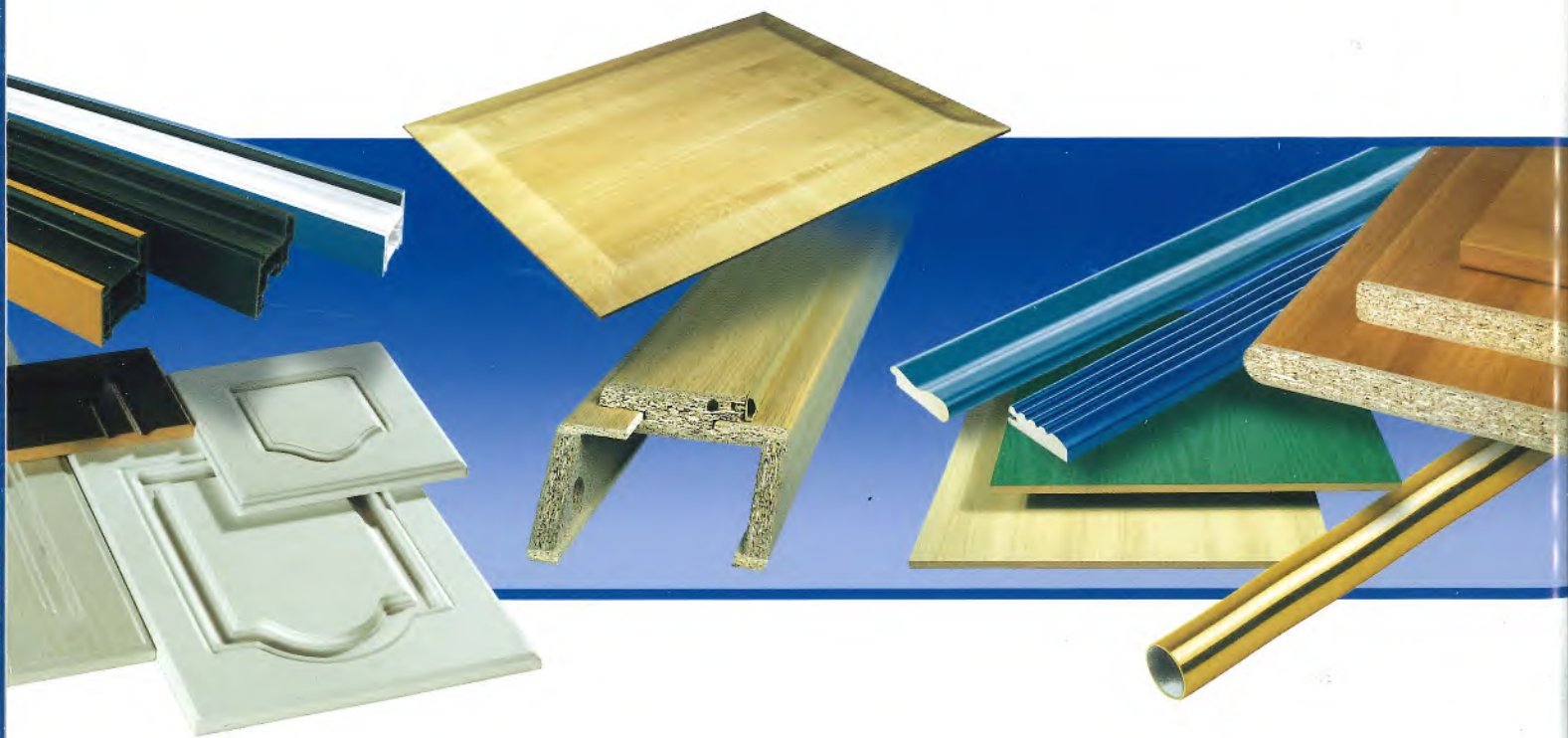
Innovation ...with competence

Profile wrapping
Surface laminating
Membrane pressing

We have the right surface technology for you - from the standard machine to the product specific production line.

Machines with highest availability and economy, individually adapted to your demands.

Your partner in surface lamination



A company of the Homag-Group



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