

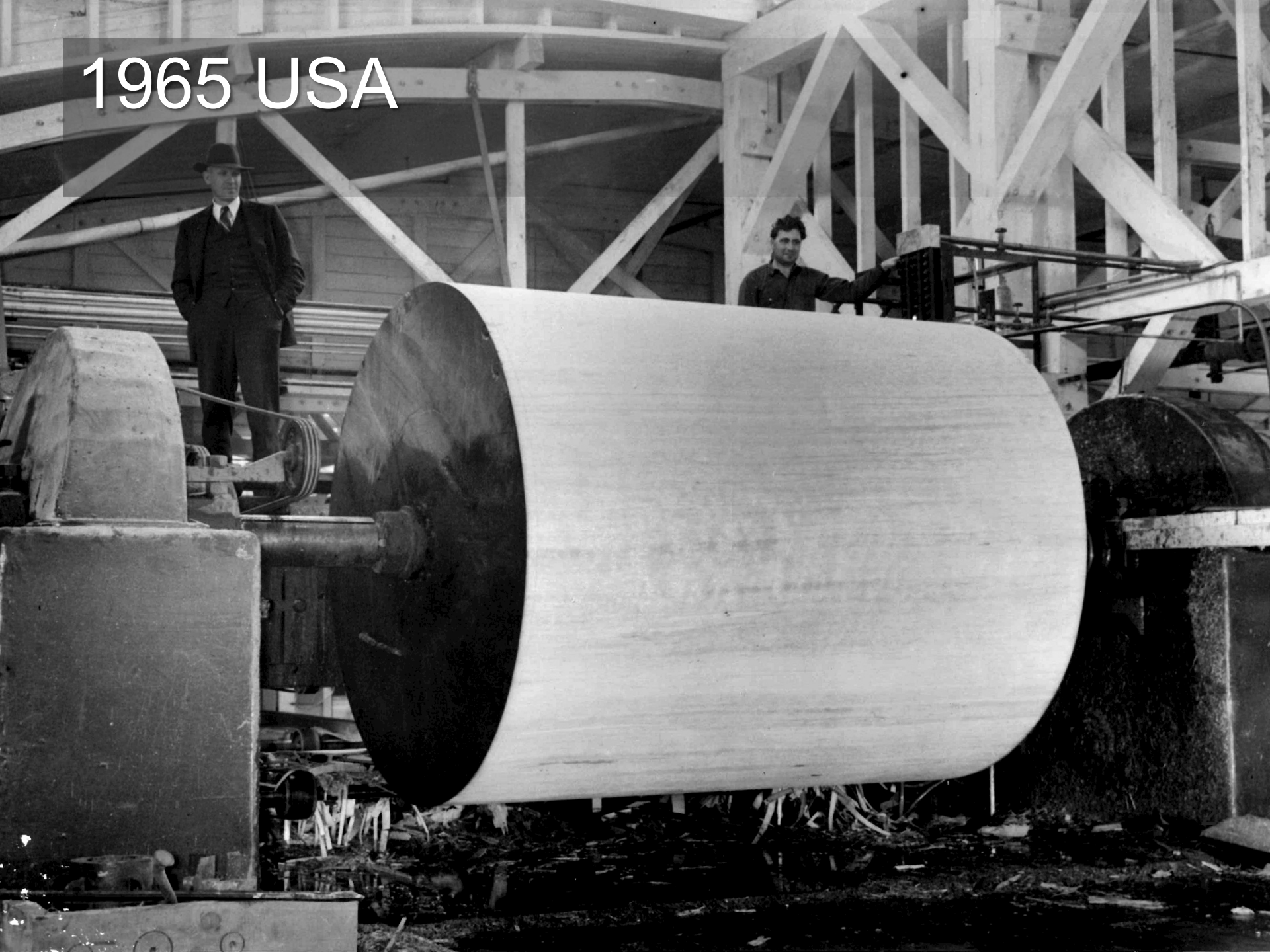
New Veneer Lathe and Drying Technologies

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PELICE

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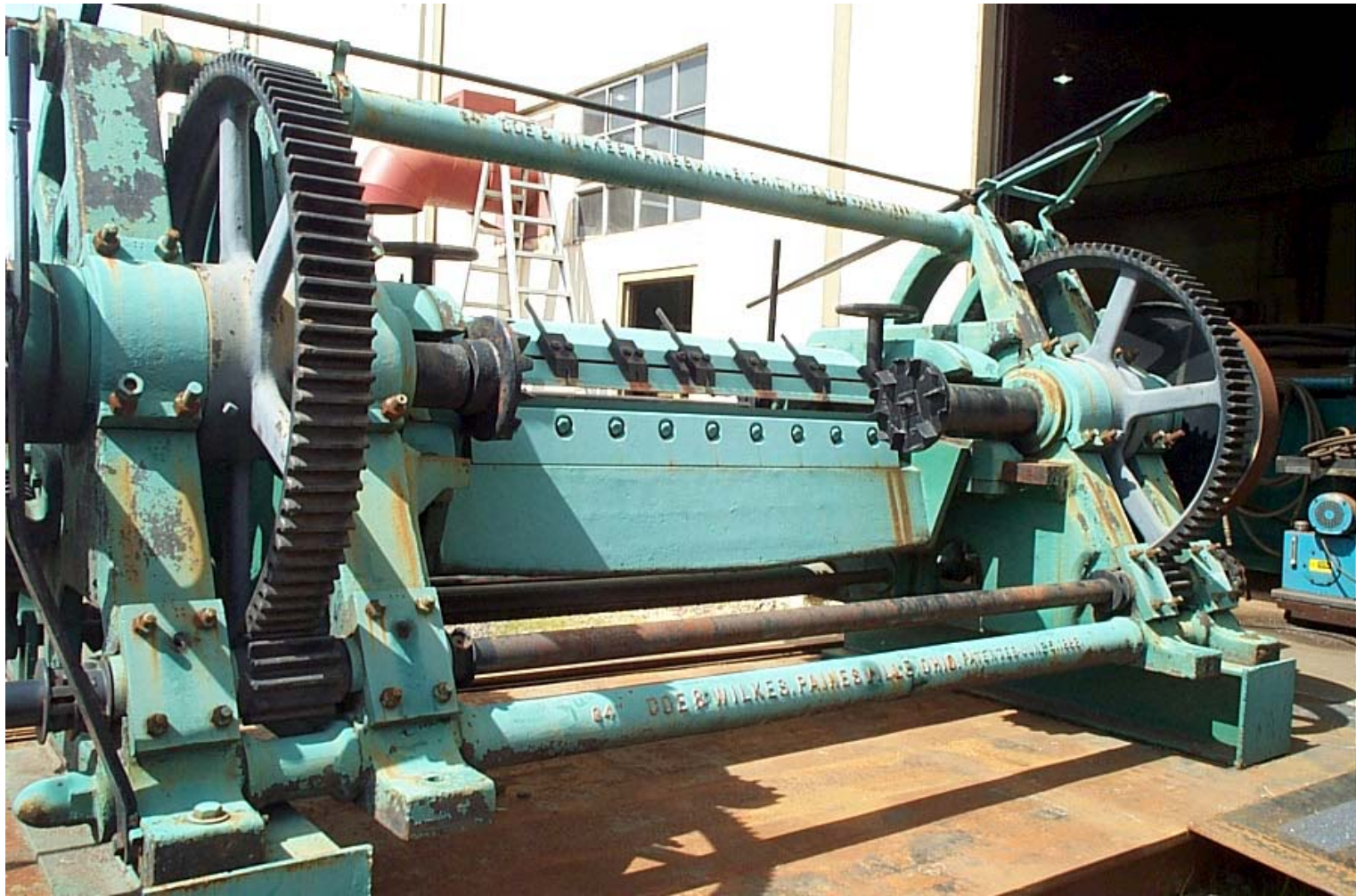
1965 USA



2015 RUSSIA



Mechanical Lathe



New Lathe Technologies Today

- Average age high-production lathe, 45 years
- Average block diameter nominally, 12"
- Average core diameter, 4"
- Average 8-hour shift production, 3,500 blocks

Both Mechanical and Optimized Lathes Require

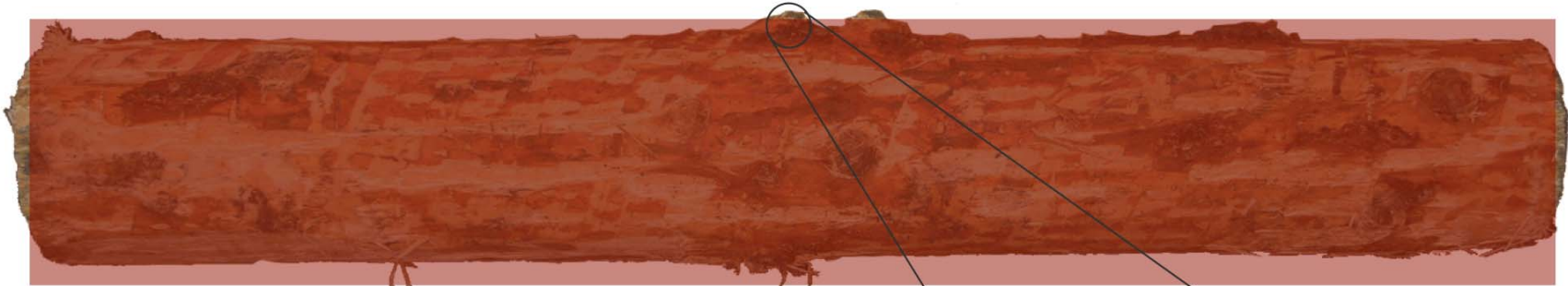
- Precise knife grind
- Perfect placement of knife tip relative to cutting surface
- Uniform block conditioning

Without precise knife grind, perfect placement of knife tip and uniform block conditioning, both mechanical and optimized lathes fail to meet their recovery and production potential

Optimized Lathe

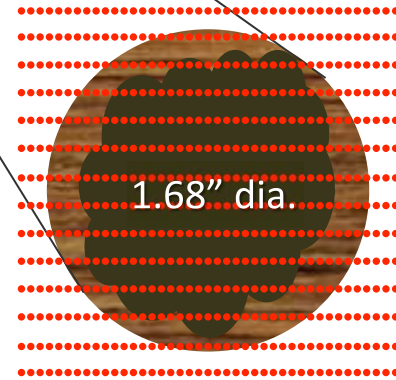
- Is first a sound mechanical lathe with the added capacity of digital scanning and positioning
- Has capacity to maximize recovery from each individual block
- Effectively imparts torque to block without damaging veneer surface
- Twice as productive of a mechanical lathe
- Achieves small core diameter

Optimized Profile Scan Systems



Profile Scanning

- Resolution 0.05" x 0.14"
 - Less than 10" Diameter
- 491,520 data points per block
- Accurate 3-dimensional profile



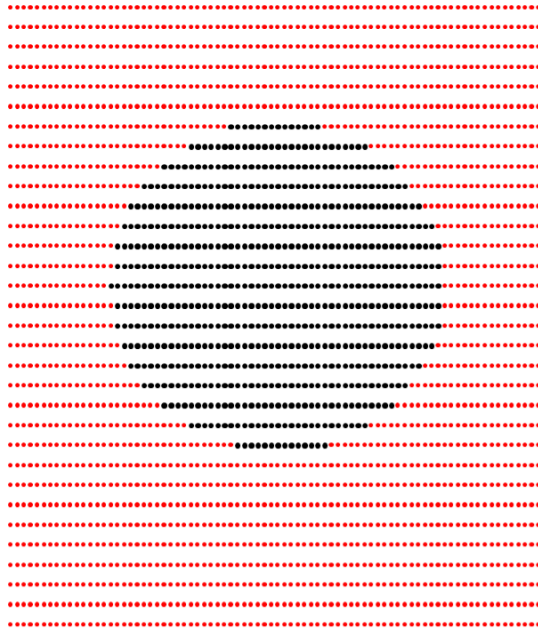
Recovery Optimization



An accurate profile allows BlockPLUS to calculate:

- The optimum cylinder for maximum veneer recover;
- Optimum recovery of random and fishtail;
- Optimum knife entry;
- Block irregularities for the shortest carriage retract cycle time.

Profile Scanning



Data points in object > 700

Min. possible area 4.79 sq. in.

Max. possible area 5.16 sq. in.

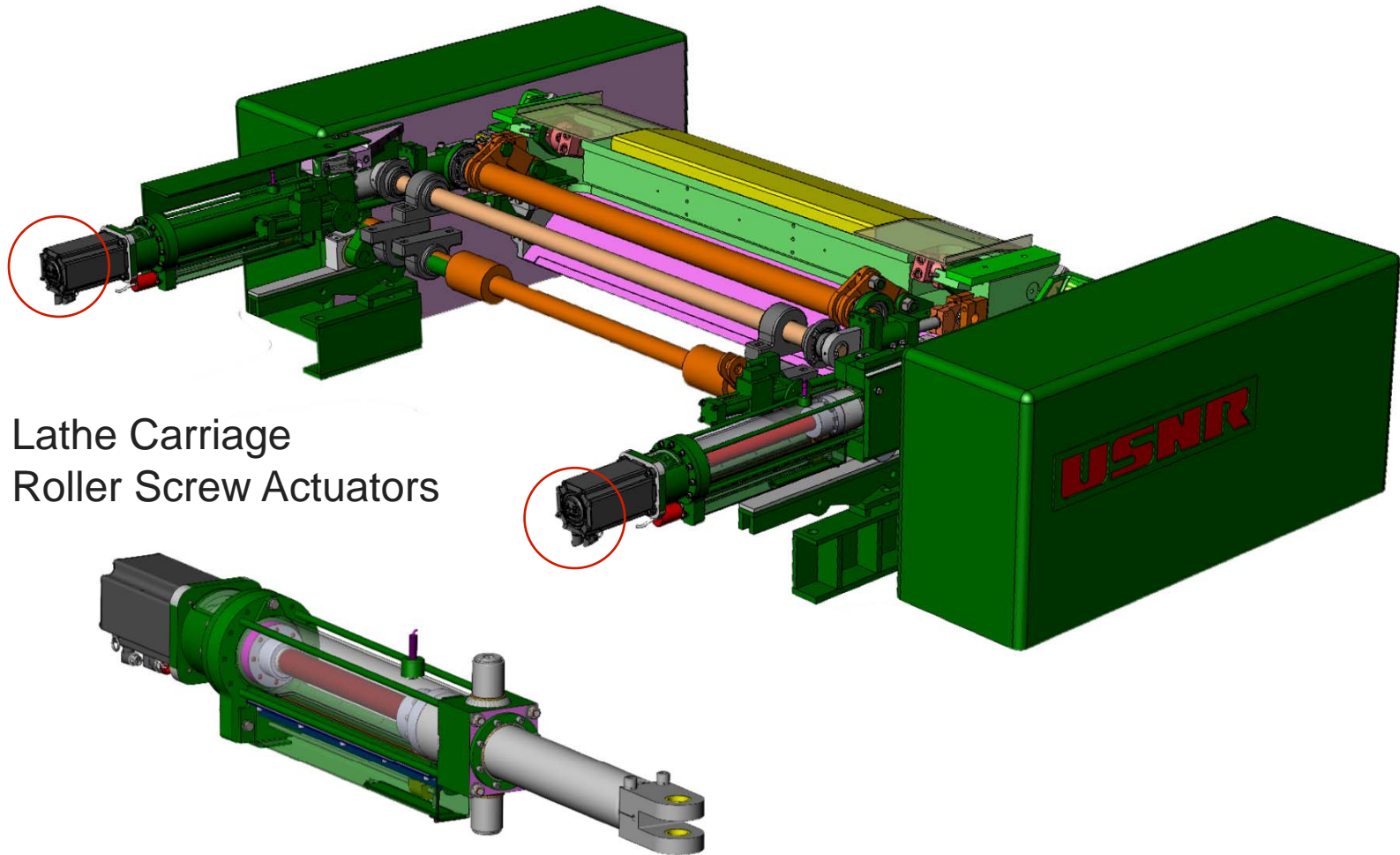
USNR

- - 0.050" Length
- - 0.100" Circumference over 10" diameter

Optimized Lathe Recovery

- Precisely profiles block shape
- Allows positioning of block to lathe spin axis to achieve largest available cylinder
- Maximize recovery of FT & Random
- Precisely positions knife in retract to minimize wasted motion of carriage – dead time

Roller Screw Actuators



Lathe Carriage
Roller Screw Actuators

Roller Screw Actuator

- No Slave/Master – Virtual Master
- 55mm roller screw elements provide large load surface increasing longevity
- Direct coupled motor and planetary screw eliminates any potential for loss of precision and reduced maintenance cost
- Safe – redundant Temposonics prevent skew damage and allows effective reporting of knife relocation immediately following power interruption planned or unplanned

Roller Screw Actuator for Veneer Lathes

- Provide near zero backlash or slack in the mechanical positioner
- Will not compress under unusual G force loading
- Does not require complex support system of valves, pumps and filters

Optimized Lathe Performance Today

1. Highest possible recovery
2. Most production volume
3. Highest Quality Veneer

Tomorrow to 2020

- As scanners improve so will density profiles
Higher Recovery
- As electronics improve there will be less and more durable components
Less Maintenance Cost
- As roller screw actuators replace hydraulic cylinders there will be better positioning
Higher Value Veneer
- As positioning improves, things move more securely and rapidly
More Production

New Veneer Dryer Technologies

- Roll-in Veneer Dryer
- ADEC & Balanced Cooling
- 6 Deck Jet Drying Technology

Roll-in Veneer Dryer Installation

- Problem: Affordably replace old veneer dryer with new dryer
- Issue: Outage Cost
- Solution: Erect new dryer while allowing old dryer to continue operating
- Result: Reduce outage cost from 17 to 3 weeks

Roll-in Veneer Dryer Installation



Other Benefits

- Time outage to market low
- Save new building and land costs
- Reduce erection costs, single shift crew, no overtime
- No expediting costs
- Opportunity to delay outage if market suddenly improves
- Better ability to plan successive dryer replacements

ADEC – Automatic Dryer Exhaust Control & Balanced Cooling

- Veneer Dryers do two things:
 1. Convey Veneer
 2. Remove water from the Veneer

ADEC – The Perfect Veneer Dryer

No Exhausts
Stacks



Wet veneer in

Dry veneer out

ADEC – Evaporate Water



Evaporate 4200
gallons/hour
or
8.3 hot tubs

ADEC - Components

- Wet End Seal
- Balanced Cooling
- Single Modulating Exhaust Port

ADEC – Wet End Seal

- Wet End Seal is a mixing chamber where a controlled leak of hot dryer gasses are blended with cool plant air;
- The blended temperature of the gasses are continuously monitored;
- As the blended gas temperature rises the dryer exhaust volume is increased, as the blended temperature falls exhaust volume is decreased.

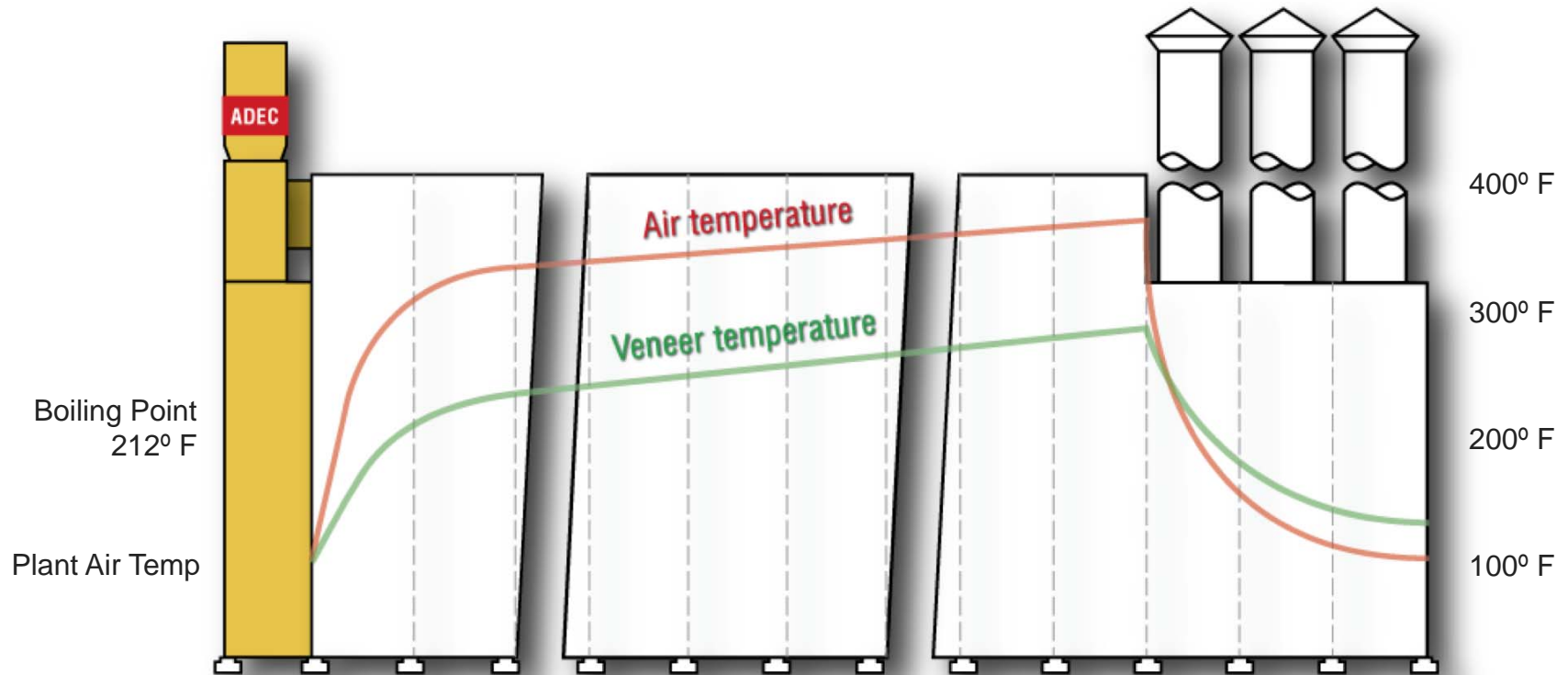
Balanced Cooling

- Balanced Cooling is a modulating pressure barrier that enhances the mechanical seal between the last heated and first cooling section;
- Pressure sensors are located on both sides of the mechanical seal;
- The combination of sealing damper and modulating fan in the first cooling section increases or decreases pressure in the first cooling section to match the internal pressure of the last heated section.

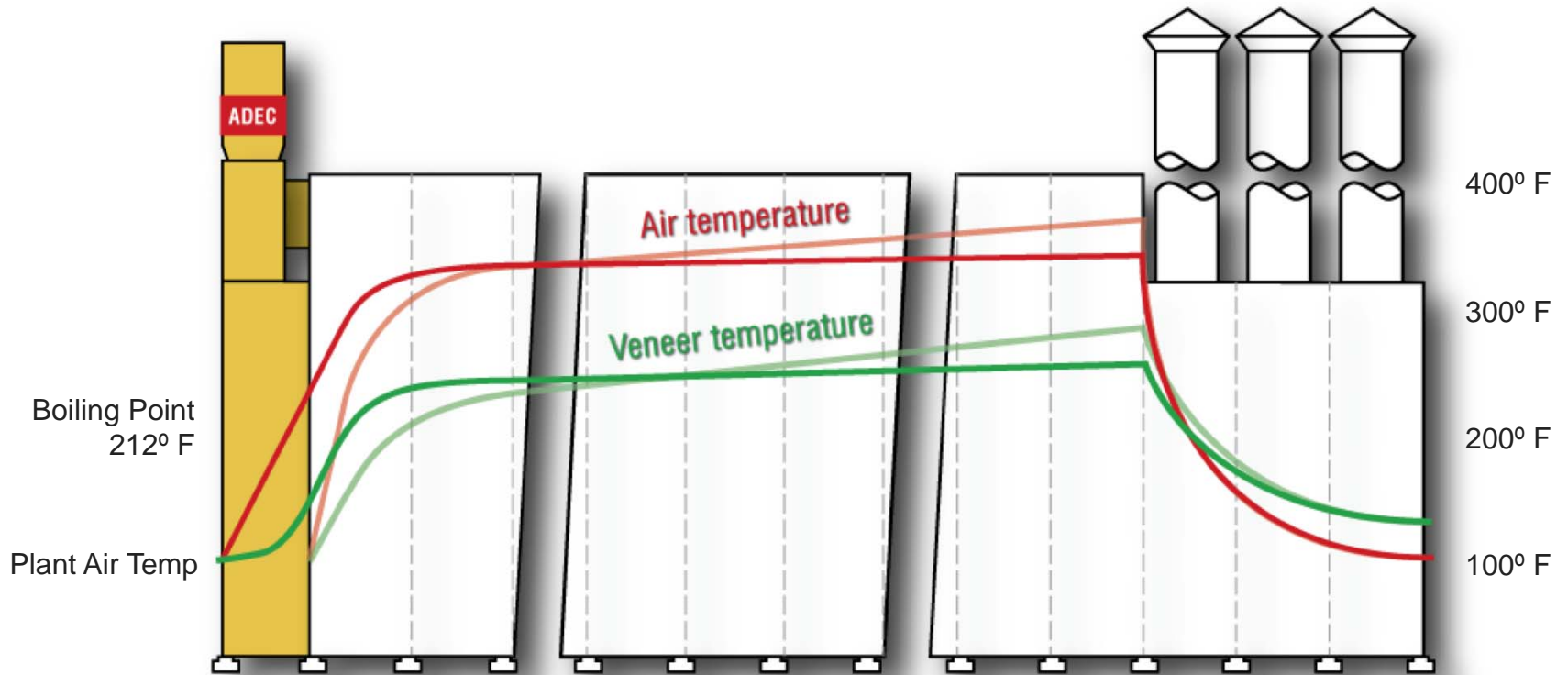
ADEC – Single Modulating Exhaust Port

- Convenient one-point connection to plant exhaust control system;
- Vents dryer exhaust at the lowest temperature and highest moisture content – minimizes loss of sensible thermal energy;
- Exhaust port continuously modulates and is easy to maintain;
- Has independent capacity to elevate temperature of dryer exhaust after exiting from dryer.

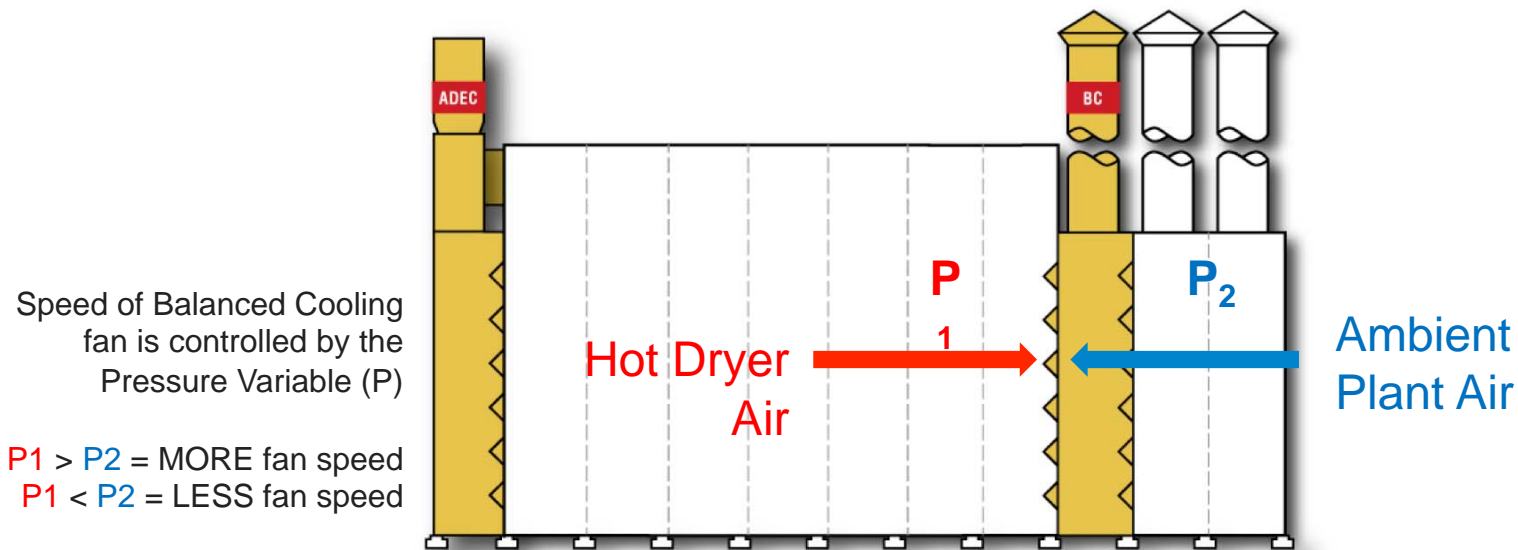
Before ADEC & Balanced Cooling



ADEC



Balanced Cooling – How It Works



ADEC & Balanced Cooling - Benefits



- Higher Quality Veneer
- Greater Productivity
- Reduced Thermal Energy Required
- Reduced Exhaust Volume

6 Deck High Capacity Jet Dryer



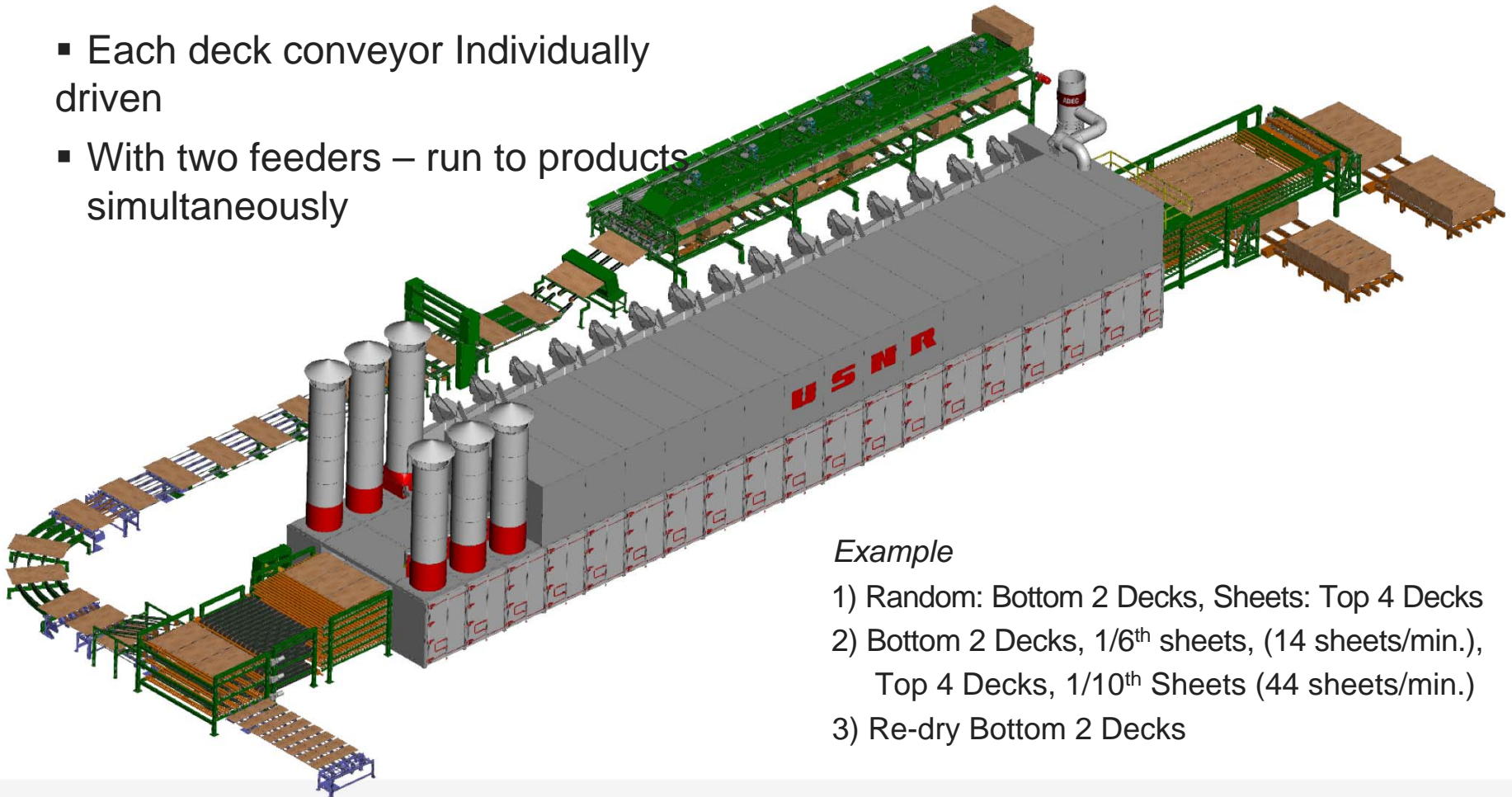
- Can be high capacity dryer exclusively processing high moisture thick veneers
- Can also be versatile dryer processing two separate products simultaneously

6 Deck High Capacity Jet Dryer

- 45 sheets/min. – 1/6 SYP – Avg. MC/110%
- Weighted average dryer temperature less than 400° F
- 50 sheets/min. – 1/7 SYP
- 58 sheets/min. – 1/8 SYP
- 69 sheets/min. – 1/10 SYP

6 Deck High Capacity Jet Dryer

- Each deck conveyor Individually driven
- With two feeders – run to products simultaneously



Example

- 1) Random: Bottom 2 Decks, Sheets: Top 4 Decks
- 2) Bottom 2 Decks, 1/6th sheets, (14 sheets/min.),
Top 4 Decks, 1/10th Sheets (44 sheets/min.)
- 3) Re-dry Bottom 2 Decks

6 Deck High Capacity Jet Dryer HMI Screen

