

THE ENDEAVOR SYSTEM

A New Era of Commercial Door Machining

Combining flexibility, control, precision, and speed, the Endeavor System is the most advanced commercial door machining center that Kval has ever produced.

Unmatched Speed - More Efficient in Every Way

The door to door cycle time of the Endeavor is unmatched. A typical 3 or 4 hinge door with commercial cylinder lock is 43 seconds including corner squaring and pre-drilling. Doors with deep mortise or card locks can be completed in 65 seconds.

The modular, multi-station, in-line approach of the Endeavor System allows for reduced cycle times and increased capability due to specialized machining centers working on multiple doors at one time. Add the machines you need to complete your work.

Unmatched Flexibility – It does what you need it to do

The modular Endeavor System completes machining for all kinds of commercial hardware. Combine machines to complete the processes you need for your product. Hardware detailing on all 6 surfaces of the door is possible as well as light cut-out. The Endeavor System can be configured to do what you need it to do.

Unmatched Control - Harnessing the Power of KvalCAM®

Using our patented KvalCAM® software and Beckhoff motion control components, the Endeavor System can be run from one control console. KvalCAM® sends the necessary instructions to each machine and tracks the door through the line. Programs can be created off-line and sent to the Endeavor System or created on-the-fly using API technology. Bar-code or RFID door identification is available and recommended. The Endeavor System is a highly automated and high capacity commercial door machining center.

Door-to-Door Benchmarks

- Cylinder Lock and Square Hinges: 43 Seconds
- Mortise Lock, Function Holes, Hinges: 65 Seconds
- Card Lock, Viewer, and Square Hinges: 70 Seconds

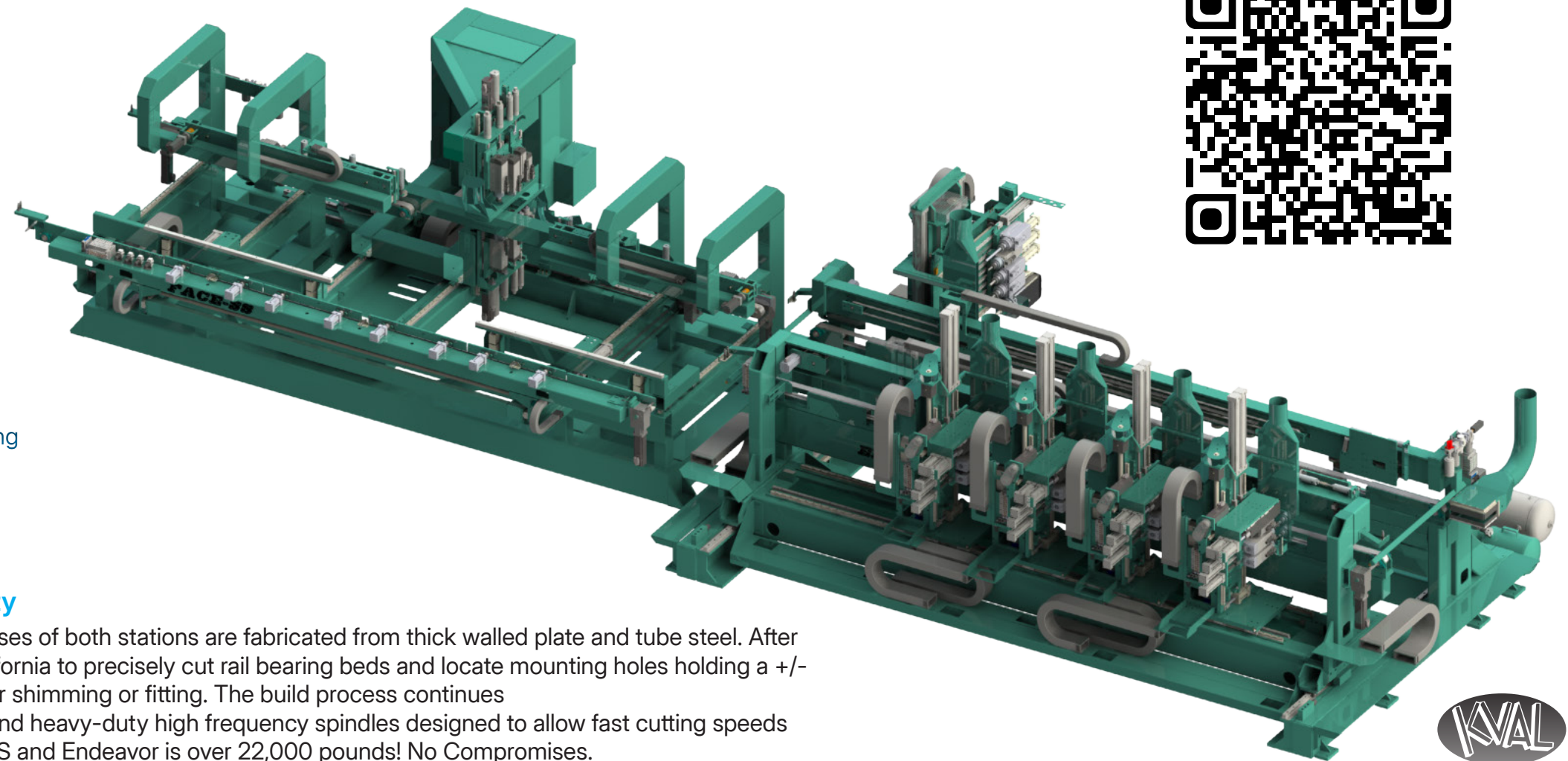
An Option for Anything

- Vision Feeder, Stacker, and Inspection Stations
- Face SS for lock bores, function holes, or viewers
- Endeavor Edge Prep Machine for hinge and lock edges
- DL-NCX Light Cut-out Machine with automatic corner chopping
- Edge SS for machining on the top or bottom ends of the door

Unmatched Precision - Legendary Kval Design and Quality

Mechanically, these industrial grade machines are built to last! The bases of both stations are fabricated from thick walled plate and tube steel. After fabrication, the bases are shipped to a specialist firm in Southern California to precisely cut rail bearing beds and locate mounting holes holding a +/- 0.001" tolerance. Bearings rails are then mounted without any need for shimming or fitting. The build process continues with accurately machined components, precision oversize bearings, and heavy-duty high frequency spindles designed to allow fast cutting speeds without flex or vibration. The combined shipping weight of the Face SS and Endeavor is over 22,000 pounds! No Compromises.

See it in Action!

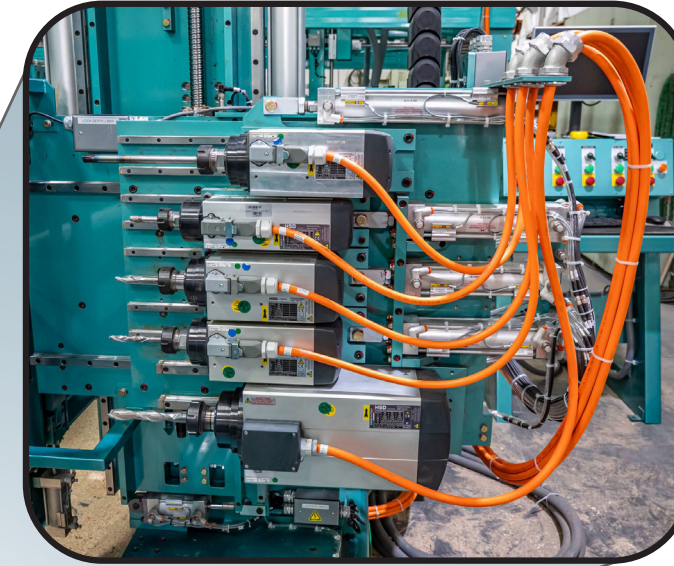


Single Console

The Endeavor is controlled with a single Beckhoff industrial computer for seamless operation of both detailing stations. Doors in each station can be unique. Barcode or RFID processing is highly

Lock Stile Detailing Tower

- 12 HP Deep mortise router and latch boring
- 7.5 HP Deep mortise router for up to 7-1/2" deep (optional)
- 7.5 HP CW rotating router for latch plates
- 7.5 HP CCW rotating router for latch plates
- 3 HP CW rotating router for shallow latch plates
- Automatic door measuring
- 0 or 3 degree pivot on 5" Timken bearings
- Automatic corner squaring chisels.



Feed and Clamping System

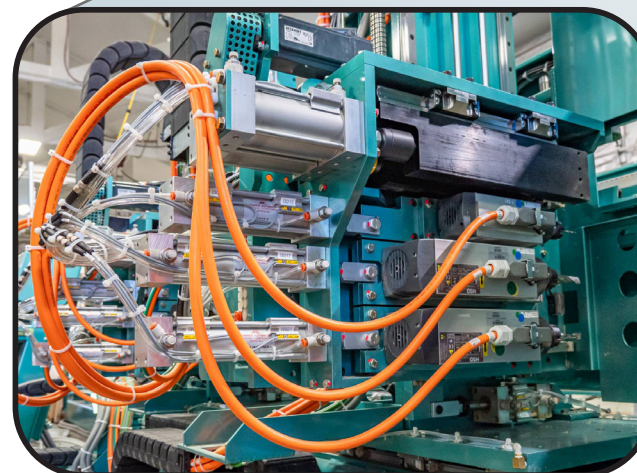
Heavy-duty geared feed belt driven with servo motors for positive and reliable feeding are used. After clamping, each door is digitally measured with six probes to confirm exact size and position.

Door Feeder



Face SS Door Face Tower

- Top and bottom matched routers & drills simultaneously process door from both sides for clean cuts and non-symmetrical lock function holes.
- Four 3HP Spindle Routers (two on top, two on bottom)
- Four 2HP 23,000 Spindle Drills (two on top, two on bottom)
- Routs up to 32" from lock edge and can complete most locks and viewers in one clamping.



Hinge Stile Detailing Heads X4

- 3 HP CW Rotating Spindle for hinge mortising
- 3 HP CCW Routing Spindle for relief cuts to prevent veneer blow-out
- 2HP 23,000 RPM Spindle for pre-drilling
- Automatic door measuring
- 0 or 3 degree Pivot on 5" Timken Bearings
- Automatic corner squaring chisels

Door Stacker



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