LaserSharp® MATRIX

## PRODUCTION CLASS MODULAR LASER FINISHING SYSTEM

Versatile, scalable laser cutting solution custom engineered for your application.

The MATRIX system is designed and built by LasX Industries and Aztech Converting Systems.

The MATRIX laser finishing system is a scalable, roll-to-roll system with a wide range of in-line processing features including laser processing, coating, printing, laminating, die cutting, slitting and duplex winding. MATRIX has been specifically designed as an affordable solution to expand production capabilities based on client needs.

Start with a base system and add modular finishing stations as needed. MATRIX delivers the best combination of technology, versatility, expandability and overall value of any roll-fed laser processing machine on the market today.
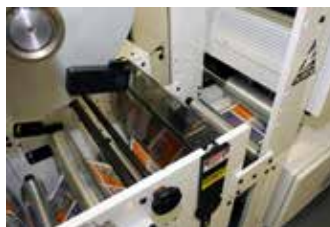
Optional lamination module

Optional vision registration system

Base MATRIX System

A Unwind
- 40" (1016mm) maximum roll diameter
- 3" (76mm) diameter pneumatically-inflatable cantilevered spindle
- Dancer controlled brake adjusts web tension

B Splice Table
- Two pneumatically inflatable web clamps
- Angled razor/knife splice slot

C Web Guide
- Accuweb electronic web guide
- 2-roll pivot system
- Ultrasonic edge sensor

D Infeed Nip
- Servo-driven pull roller
- Pneumatically loaded, rubber-covered nip roller

E Laser
- 400W production class laser
- Low maintenance CO_2 laser
- High speed beam steering system
- LightGuide® software
- Print register sensor
- Kiss-cutting work support

F Waste Rewind
- 26" (660mm) maximum roll diameter
- 3" (76mm) diameter, pneumatically-inflatable, cantilevered spindle

G Outfeed Nip
- Servo-driven pull roller
        Pneumatically loaded, rubber-covered nip roller

H Rewind
- 26" (660mm) maximum roll diameter
- 3" (76mm) diameter pneumatically-inflatable, cantilevered spindle
- 1.3kW servo drive motor with electronic controller
        Rewind is bi-directional for either over or under winding of finished rolls

MATRIX System Options

I Flexographic Printer/Coater
- Servo-driven, flexo station for applying aqueous, solvent and UV inks and coatings
- Metering roller, 1 ceramic anilox roller, 1 tint roller and 1 impression roller
- Adjustable doctor blade
- Choice of 1/8 CP spur or helical gears
- Forced hot air dryer with adjustable temperature control

J UV Curing System
- GEW model E2C high output, low energy system
- Optical reflectors with air cooling for heat-sensitive substrates
- Cassette system with quick change lamps
- Operator touch screen showing lamp curing modes

K Top-Side Unwind
- For applying a protective film to the top-side of web
- 18" (457mm) maximum roll diameter unwind
- 3" (76mm) diameter, pneumatically-inflatable, cantilevered spindle
- Pneumatically-controlled brake for adjusting web tension

L Laminator
- Non-driven laminating roller
- Pneumatically loaded, rubber-covered nip roller

M Underscore Station
- Adjustable underscore unit with 2 blade holders
- Manual lateral adjustment
- Cut depth control for precision edge trim

Full Featured MATRIX System:
Available in 10" (255mm), 13" (330mm), 18" (457mm) or 20" (508mm) widths

N Rotary Die Cutting Module
- Fully-supported rotary die cutting station for kiss-cutting, perforating or sheet cutting
- Steel support roller and hardened anvil roller with 1/8 CP gear (English) or 1/22 DP gear (Metric)
- Set of bearing blocks with customer choice of bearing I.D.
- Truck and bridge assembly for holding die in place
- 18" (457mm) maximum die repeat, can be expanded to 24" (609mm) repeat

O Slitting Station

- Ability to slit utilizing interchangeable tooling
- Quick-change, removable modules
- Available tooling options: rotary shear, razor cut, or crush cut with anvil roll

P 2nd Rewind Station

- Converts the single spindle rewind into a duplex (2-spindle) rewind system
- Addition of one 26" (660mm) maximum roll diameter
- Addition of one 3" (76mm) diameter, pneumatically-inflatable, cantilevered spindle
- Addition of one 1.3kW servo drive motor with electronic controller
- Independent rewind control to operate spindles separately or in tandem
- Rewinds are bi-directional for either over or under winding of finished rolls

Additional Converting Options

- 4-color digital printer
- Cold foil and hot foil stamping
- Web cleaning system
- Corona treating system
- Duplex (2-spindle) unwind
- Bottom side unwind/laminator
- 40" (1016mm) diameter rewind
- Static removal system
- Shingle or outfeed conveyor
- Bottom stacker
- 2nd rotary die cutter

Additional Laser Options

- Vision registration
- TracSoft™ - follows a printed line or web edge
- Through-cutting work support; includes drop box and automated blast gate
- 2nd additional laser
- Laser options: 150W, 250W
- Optional laser wavelengths are available for plastics and thin metallic foils
- Laser process area: 6.7" (170mm), 10.6" (270mm), 13.8" (350mm), 19.7" (500mm)
- FLEX option:
    Automatic auto-focus adjustment between two process areas 5.5" (140mm) to 24" (600mm) FOV
- Automatic order change via barcode reader
- LRE- LasX ripping engine for automated work flow with 2D barcodes

System Capabilities

Available Widths:	10" (255mm)
	13" (330mm)
	18" (457mm)
	20" (508mm)

Laser:

Process Types:	Through-cut, kiss-cut, perforate, score, etch, mark
Repeat Length:	Infinite
Modes of Operation:	Index, continuous, continuous with vision
File Types Supported:	.PDF, .DXF, .JPG, .GIF, .TIFF
Line Speeds:	25 to 500ft/min (8 to 152m/min)*

Roll Diameters/Cores:

Unwind:	40" (1016mm) diameter 3" (76mm) core
Laminate Unwind:	18" (457mm) diameter 3" (76mm) core
Waste Rewind:	26" (660mm) diameter 3" (76mm) core
Finished Roll Rewind:	26" (660mm) diameter 3" (76mm) core

* Actual line speed is material & process dependent

Physical Specifications

Base MATRIX Dimensions:	180" × 63" × 91" (4.6m × 1.6m × 2.3m)
Weight:	3070lbs (393kg)

Typical System Requirements

Base MATRIX:	208V, 3-phase, 55A
Compressed Air:	80-90PSI/550kPa
Clean Filtered Air Flow:	3.0ft^3/min (85L/min)
Input Filtration:	Dry and oil free; non-condensing 0.01μ, 99.999% efficiency, coalescing
Fume Exhaust Airflow :	800ft^3/min (1360m^3/hr) at 5" H$_2$0 (12millibars); 8" (200mm) diameter connection

Applications

- Labels
- Membrane switches
- Electronic circuits
- Gaskets
- Adhesive spacers
- Stencils
- Tags
- Gift boxes
- Signs
- Medical components

Material Types

Best suited for processing non-metallic materials or thin metal foils such as:

- Label stocks
- Plastics
- Polymer films
- Paper
- Textiles
- Abrasives
- Foam
- Adhesives
- Metal foils

Safety

Class I safety enclosure per 21 CFR 1040.10 meets federal safety requirements

UV Curing System:	480V, 3-phase, 20A
Servo-Controlled Flexo Station:	208V, 3-phase, 20A

Contact Information

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