

Digital Converting Machine

The fastest ZERO

Faster, fully automated packaging and display production,
Developed from an entirely new concept.



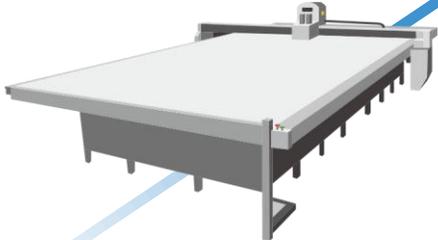
The ZERO Concept

A newly designed system based on over 20 years of experience and know-how in machine development.

Digital Converting Machine ZERO is NSK's solution to automated production-level processing in the packaging and display industry.

Until now, paper-based POS and packaging have been produced with either die presses or sample cutters. Die presses can handle 3000-7000 sheets per hour, while high-speed sample cutting tables can handle 50 sheets per hour.

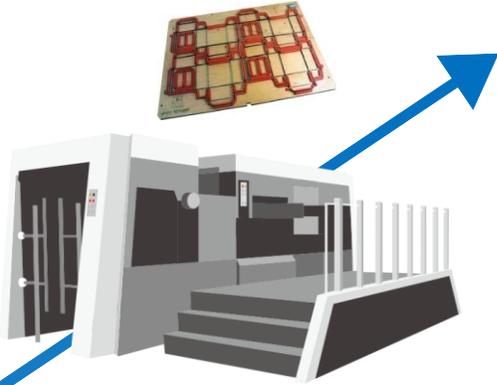
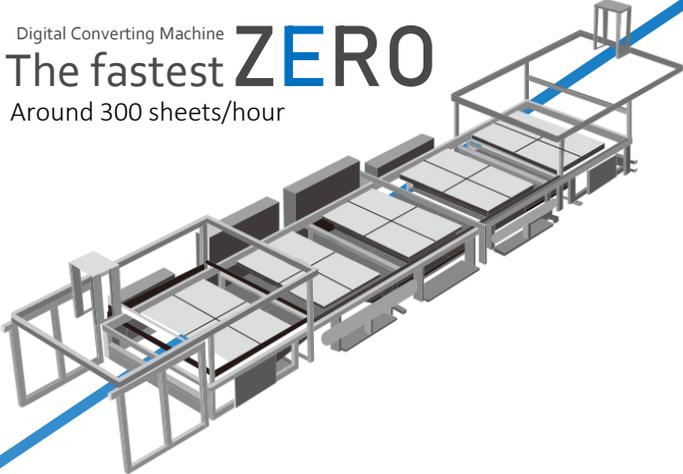
With a potential speed of up to 300 sheets per hour and continual dedication to software improvements, ZERO aims to be a faster, more efficient, and automated solution to corrugated and paperboard converting.



Sample Cutting Table Method
40-50 sheets/hour

The sample cutter struggles to keep up with most modern printers. It also requires an operator or automation options to set materials in place.

Digital Converting Machine
The fastest ZERO
Around 300 sheets/hour



Automatic Die Press Method
3000-7000 sheets/hour

Die Presses require expensive die boards to be made and manually inserted into the machine, costing time and money. Storage for die boards also must be considered.

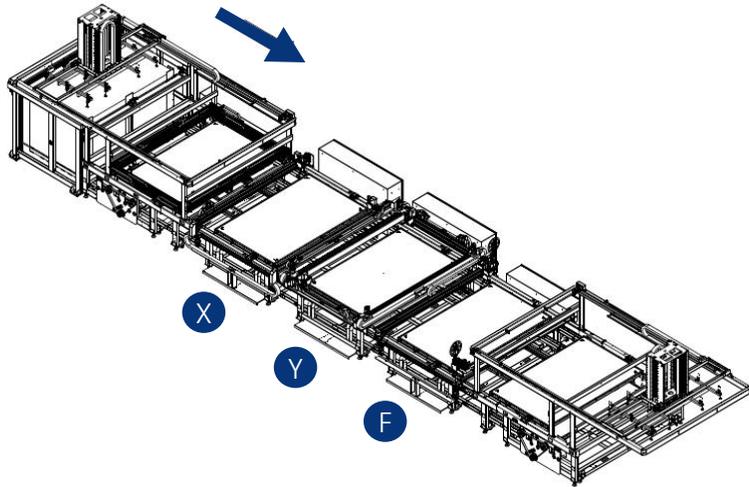
The ZERO Concept

Multi-Stage Inline Processing, Designed for Productivity.

Most packaging and display products are designed and processed with more than 80% of the lines on the X and Y axes.

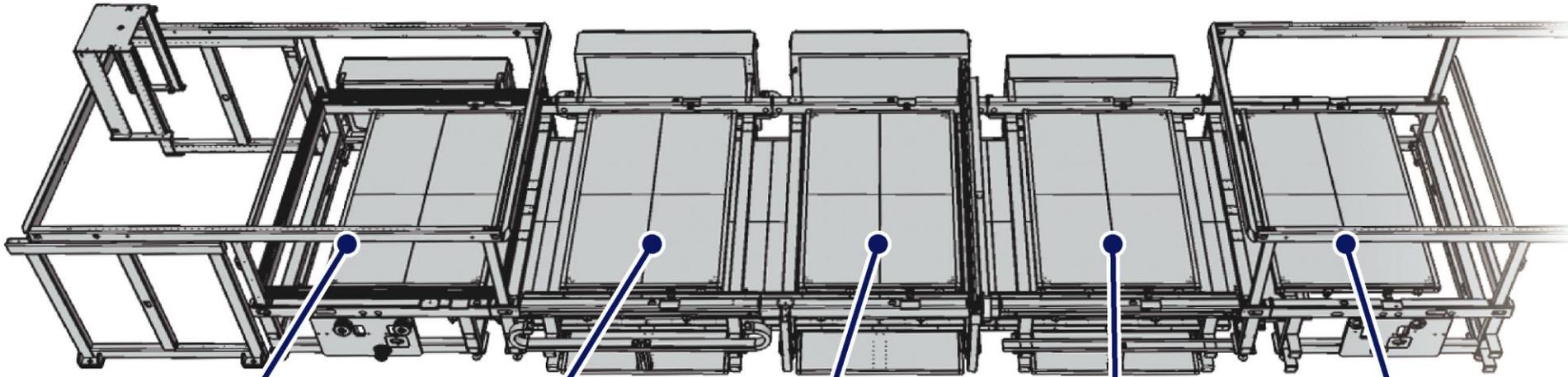
ZERO's triple table system focuses on this point: X and Y data are processed on dedicated stages for each axis, and the final 20% is processed on a special Free-Cutting stage for finishing.

All three stages process sheets simultaneously in a single machine to increase production speed dramatically.



ZERO Processing

The Triple Table System: A New Concept Taking Shape.
Faster, Automated Processing Made Possible.



1 Loading Unit

After setting a pallet on the loading unit, the pickup arm moves the sheet to a shuttle table, to be cut according to the print position.



2 X Stage

The X-Axis data is processed with multiple knife and crease tools. Simultaneous multi-tool processing dramatically reduces production time.



3 Y Stage

The shuttle table stops at the Y stage and the traverses move over the sheet. The tools move up and down to process the Y-axis data.



4 Free Stage

Arcs and diagonal line data is processed at this stage. The twin arm system further increases processing speed.



5 Unloading Unit

The pickup arm brings the sheet to the stacker for unloading. The open unloading area allows for easy access with a pallet jack.

ZERO is equipped with dedicated stages for X-axis data, Y-axis data, and for free-cutting.

Each stage has multiple tools which perform cuts and creases simultaneously, which is critical to increasing production speed and saving valuable work time.

ZERO uses a shuttle table system to transport materials from stage to stage in a rotating conveyor system.

This allows ZERO to run in a seamless, automatic cycle throughout the entire job.

ZERO Multi-Stage Design

Each Stage Handles A Part of the Process,
All Without an Operator.

80% or more of processing data for packaging is on the X or Y axis.
For this reason, ZERO was designed with dedicated processing stages.

The X-Axis stage and Y-Axis stage are each dedicated to one direction of processing. Each stage is equipped with multiple tools to process all of the data on one axis simultaneously.

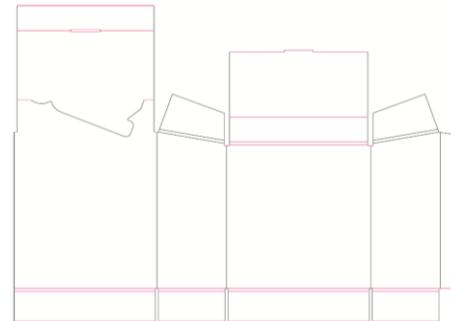
After the X and Y stages, over 80% of the processing is already finished.

The Free-Cutting stage is where diagonal lines, curves, and arcs are processed. This stage cuts and creates the final 20% of the data in the design.

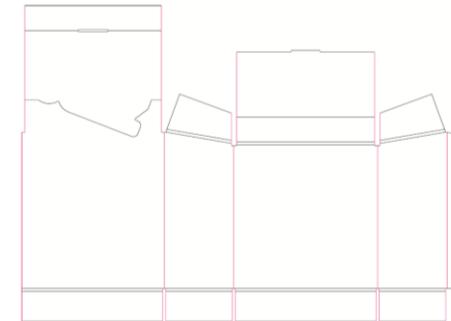
When all stages have finished, the shuttle tables move to the next stage to continue processing seamlessly.



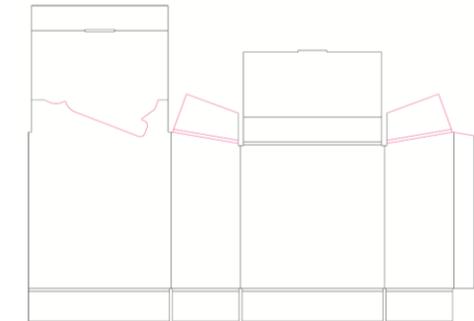
X Stage



Y Stage



Free Stage



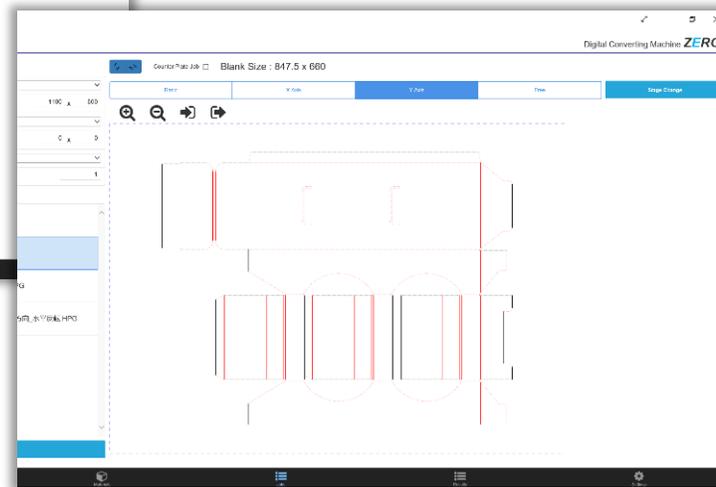
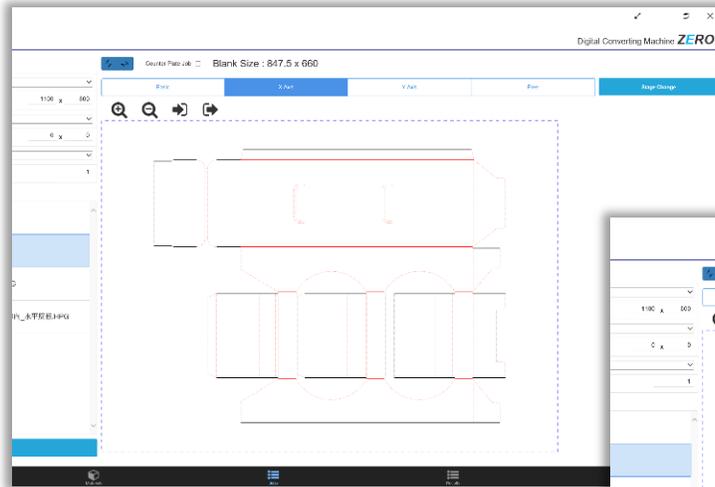
The colored lines indicate the lines processed on each stage.

The ZERO Controller

Operate ZERO from a PC or Tablet.
Intuitive and Flexible.

ZERO is operated through the ZERO Controller Interface. Data is read from CAD and output along with each table's information for X, Y, and Free stage processing. It is compatible with various file formats, ensuring that ZERO will work properly with your data.

ZERO can be operated with a tablet through an intuitive drag-and-drop touch interface, or conventionally through a PC.

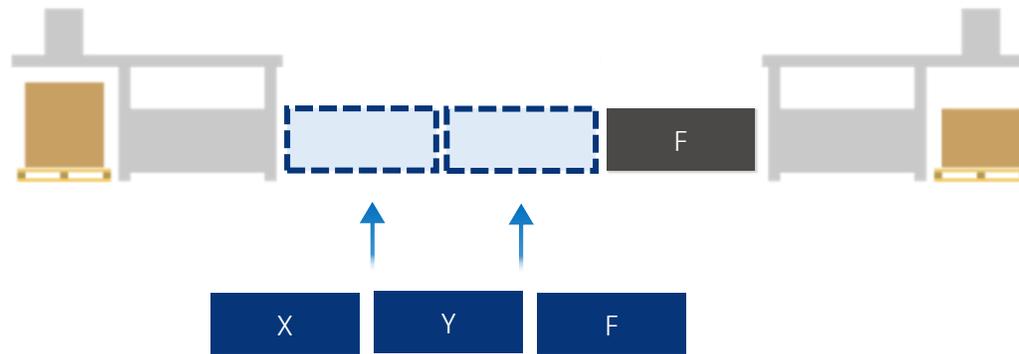


Processing lines can be moved between stages easily, allowing the user to speed up processing with their own stage processing selections.

ZERO Stage Arrangements

Rearrange the Processing Stages for Your Business.
Any Arrangement for Any Application.

ZERO can be manufactured with stages added or removed thanks to its multi-stage design. This means more options for any business to incorporate the right ZERO into their processing operation.



Free-Stage-Only Systems

Models of ZERO with only Free stages are possible for handling intricate designs with few X or Y axis lines.

ZERO F



ZERO FF



ZERO FFF



High-Speed Multi-Processing Systems

Free Stages can be added to XYF ZERO designs for situations where data typically contains more arcs and diagonal lines.

ZERO XYF



ZERO XYFF



ZERO Options

**Endless Customization Options:
Build the Perfect ZERO for Any Business.**

Table Size

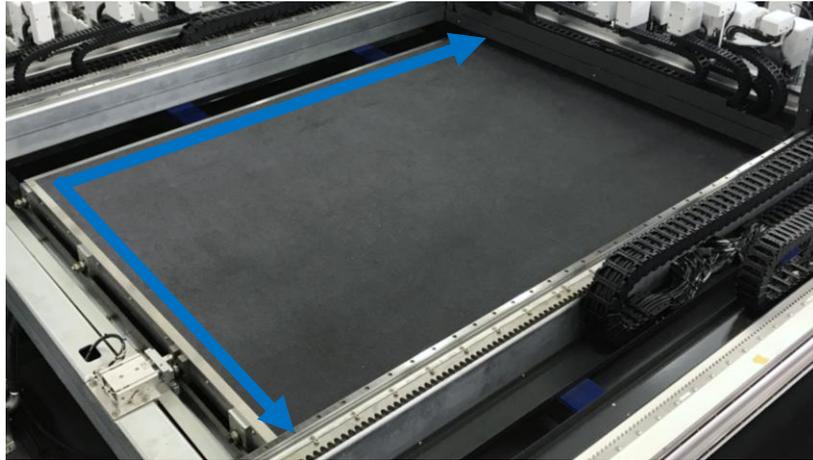
In addition to the selection of standard table sizes, the table size and working size for materials can be built to any size requirements.

Standard Sizes

800 x 1000 2200 x 1400 2600 x 1600

Custom Dimensions

ZERO can accommodate any work size.
Please consult NSK regarding your specific needs.



Every ZERO machine is made on order to ensure that every customer gets a machine that is right for their processing operation. From tools to table size, any part of the machine can be customized as options.

Tooling

The number of tool heads can be selected for each stage, and each head's specific tooling can be customized for optimum performance.

Tooling Options

Reciprocating Knife
Crease
Perforation

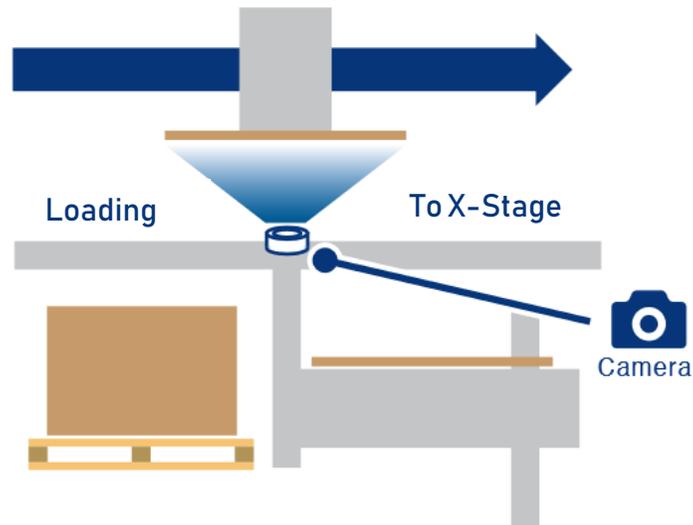
Drag Knife
Double Crease
Pen Tool



ZERO Options

ZERO Camera System

ZERO's camera system uses two cameras at the loading stage to instantly read bar codes and registration marks from a distance.



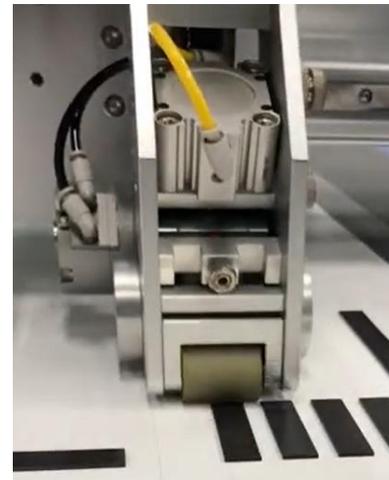
The cameras read upwards so marks can be read with the sheet face down. This system allows ZERO to crease and cut printed materials without having to change the orientation of the board.

Free-Stage Taping Units

ZERO is the only processing system to include taping units on the same machine, allowing for seamless POP and POS display production.

The taping units are mounted onto the Free Stage and allow for precise tape application in any direction.

- Taping Units**
- Magnet Tape
 - Double-Sided Tape
 - Velcro Tape



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ZERO Will Continue to Be Enhanced. The Fastest and Getting Faster...