FEATURES ON ASDA-A2

Contents

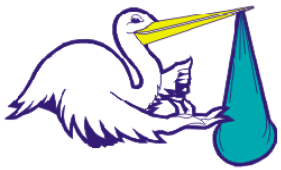
The whole Series

Features of A2

Successful Stories

The History We Write

The first step and the consequential steps.



Born

2004

ASDA-A

Developing

2006

ASDA-B

Advancing

2007

ASDA-AB

Maturing

2008

ASDA-A+

Performing

2009

ASDA-A2

2010

ASDA-B2

Product Hierarchical

Responsive Ability

ASDA-A2
1280000 p/rev
(20 bit)
1000Hz
100 w ~ 7.5 kw

ASDA-B2
160000 p/ rev
(17 bit)
550Hz
100 w ~ 3 kw

ASDA-A+
1280000 p/rev
(17/20 bit)
550Hz
4.5 kw ~ 7.5 kw

ASDA-A
10000 p/rev
450Hz
100 w ~ 3 kw

ASDA-AB
10000 p/rev
450Hz
100 w ~ 2 kw

ASDA-B
10000 p/rev
250Hz
100 w ~ 2 kw

Encoder Resolution

The Whole Series

Feature	ASDA-B	ASDA-AB	ASDA-A+	ASDA-A2	ASDA-B2
Power(220V)	1/3 Φ (<=1.5kw) 3Φ(2kw)	1/3 Φ (<=1.5kw) 3Φ(2~3kw)	3Φ(4.5~7.5kw)	1/3 Φ (<=1.5kw) 3Φ(2~5.5kw)	1/3 Φ (<=1.5kw) 3Φ(2~3kw)
Encoder Resolution	2500 x 4 PPR	2500 x 4 PPR	20 bit	20 bit	17 bit
Bandwidth	250 Hz	450 Hz	550 Hz	1000 Hz	550 Hz
Digital Input	6	8	8	15	9
Digital Output	3	5	5	5	6
Analog Input	2	2	2	2	2
Analog Output	0	2	2	2	2
Pulse Command Frequency	200K pps (O.C.) 500K pps (L. D.)	200K pps (O.C.) 500K pps (L. D.)	200K pps (O.C.) 500K pps (L. D.)	200 Kpps (O.C.) 500K/ 4M pps (L. D.)	200 Kpps (O.C.) 500K/ 4M pps (L. D.)
Communication Interface	MODBUS RS-232/485	MODBUS RS-232 RS-422/485	MODBUS RS-232 RS-422/485	USB 1.1 MODBUS RS-232/485 CANopen	MODBUS RS-232/485
PR Mode	W/O	W/T	W/T	W/T	W/O
Full-closed Control	W/O	W/O	W/O	W/T	W/O
Integrated E-Cam	W/O	W/O	W/O	W/T	W/O

The Motors

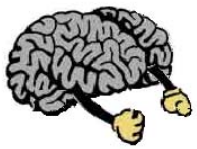
The Power Ratting
(0.1kW ~ 7.5kW already available)
(11kW, 15kW will be ready in Q2, 2011)

- **Rated torque: 0.32 N-m ~ 47.74 N-m.**
- **Maximum torque: 0.95 N-m ~ 119.36 N-m.**
- **Speed range: 1000 rpm ~ 5000 rpm.**
- **Shaft type: round shaft, and shaft with keyway.**
- **Other options: breaker, and oil seal.**

Motion Inside

Profile Command

1. **A higher level of host controller is needed.**
2. **All the motion and sequential commands come from the host controller.**



Sequential Contrl

1. **Only a lower level of host controller is enough.**
2. **The critical commands generated in the servo drive that will improve the performance for the whole system significantly.**

ASDA-A2 Main Features

High End Servo Drive
(200 v system: 100 W ~ 15 KW)
(400 v system: 750 W ~ 15 KW)
(11KW, 15 KW, Q2, 2011)

- **Full-closed control.**
- **High resolution encoder (20-bit level, 1280000 pulse/ rev) .**
- **CANopen (1M bps), DMCNET (20M bps).**
- **Extension DI (total 14 Inputs).**
- **Motion function, electronic cam, and gantry control.**
- **High bandwidth to 1KHz and auto resonance suppression.**

Types of ASDA-A2

ASD - A2 - 04 21 - M

Type	Full-closed	CANopen	Extension DI	DMCNET
M	V	V	—	—
U	V	—	V	—
F	V	—	—	V

Front View of ASDA-A2

Display

Linear Scale

Encoder

CANopen

DMCNET™
Delta Motion Control Network

6 Extension DIs

Control Buttons

DVP-20PM

Terminal Board

Main Encoder

MODBUS
RS-485/RS-422

ASDA-A2 Soft

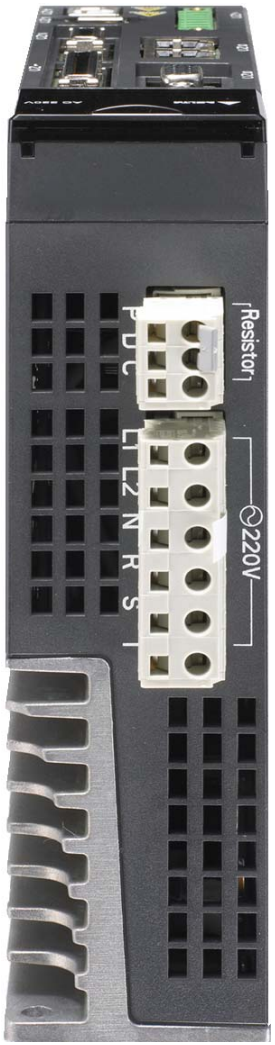
Bird & Ground Views of A2

Bottom Side

To Servo Motor

To Earth

Top Side



To Regenerative Resistor

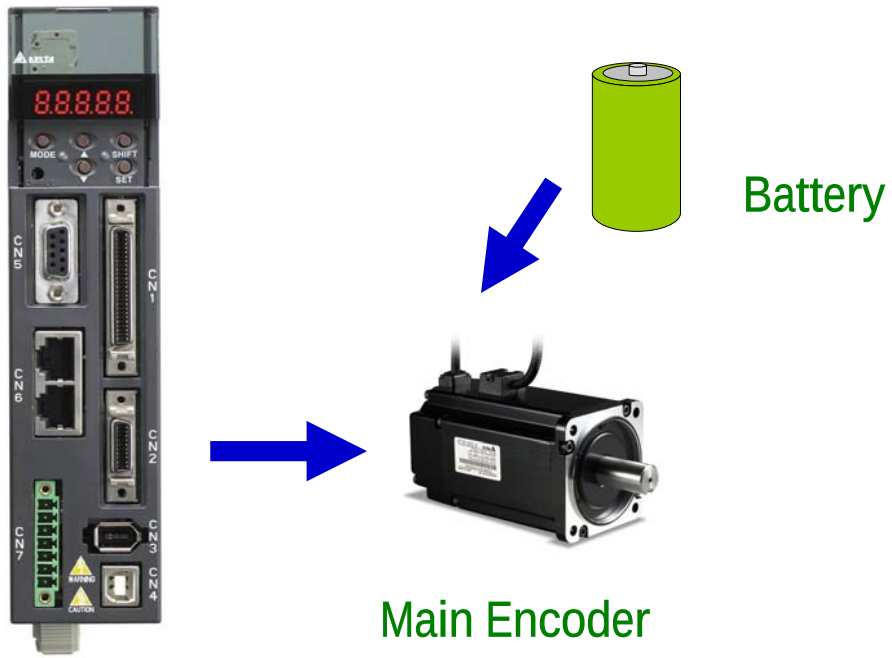
Control Power Inlet

Motor Power Inlet

High Resolution Encoder

Higher Accuracy for Positioning

- **20-bit level encoder (1,280,000 pulse/rev).**
- **Absolute system is coming soon.**



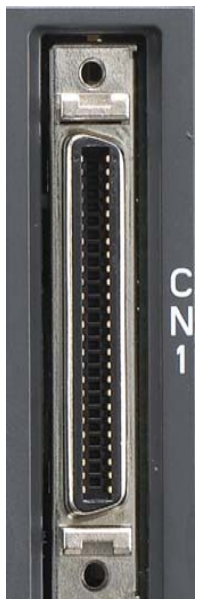
High Frequency Pulse Train

The Frequency of Input Pulse Train

- Frequency could be high to 4 M pps.
- Open collector is only 200 K pps.

The Output Pulse Train

- The highest frequency is 1280000 pulse/rev.



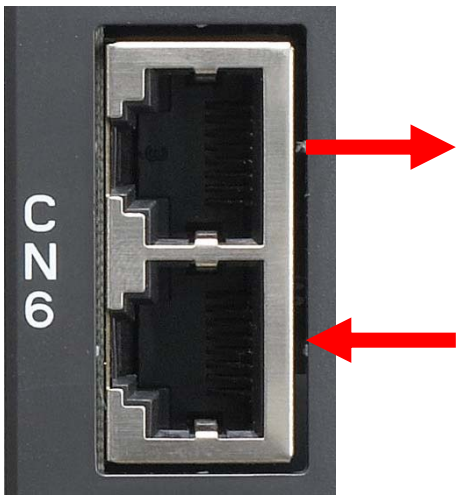
Pulse Command

Pulse Train to Host

CANopen Support

CANopen Protocol Complied

- **Communication rate high to 1 Mbps for CANopen and 20 Mbps for DMCNET.**
- **Support DS301 and DS402.**

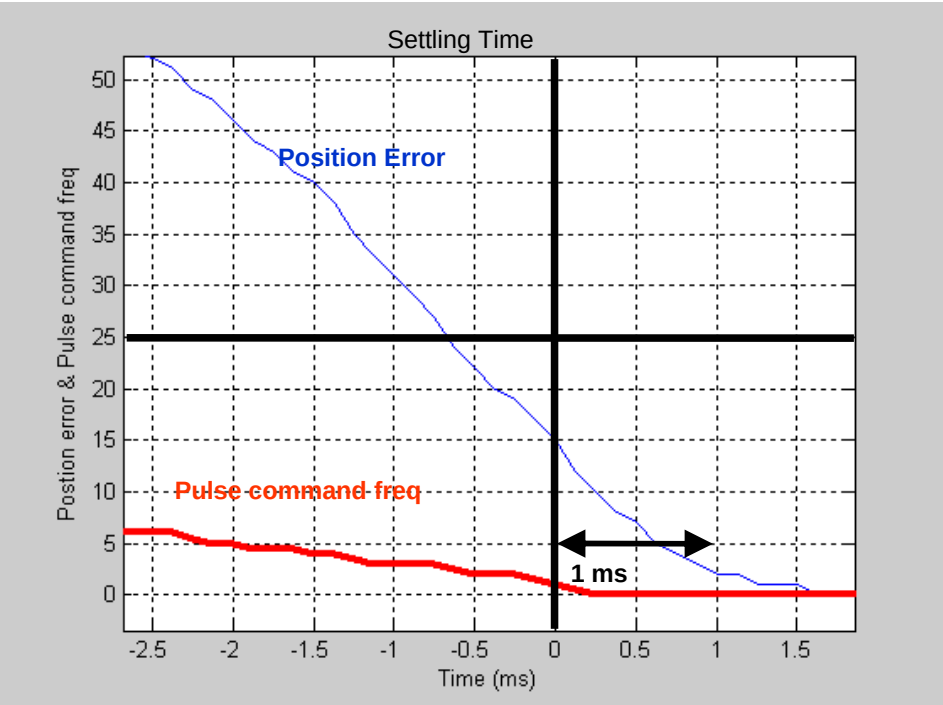


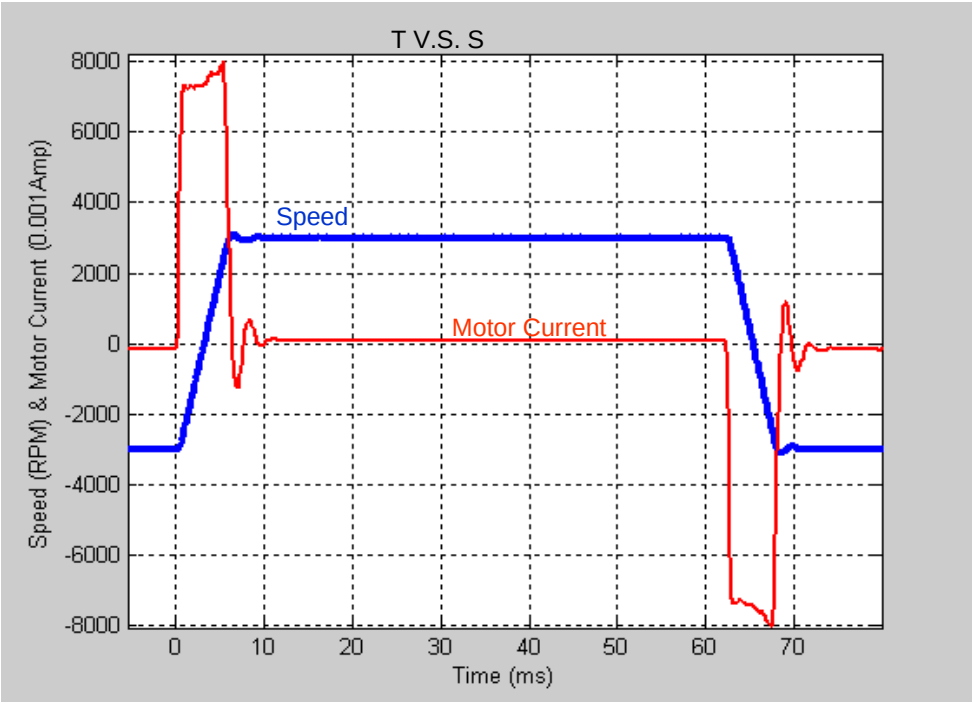
CANopen
DMCNET

High Responsive Ability

High Bandwidth Means High Responsive Ability

- **The settling time is less than 1ms.**
- **The highest bandwidth is 1K Hz.**
- **The acceleration time is 7ms for the speed from -3000 rpm to 3000 rpm with empty load.**



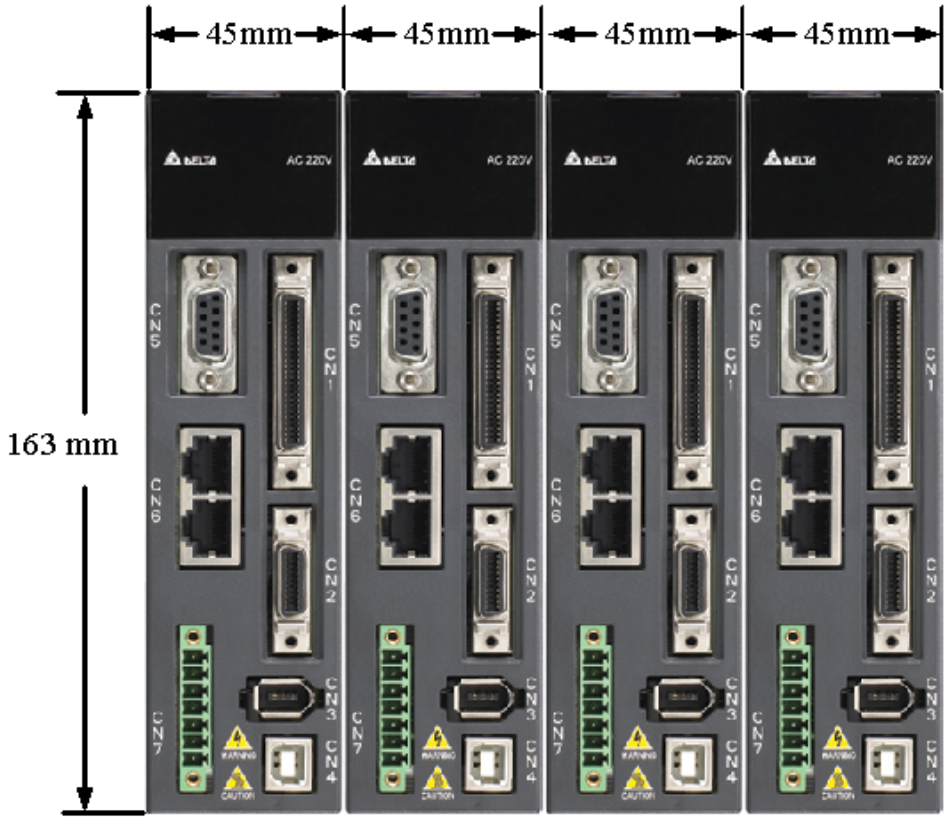


Note : The test record of a 400W motor with 60 frame size

Compact Size

Narrow Down the Installation Dimension

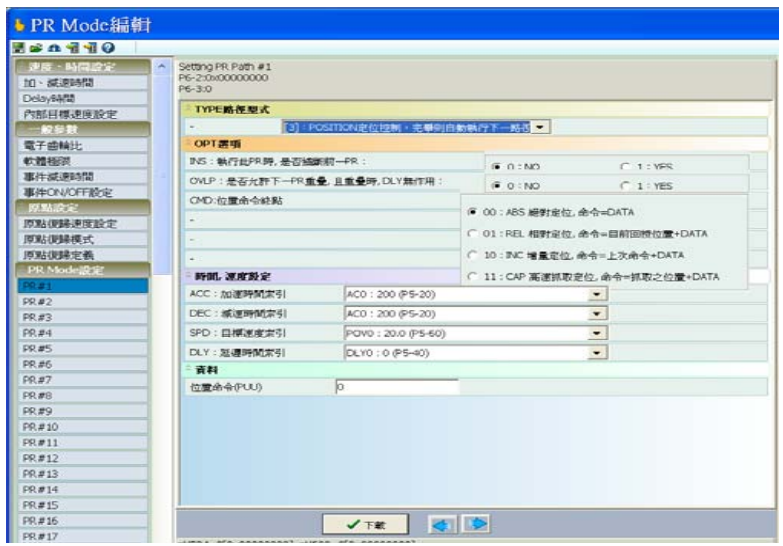
- **The width is 45mm (for 400w).**
- **Parallel installation with small space needed.**



The Easy Use Software

More Convenient Way to Use

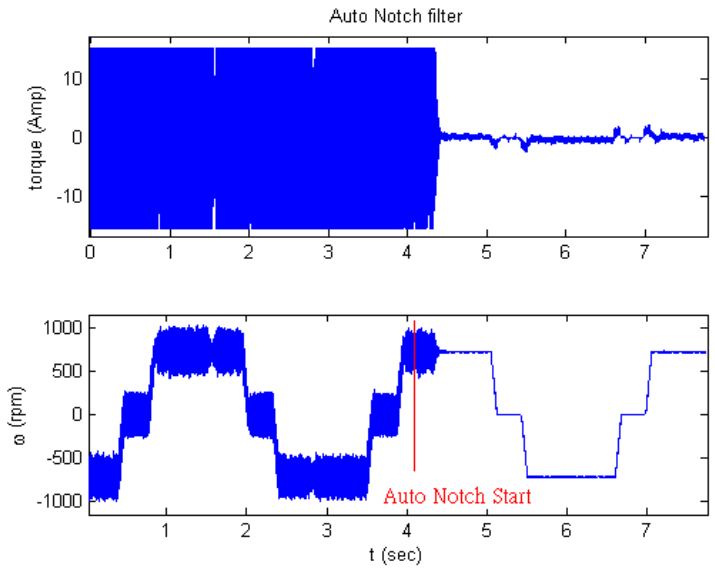
- **PR mode and E-Cam editor for easy settings.**
- **USB communication port to PC.**
- **MSizing helps to select servo system.**
- **4 channels high speed PC scope with sampling rate high to 8 KHz.**



Excellent Suppression Ability

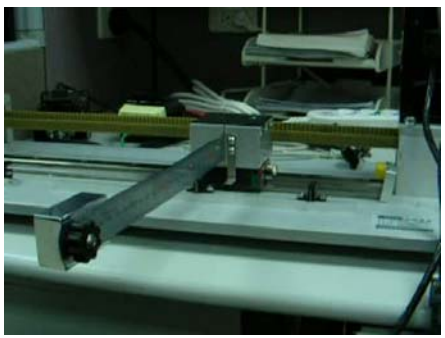
Resonance Suppression

- Two auto Notch filters and one manual Notch filter.
- Auto resonance frequency detection.

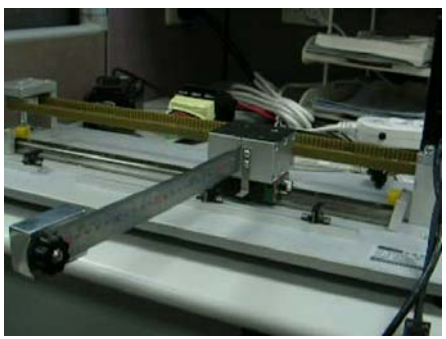


Vibration Suppression

- Two Vibration Suppression filters.
- The long arm suppression algorithm.



Without Suppression

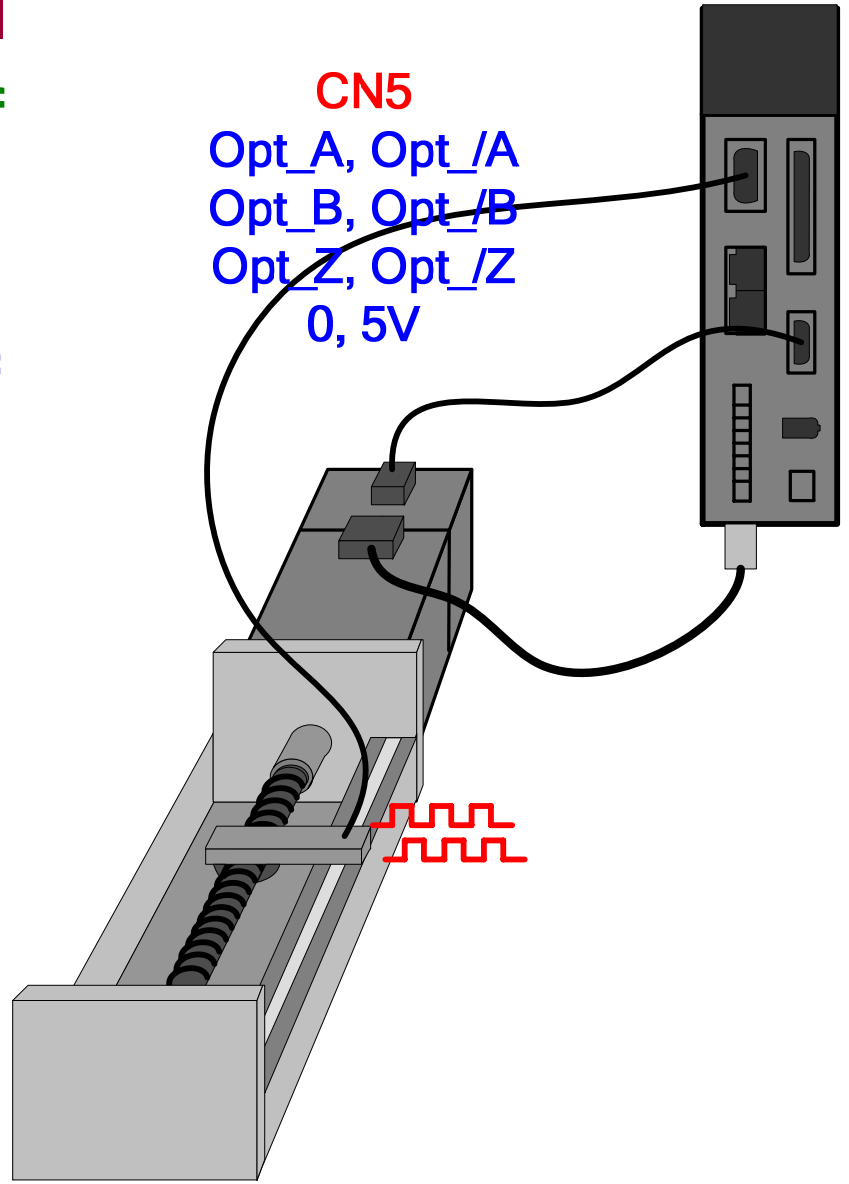


With Suppression

Full-closed System

Full-closed Loop Control

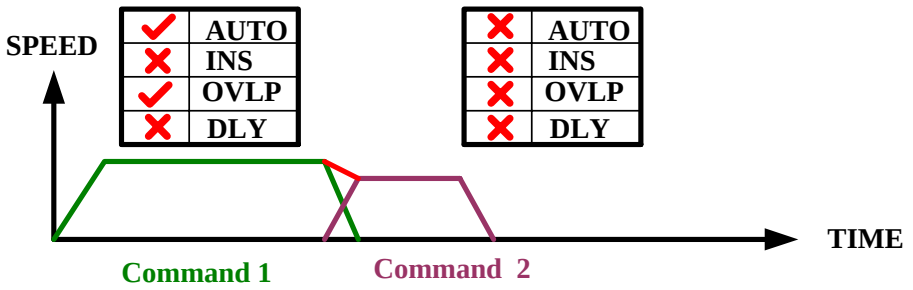
- **Reduce the affection of backlash and flexibility from machine.**
- **Ensure the accuracy of positioning.**

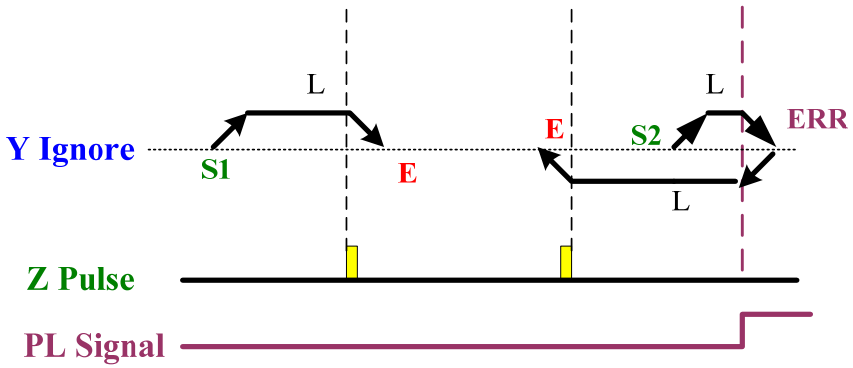


The Versatile PR Mode

Brand New Ideas on PR Mode

- New sub-modes supported, not traditional point-to-point control.
- 64 procedures can be applied.
- The motion profile being executed can be changed instantaneously.
- 35 homing modes supported.

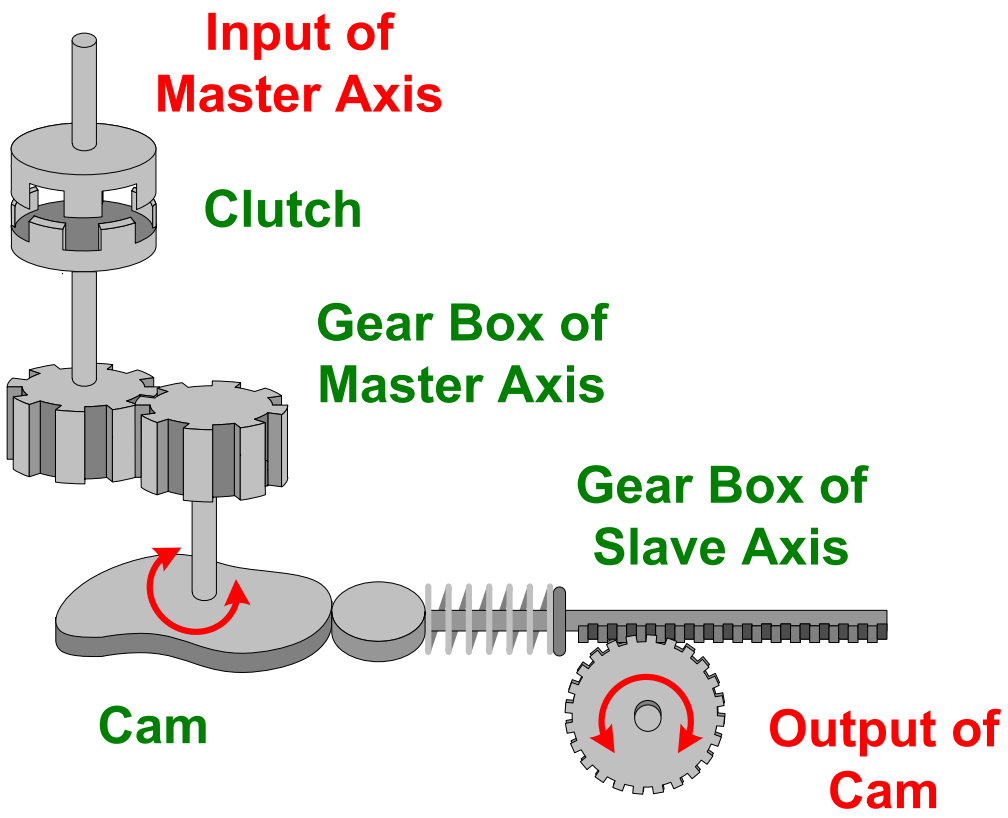




Electronic Cam

E-Cam Function

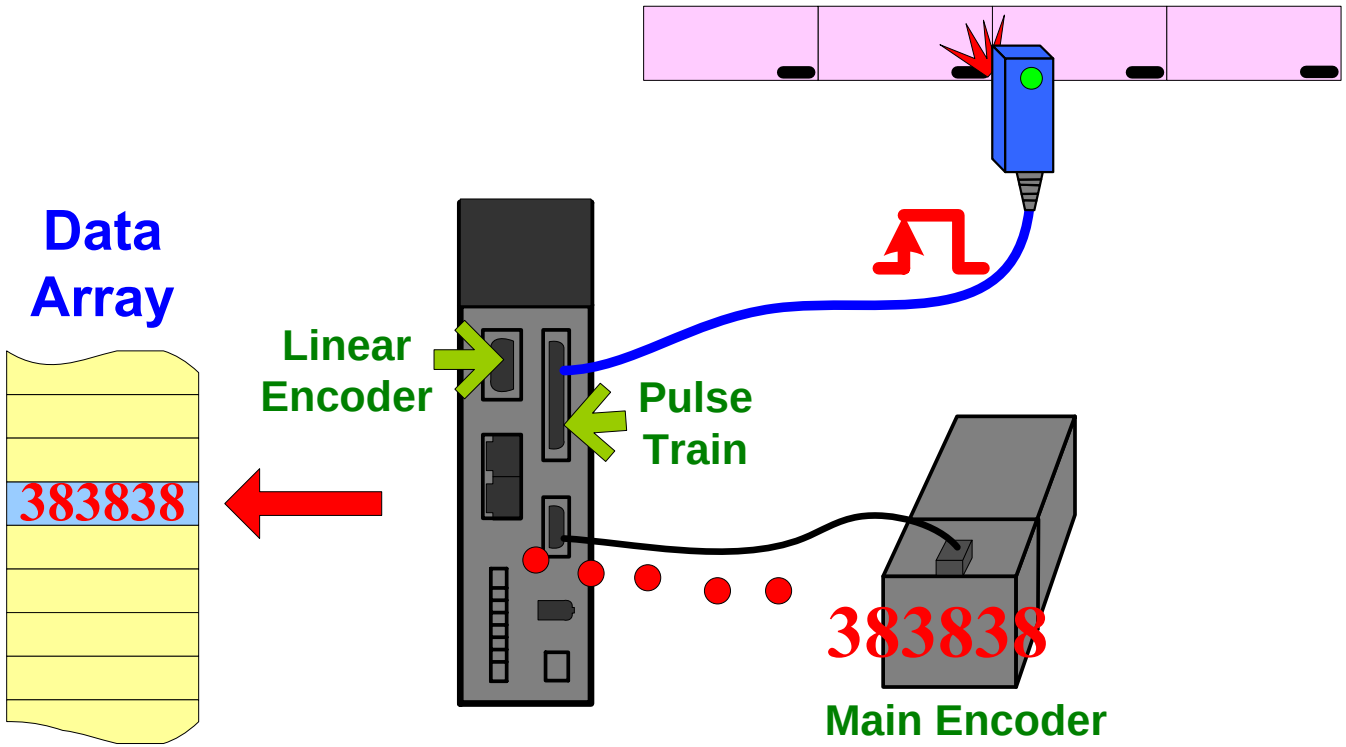
- Configuration software supported.
- 720 points max. for Cam outline.
- Easy use for flying shear, rotary cut, and other cam applications.



The Position Latch Function

The Capture

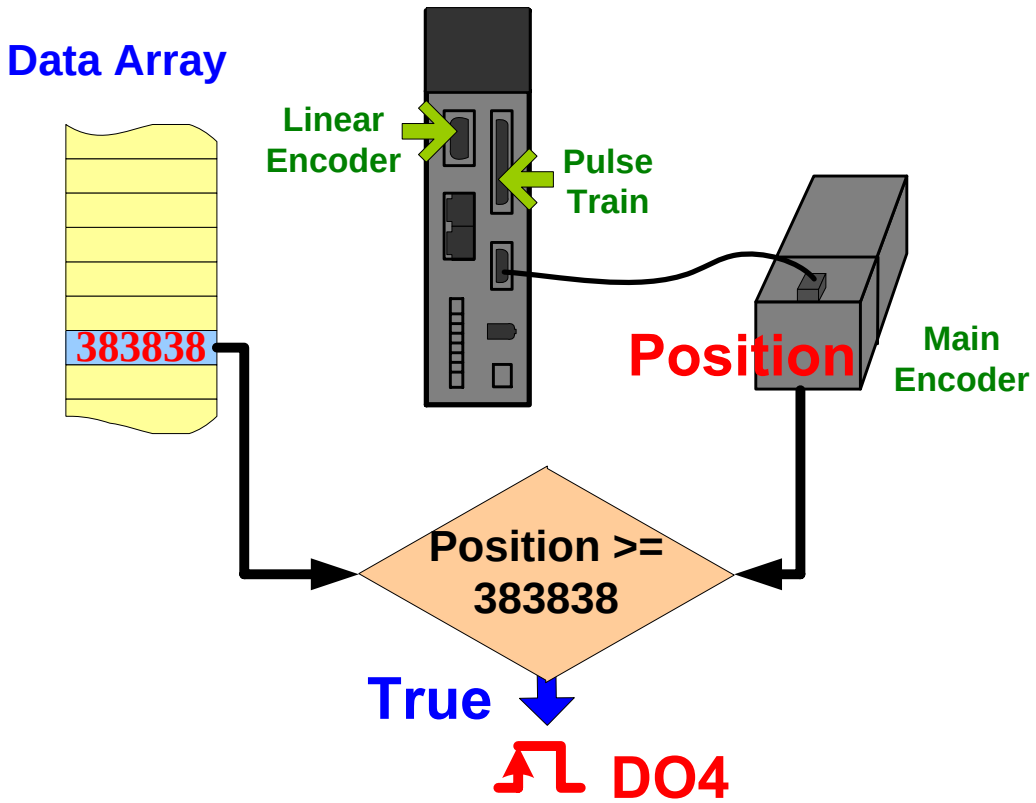
- **The coordinate value of reference axis can be kept within 5us after this command being activated.**
- **It can be used to do mark tracing.**

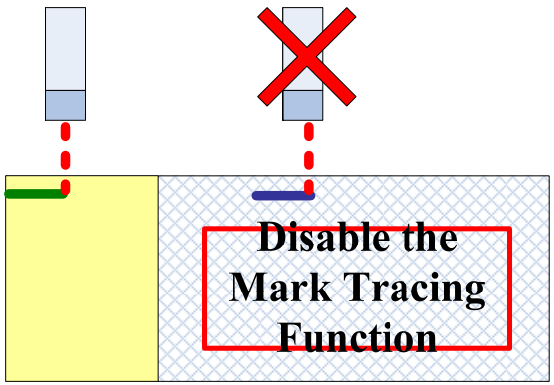


The Position Detection

The Compare

- Detect the location on the reference axis.
- The responsive time is less than 5us.
- The masking function on packing machine, for example.

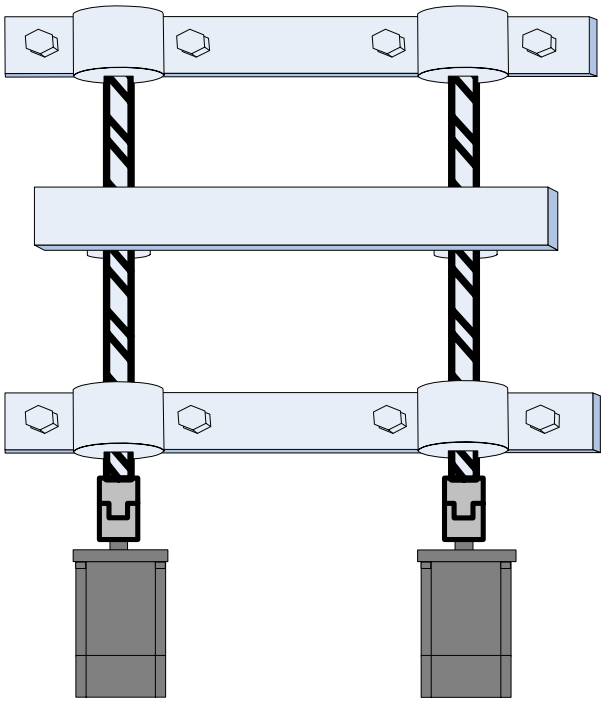


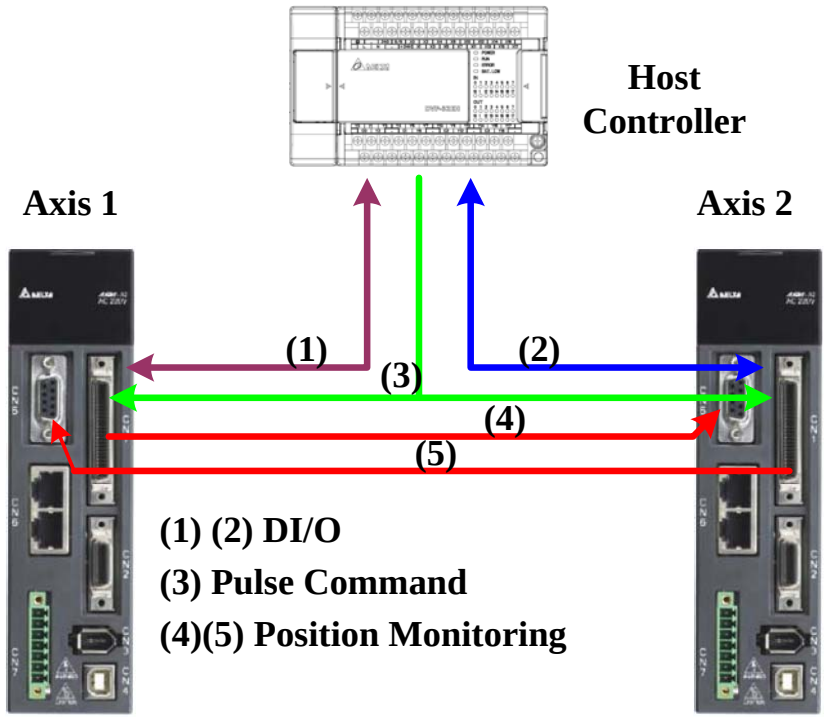


Integrated Gantry Control

The Gantry Control Function

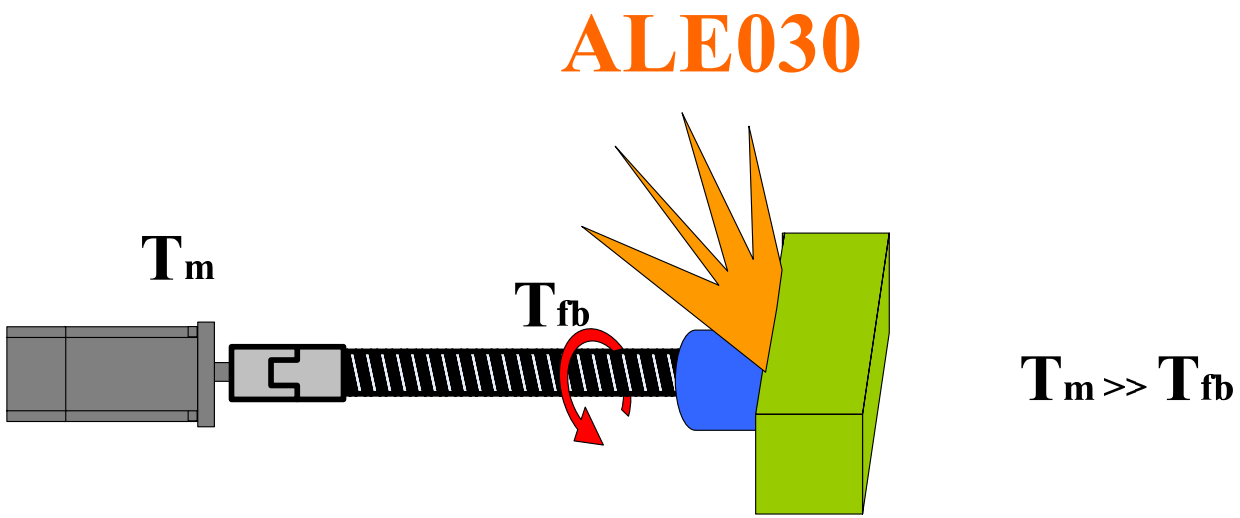
- **Easy for installation.**
- **Very good characteristic on synchronization.**





The Bumping Protection

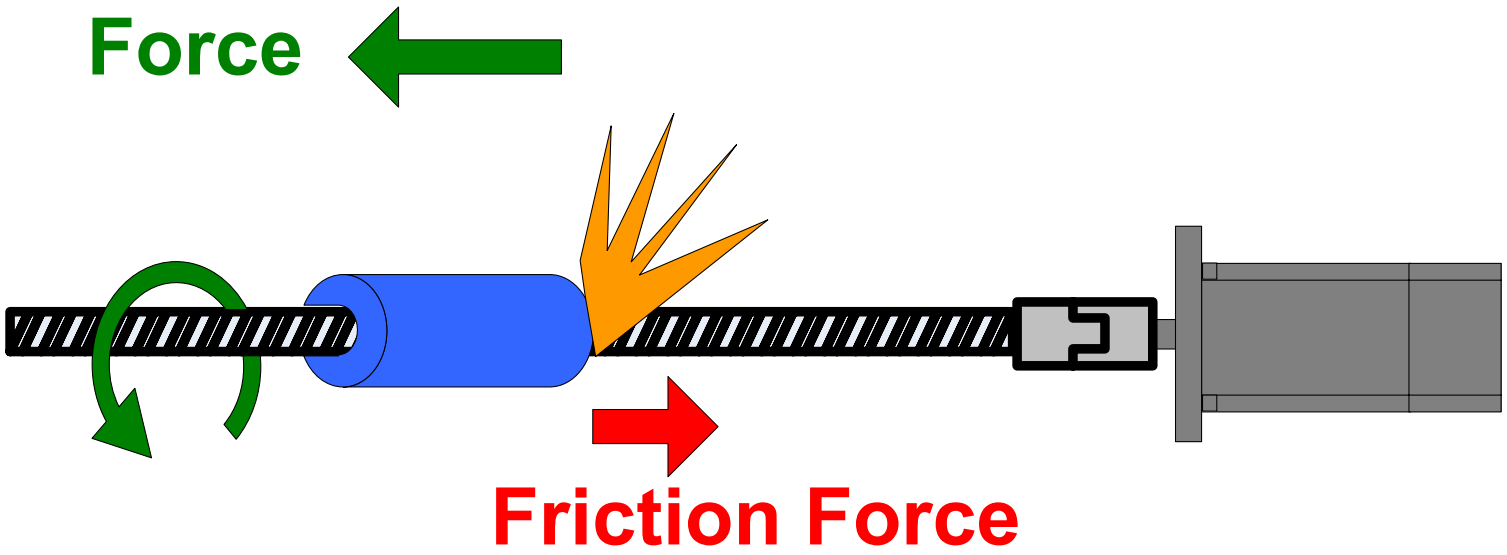
Protection of Impact



P1-57: Level of bumping force (0~300%)
P1-58: The threshold of bumping time (0~1000ms)

The Friction Force Compensation

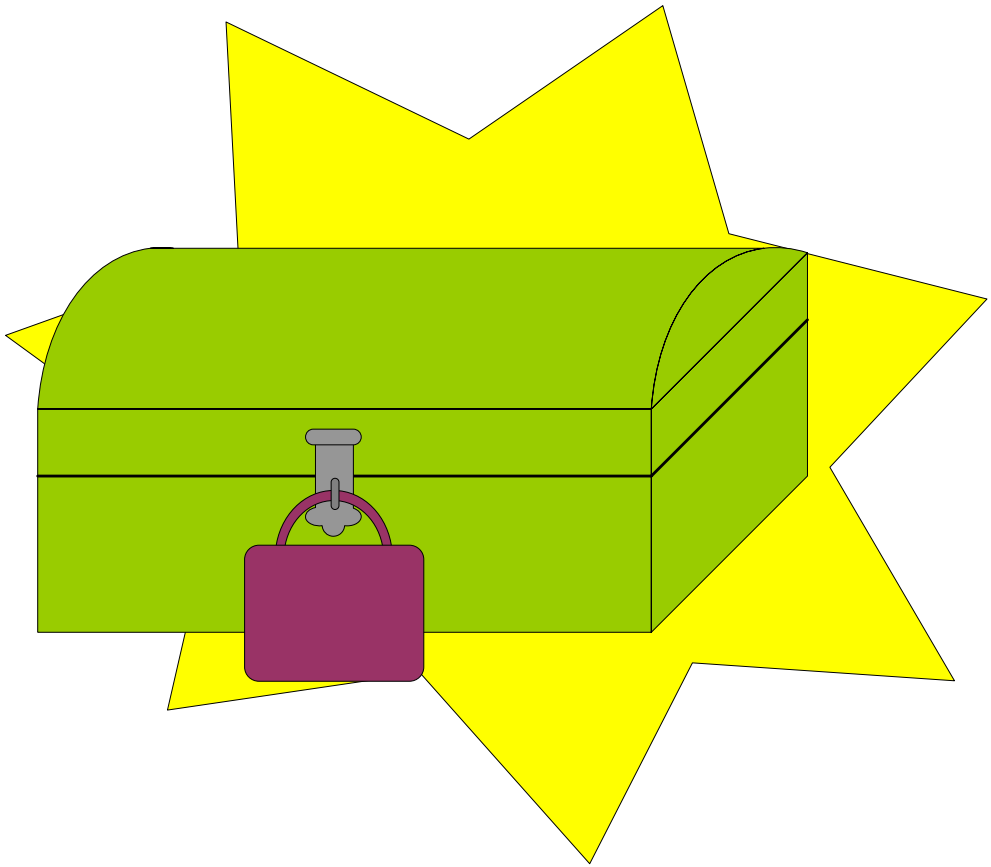
Reduce the Affection of Friction Force



Password Protection

Protect Your Business Secret

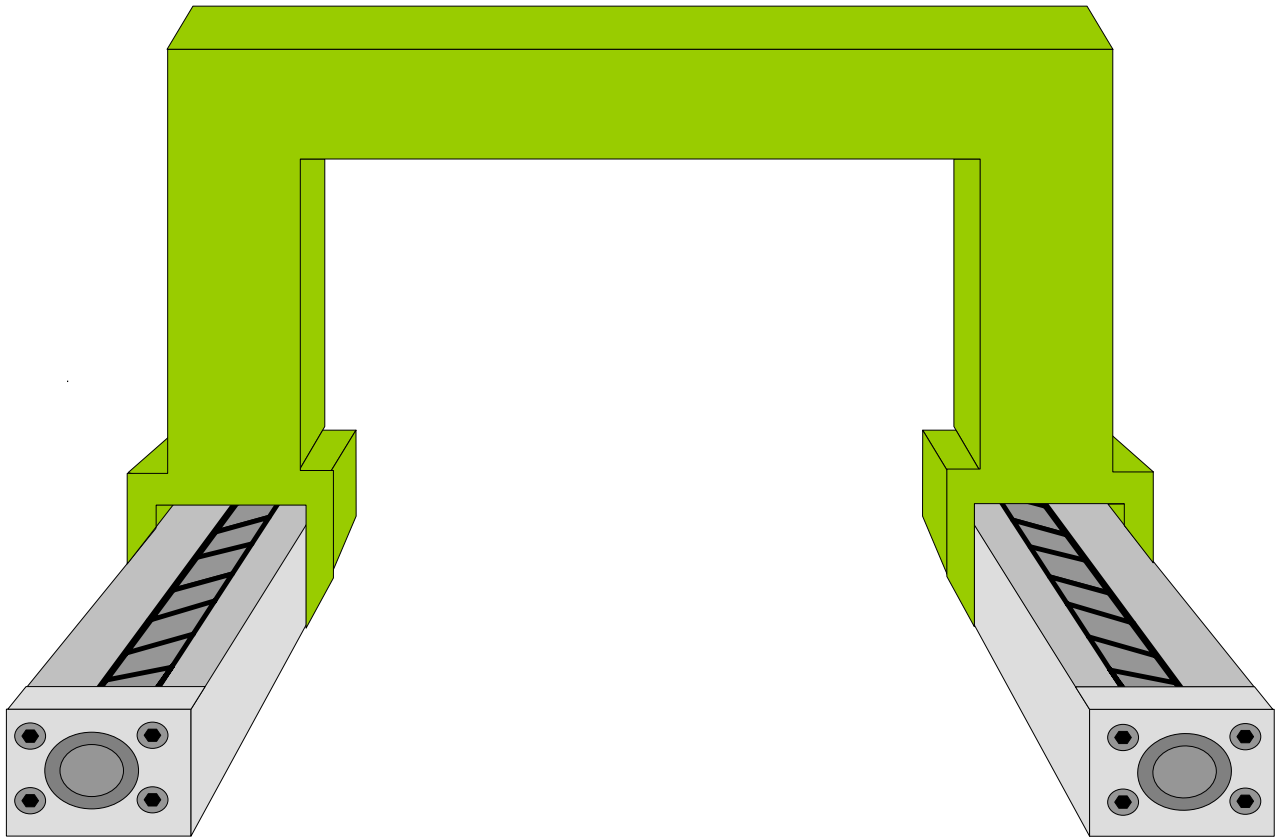
- **This function is supported by firmware Version 1.026 Sub.12 and after.**



Successful Story (1)

Gantry Control

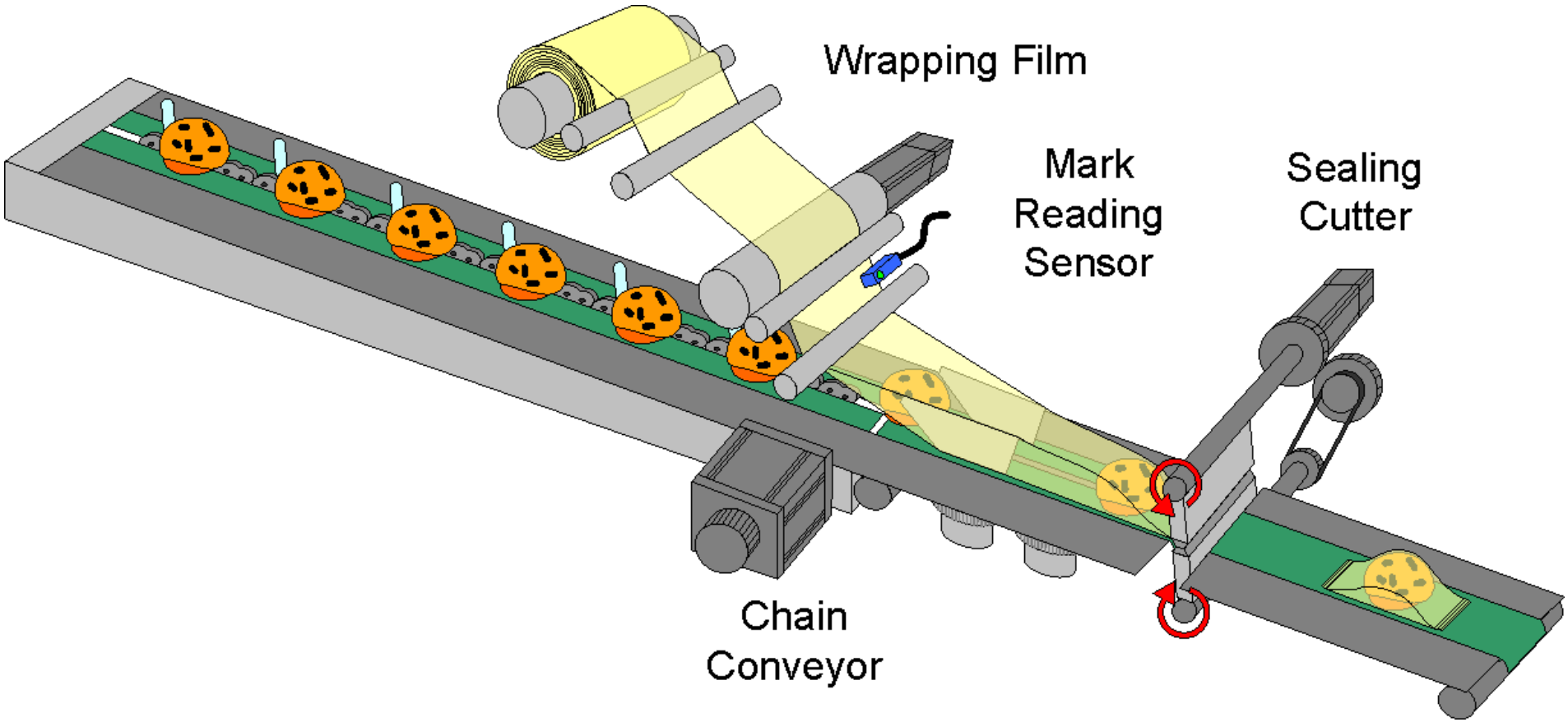
Drilling Machine for Printed Circuit Board, LCD Scanner, Dispensing Robot Dispenser …



Successful Story (2)

Packing Machine

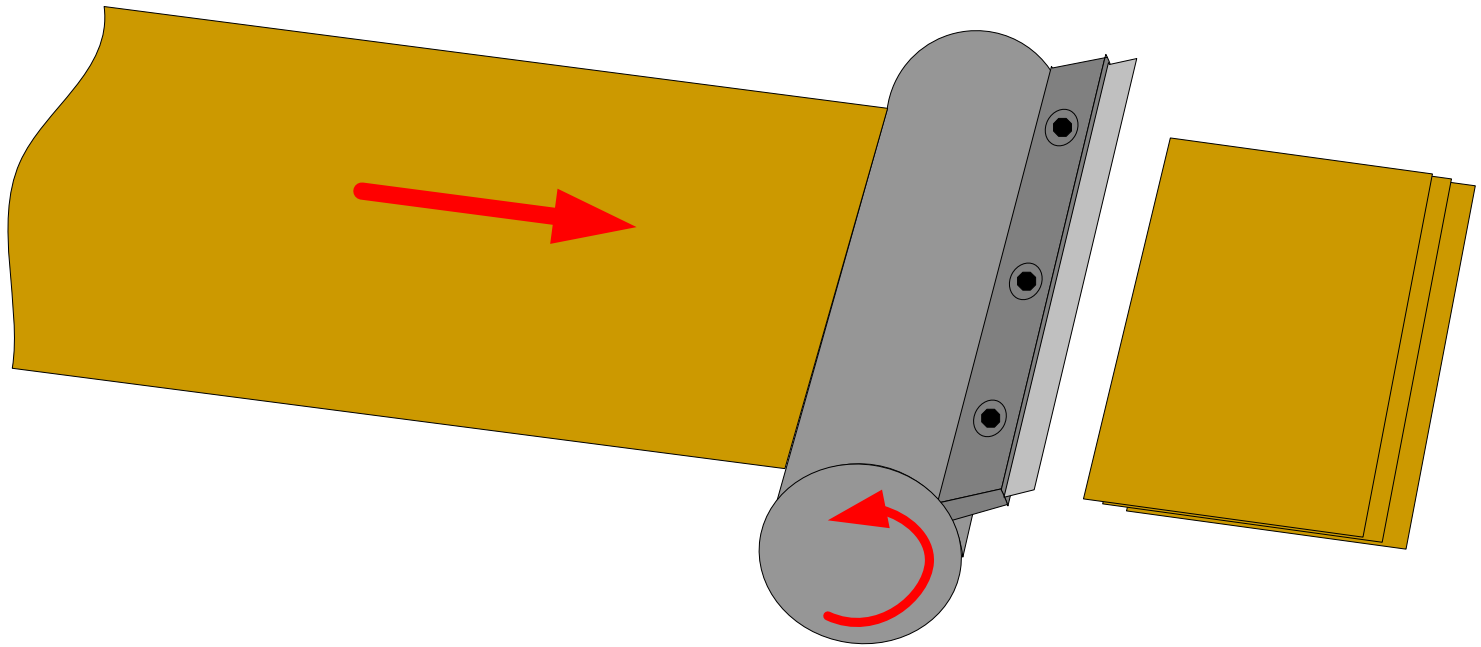
Mark tracking, Mark read masking, Synchronization, and some convenient designs.



Successful Story (3)

Rotary Cut

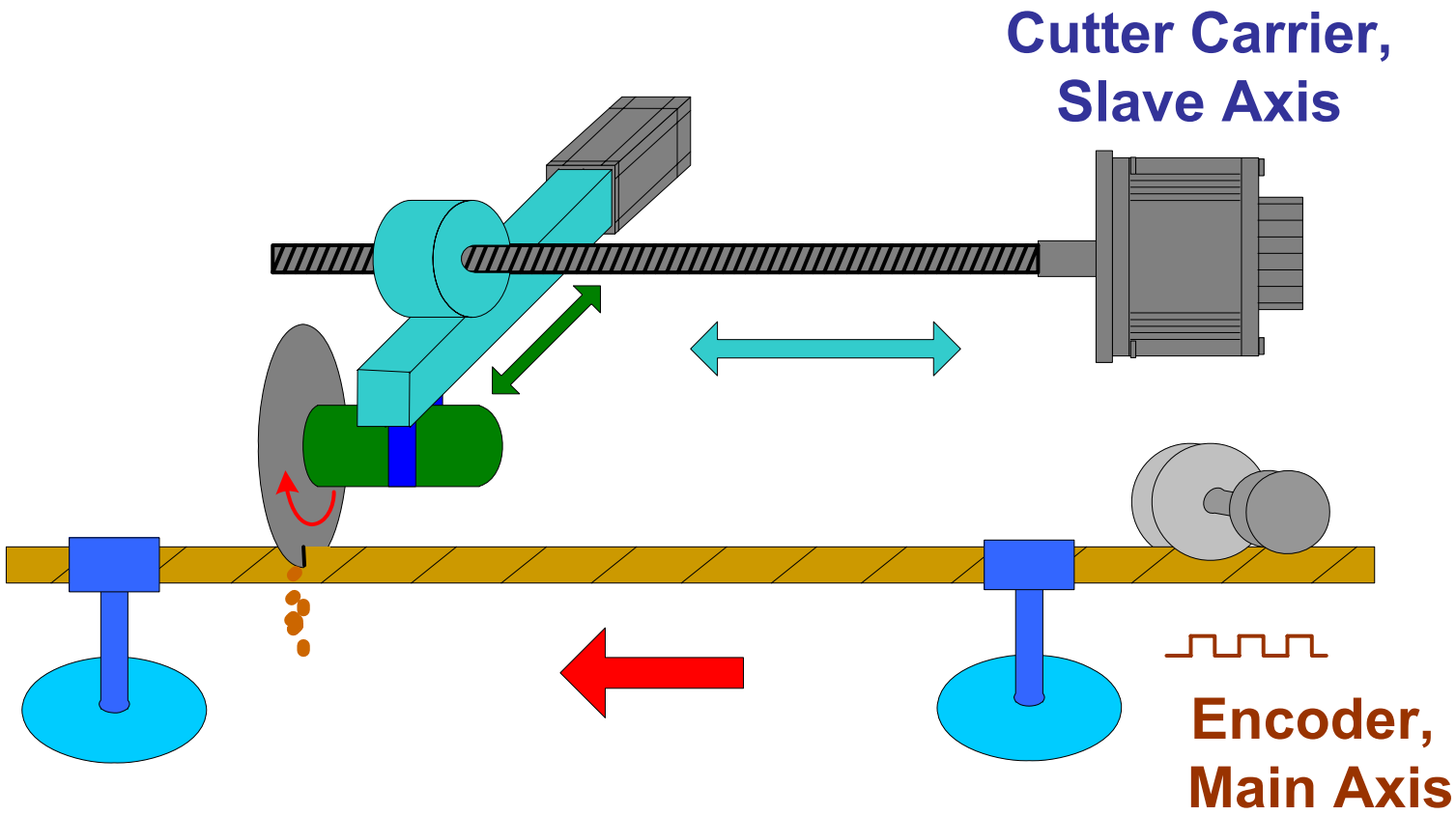
Cutting machine for the materials with mark or without mark.



Successful Story (4)

Flying Shear

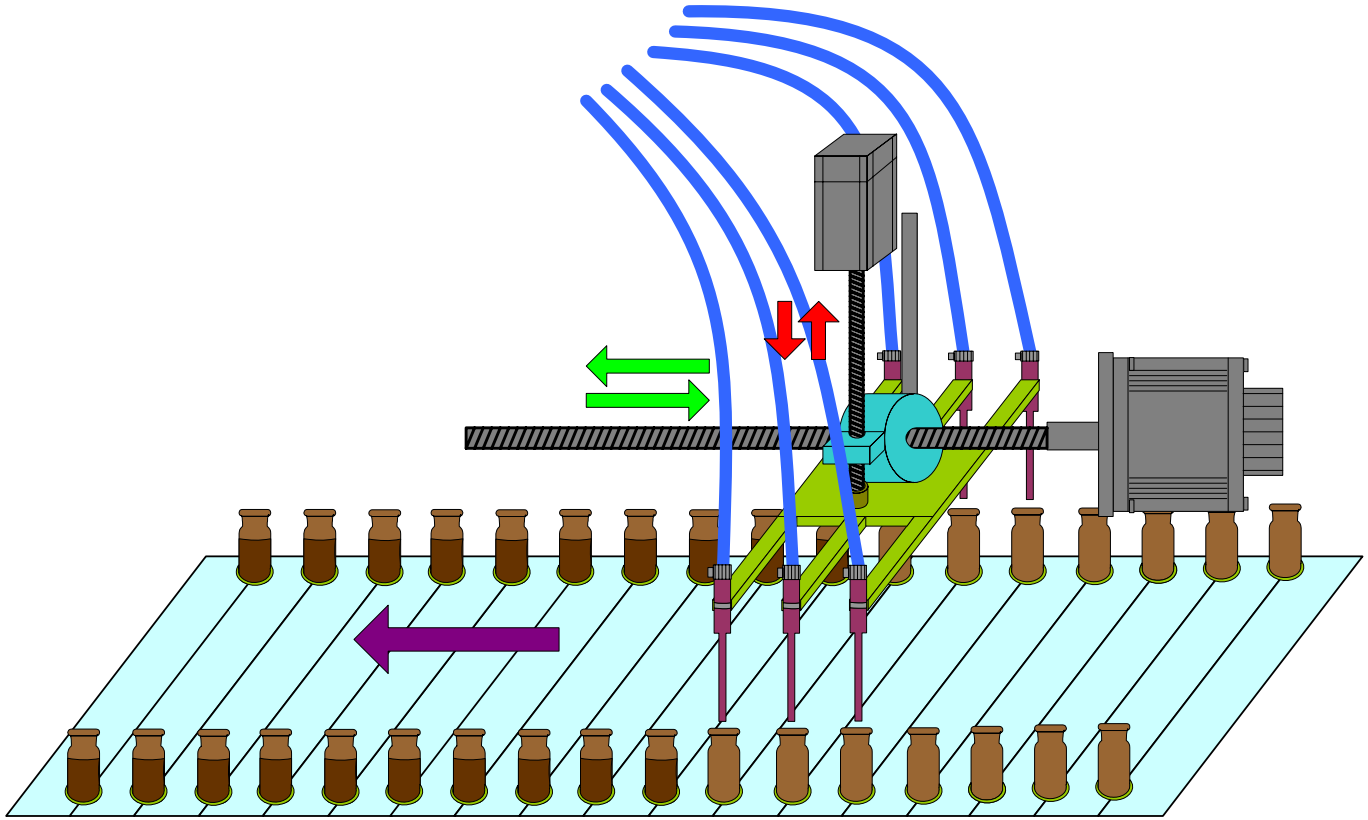
Paper tube cutting machine and similar applications.



Successful Story (5)

Filling Machine

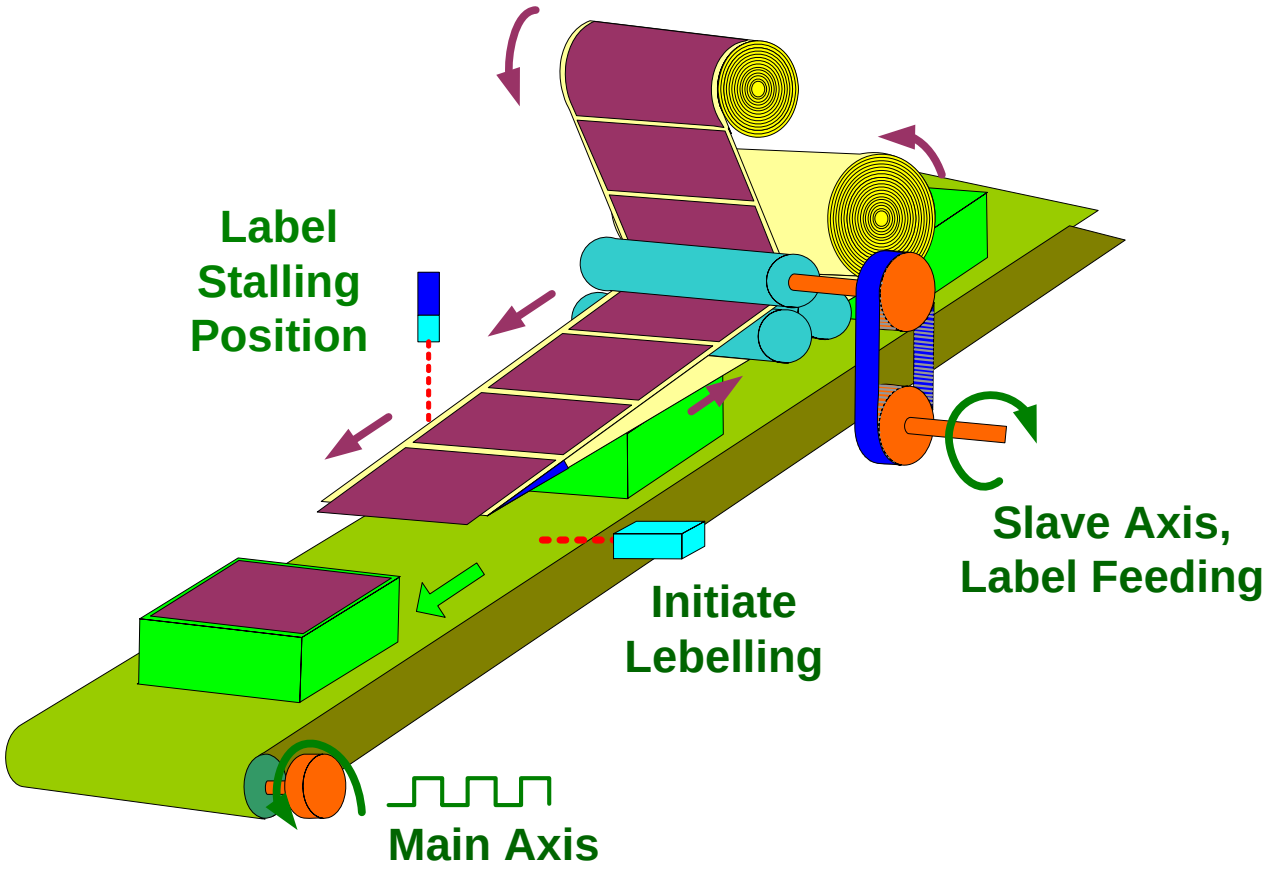
Share the same idea with flying shear.



Successful Story (6)

Labelling Machine

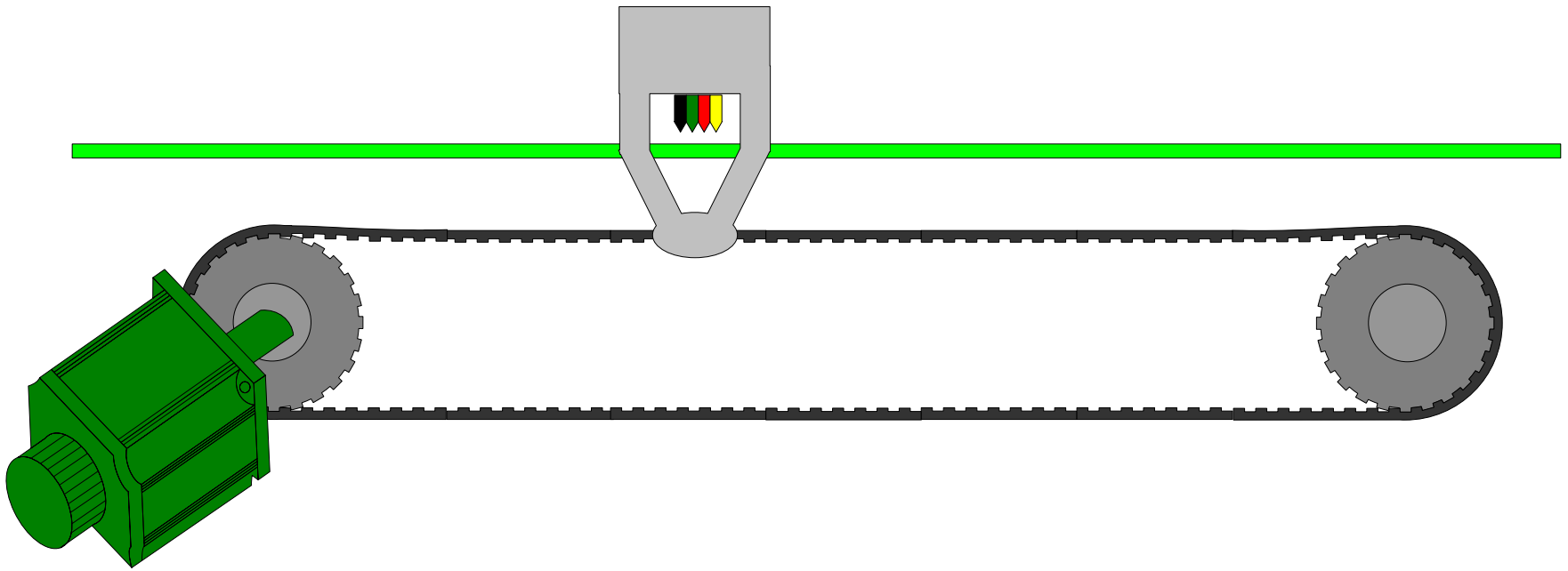
Another application of flying shear.



Successful Story (7)

Full-closed Control

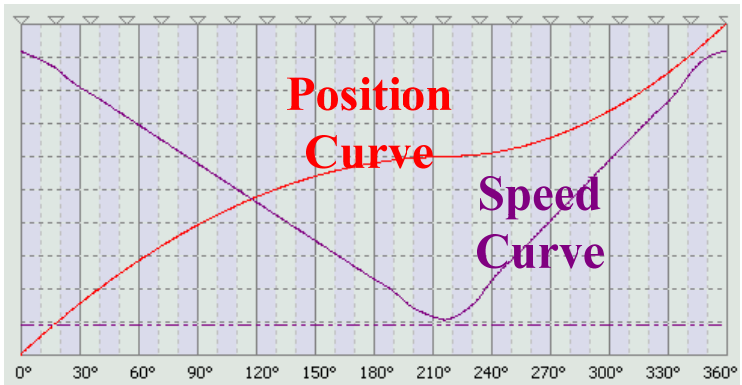
Jet printer with long belt system. The linear encoder can conquer the problem of mechanism flexibility.



Successful Story (8)

E-Cam Application

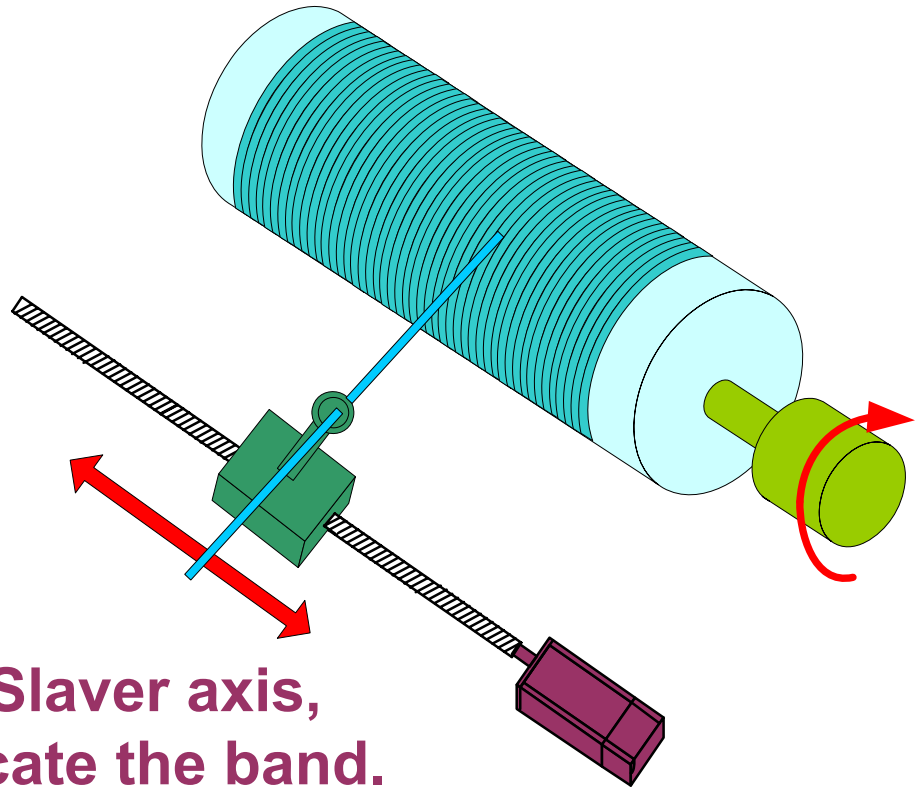
Garbage Bag Cutter. The E-Cam can reduce the impaction force of machine while cutting.



Successful Story (9)

E-Cam Application

Winding machine for packing band and similar applications.



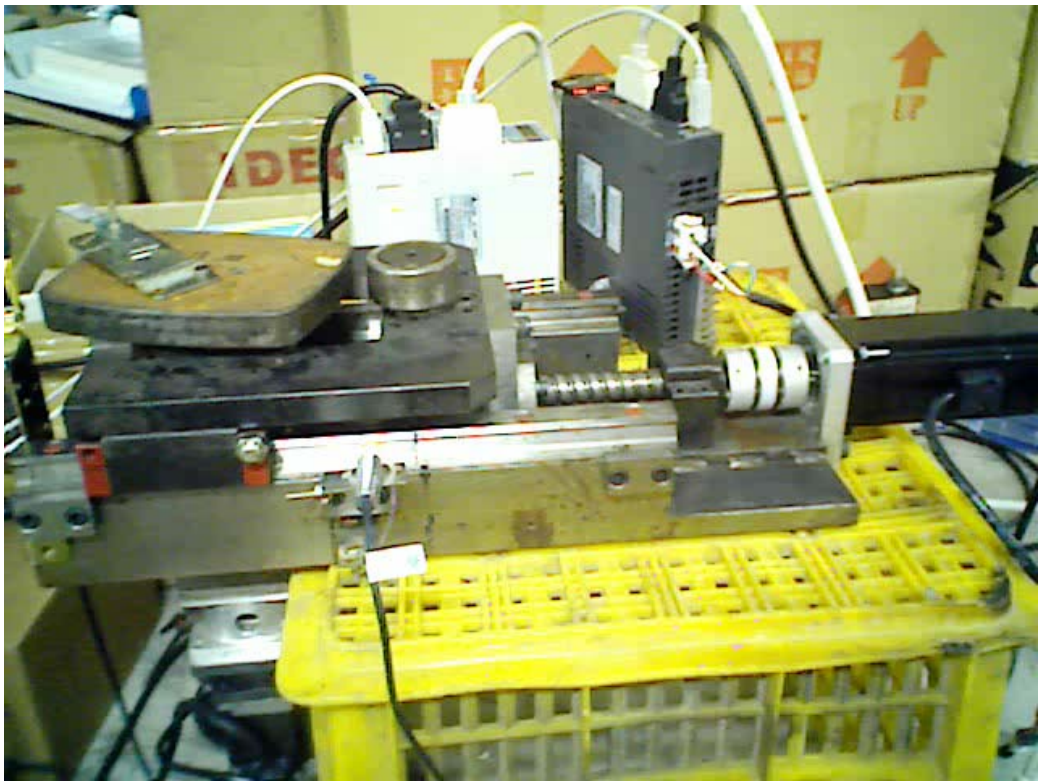
Main axis, determine the winding speed.

Slaver axis, locate the band.

Successful Story (10)

E-Cam Application

Muffler making machine. The wheel is used to press the edge of muffler. The Capture and Compare functions can be used to figure out the E-Cam curve.



Thank You

Revision: Feb. 21, 2011