THE FEATURES ON ASDA-A2

The Contents

Easy Settings for Cap. Relative Axis

This method can use to set Cap. Relative Axis without consume the COMPARE resource. Easy way to set up this Cap. Relative Axis than before.

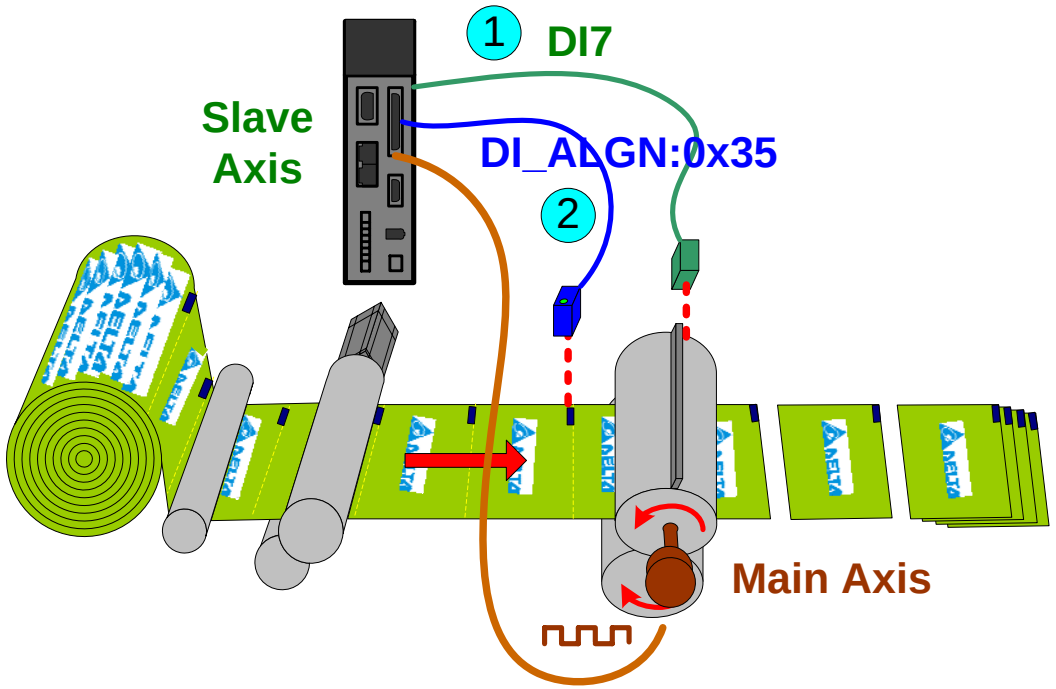
Phase Alignment

This function is used to align the E-Cam phase according to the a physical digital input signal.

An Application Example

A Population Application

When the material feeding roller is a slave axis in a cutting machine which is requested to cut at the mark place for every cycle .



1 Capture Relative Axis

2 Phase Alignment Function

New Way to Set Cap. REL Axis (1)

Parameters

Supported by version V1.038 Sub.19 (included).

Please also reference to the training slides.

P1-19 Capture/ Compare Extension Function.

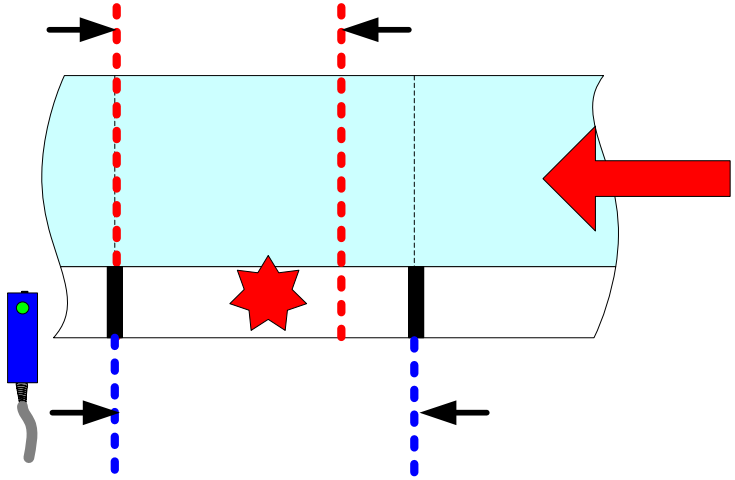
P1-20 Masking length.

P1-19

U	Z	Y	X

P1-19.X=1. Repeat CAPTURE function when P5-39.X=1.

The distance for masking is set in P1-20.

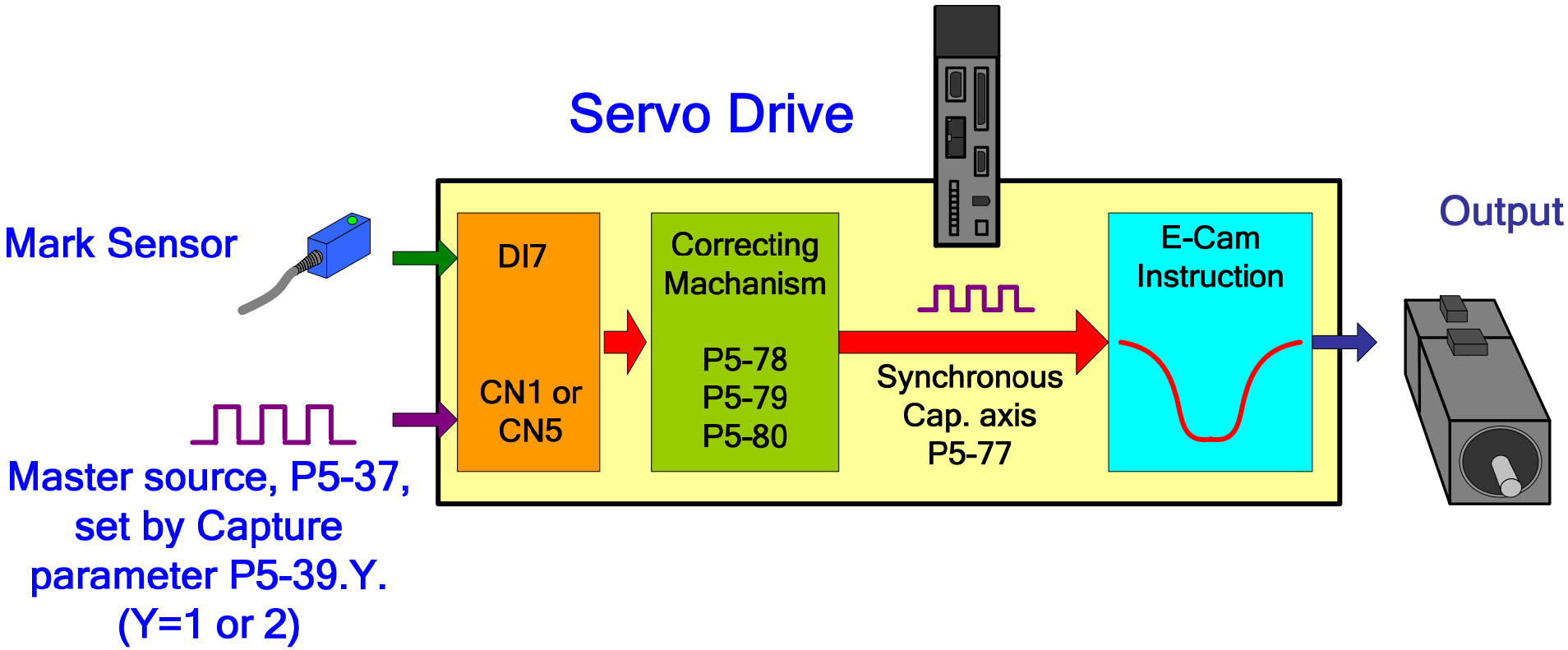


Cutting length is in P5-78.

New Way to Set Cap. REL Axis (2)

The Mark Tracking Function

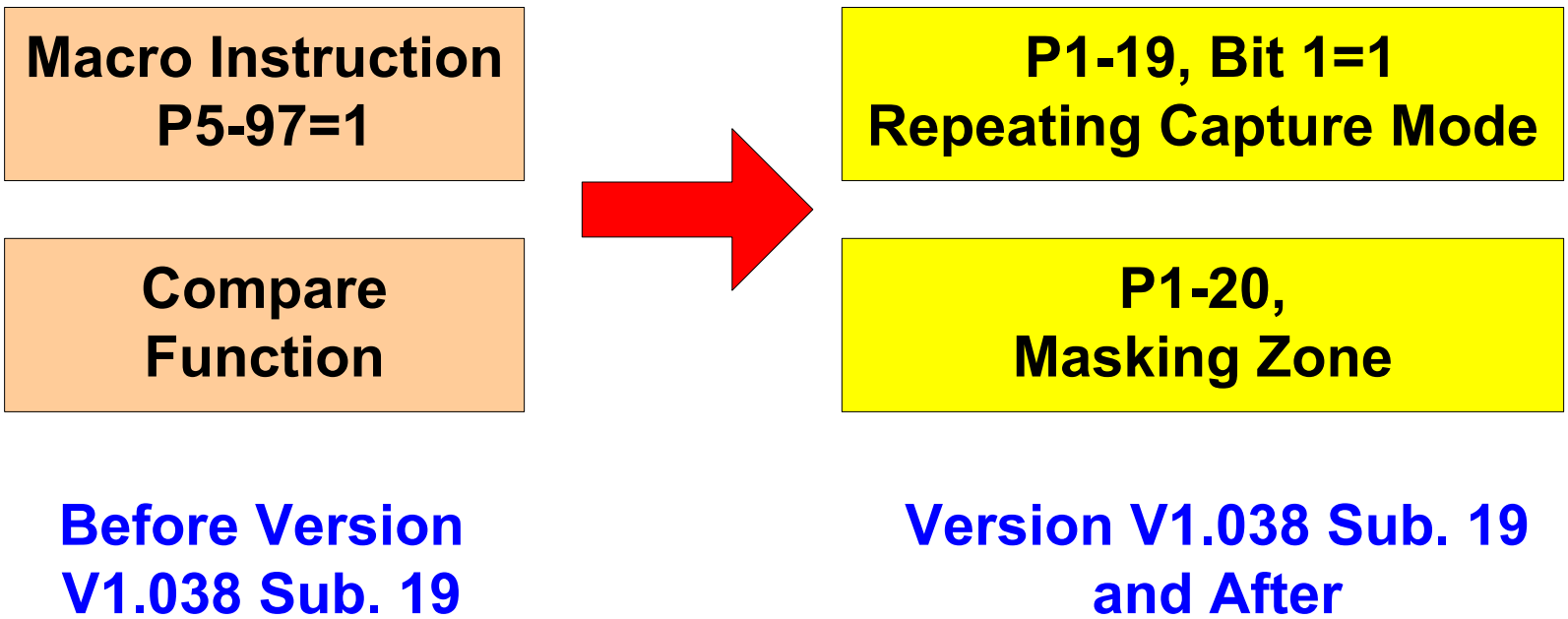
ASDA-A2 is integrated a feature which will adjust its cutting length according to the difference from comparing the pulse number received to the standard one .



New Way to Set Cap. REL Axis (3)

Alternative Settings for Syn. Capture Axis

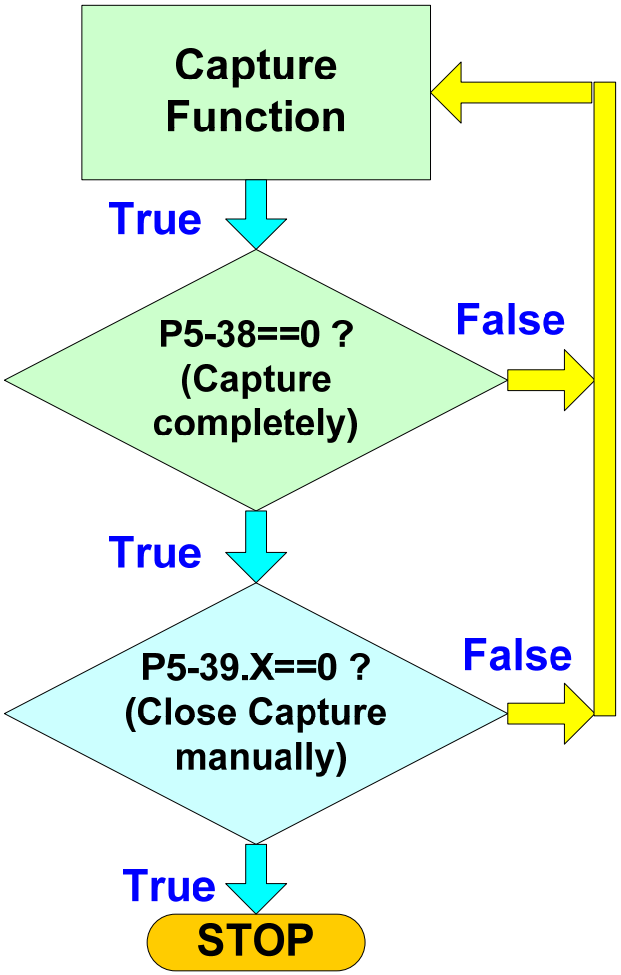
The new method no using macro instruction to set Synchronous Capture Axis is supported by firmware version 1.038 sub 19 and the version after this one.

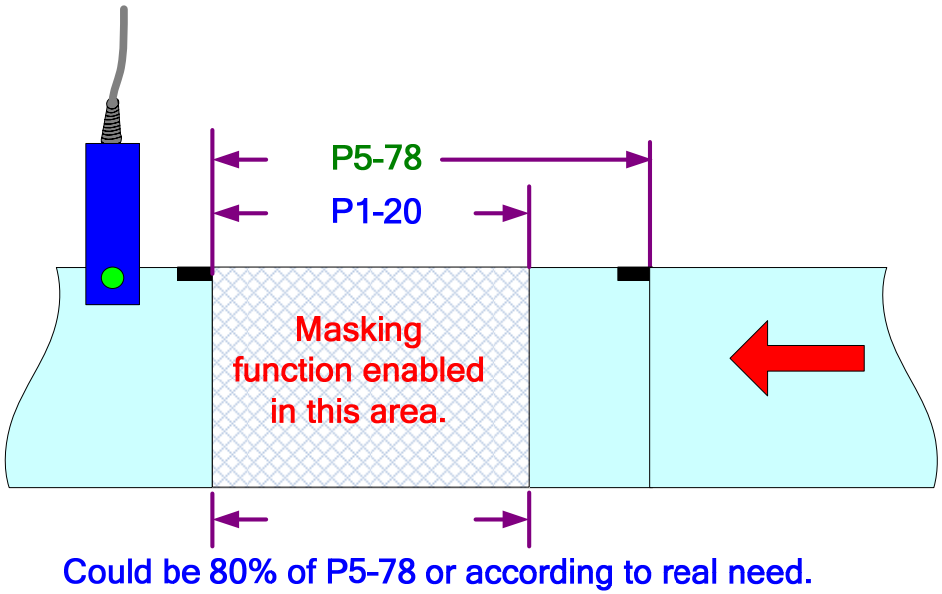


New Way to Set Cap. REL Axis (4)

The New Parameters

The P1-19.X=1 is for repeating Capture Function operation and P1-20 is using to set masking distance.



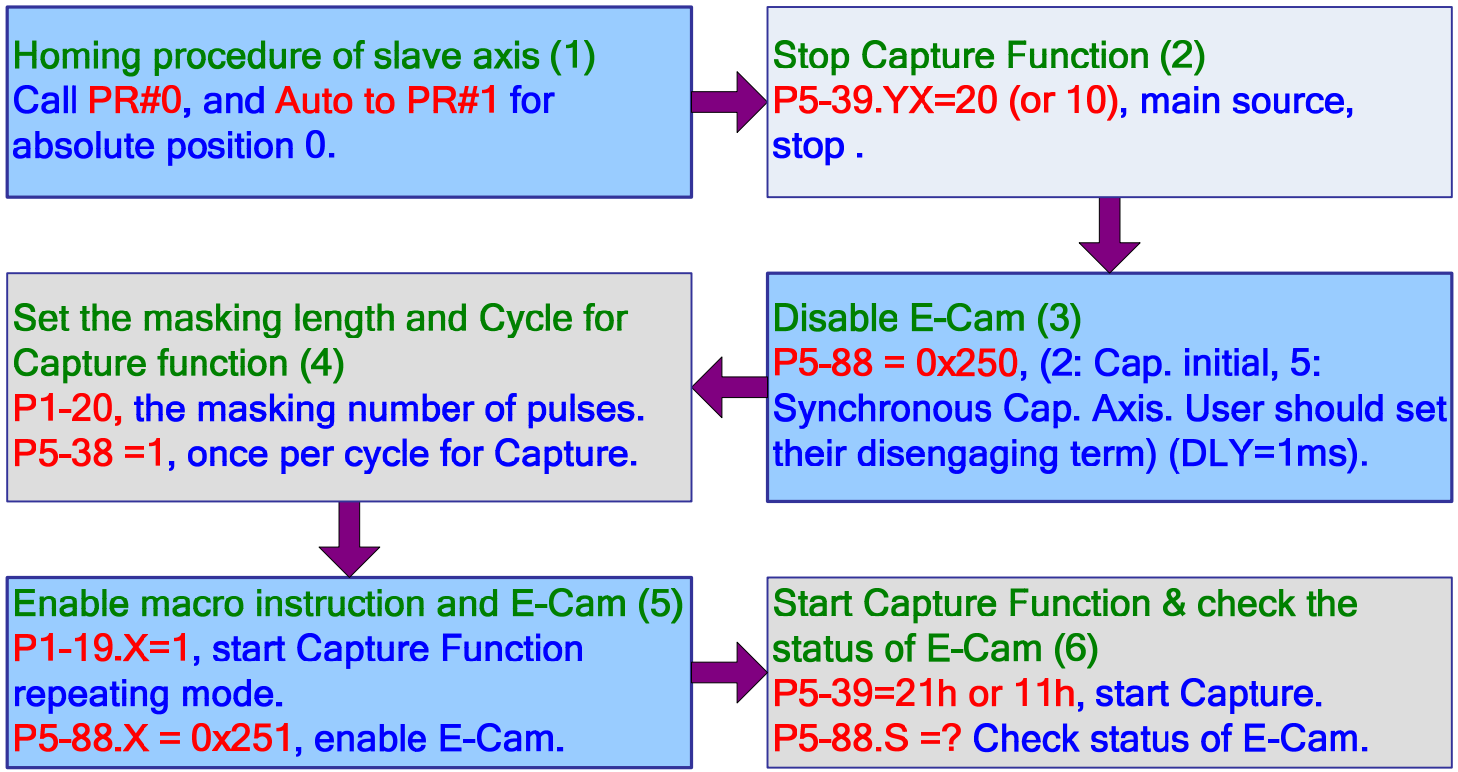


New Way to Set Cap. REL Axis (5)

The Operating Procedure

These settings are not done by PR-Write and should be well prepared at first.
1. E-Cam curve is ready in the servo drive.
2. All the parameters of E-Cam are done. (P1-44, P1-45, P5-19, P5-81~85)
3. P5-36 is assigned appropriate.
4. The homing procedure is well defined.
5. P5-78, pulse number between 2 marks.
6. P5-80, correcting rate (0%~90%).

The procedures below are done by PR-Write.



New Way to Set Cap. REL Axis (6)

The PR Sample for new parameters

Procedure for normal starting and revising masking length.

1

Homing procedure.

PR #0	Home X=? Offset=0 PR#1

Go back to 0.

PR #1	Position(3) D=0, S=10.0 rpm 0 PUU, ABS

Stop Capture function.

PR #2 (I)	Write DLY=0 ms P5-39=0x0020

Stop E-Cam.

PR #3 (I)	Write DLY=1 ms P5-88=0x0250

PR #4 (I)

The number of pulse for masking length.

PR #4 (I)	Write DLY=0 ms P1-20=8000

Set Capture Cycle.

PR #5 (I)	Write DLY=0 ms P5-38=1

Set repeating Capture mode.

PR #6 (I)	Write DLY=0 ms P1-19=0x1

Start E-Cam.

PR #7 (I)	Write DLY=0 ms P5-88=0x0251

PR #8 (I)

Start Capture Function.

PR #8 (I)	Write DLY=0 ms P5-39=0x0021

For some changes (E-Cam curve for example), it should be called. After the parameters set, call 1 to start system again.

2

Stop repeating Capture mode.

PR #10 (I)	Write DLY=0 ms P1-19=0

Stop E-Cam.

PR #11 (I)	Write DLY=1 ms P5-88=0x0250

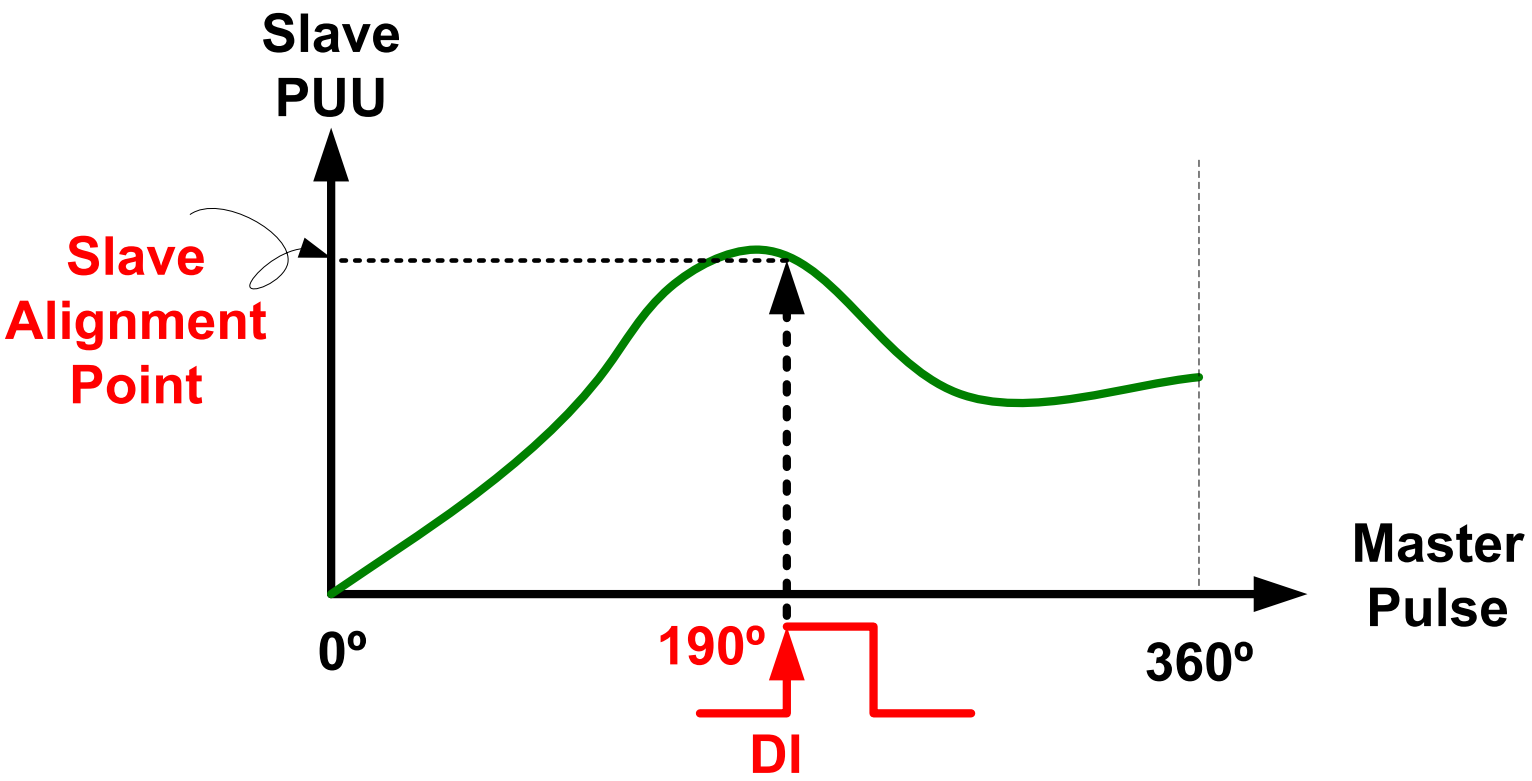
Stop Capture function.

PR #12 (I)	Write DLY=0 ms P5-39=0x0020

The Phase Alignment Function (1)

How it works?

When the a physical digital signal comes into the servo drive, the servo will align its phase to the signal.

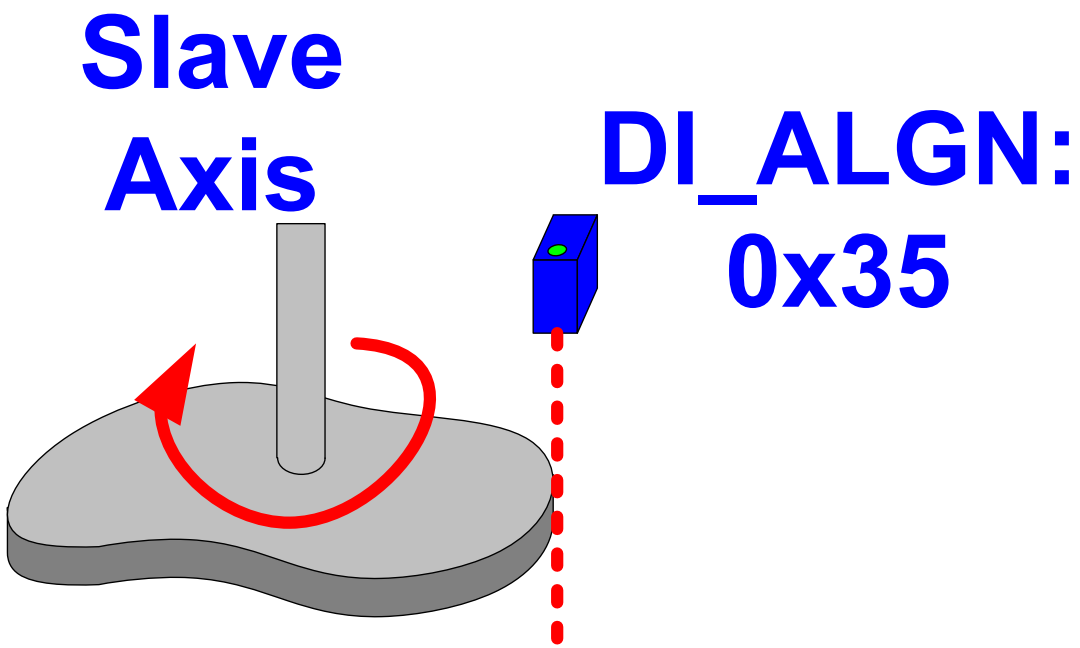


The Phase Alignment Function (2)

Where to install the sensor?

The alignment sensor could be installed in different places according to different applications.

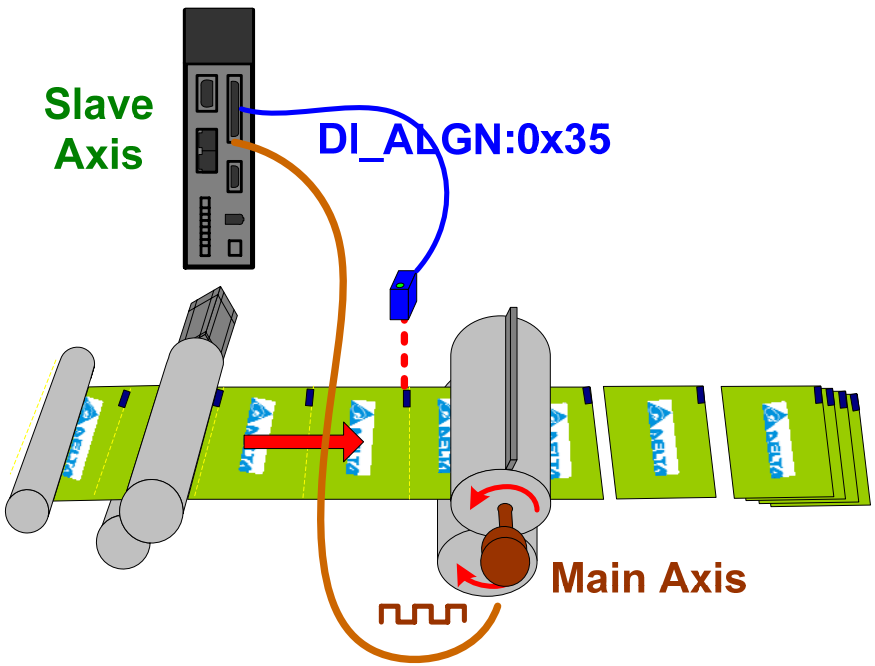
Machine position alignment.

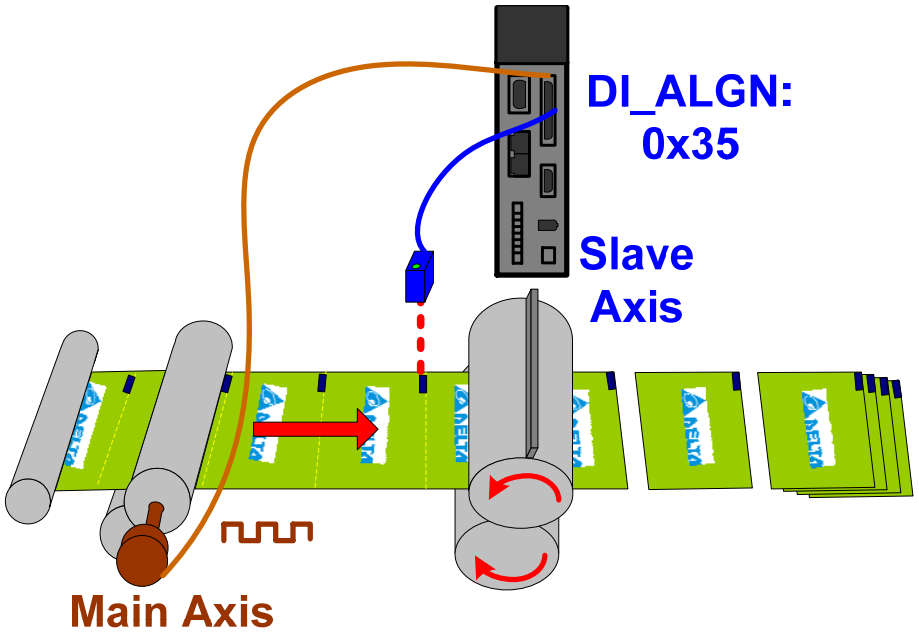


The Phase Alignment Function (3)

Where to install the sensor?

Adjust material sending mechanism or adjust cutter to fit the mark.

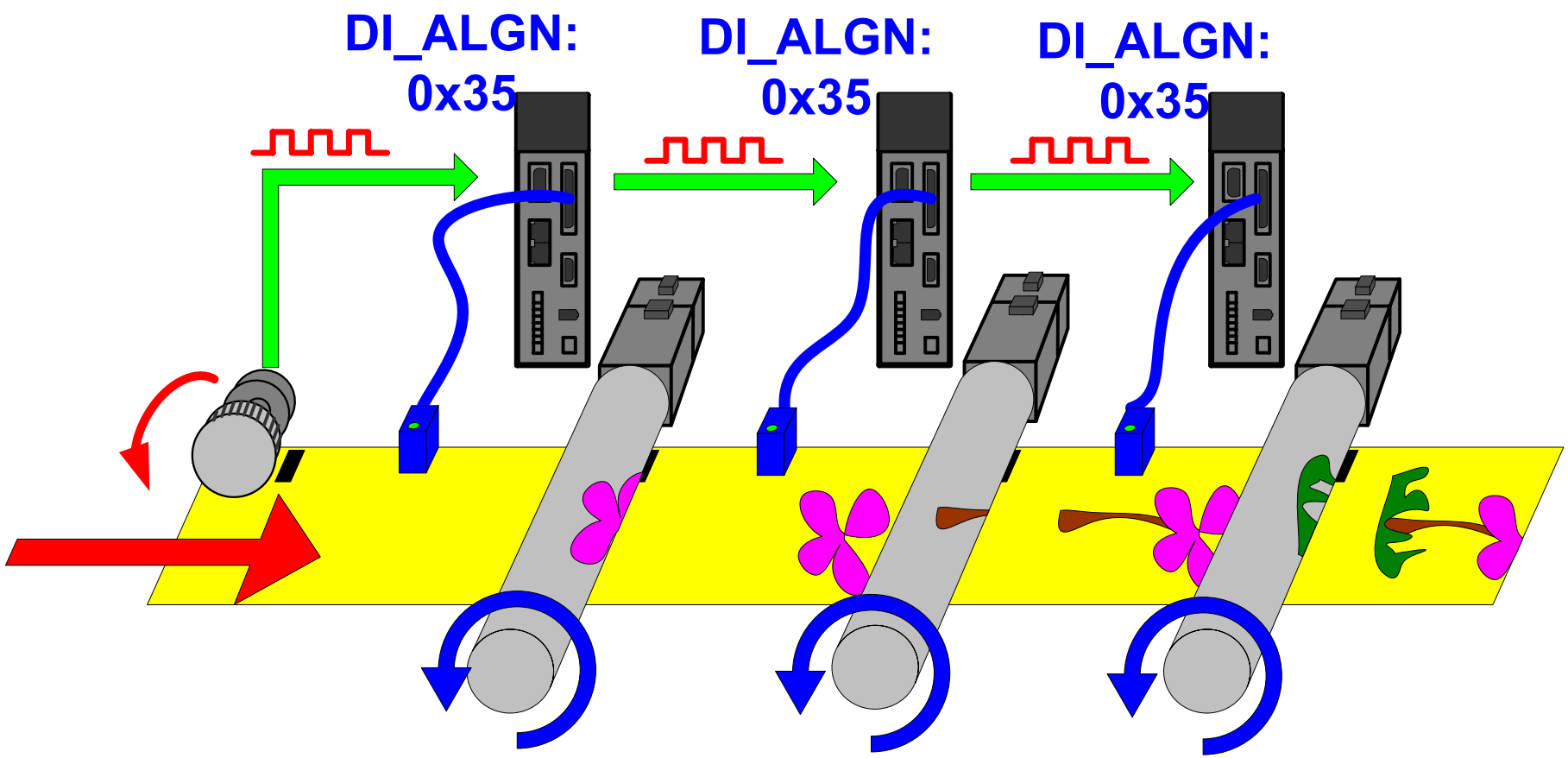




The Phase Alignment Function (4)

Where to install the sensor?

Adjust the printing rollers to fit the mark.



The Phase Alignment Function (5)

The Parameters

P2-73 is used to set the conditions for E-Cam phase alignment.

P2-73	DC	BA	UZ	YX

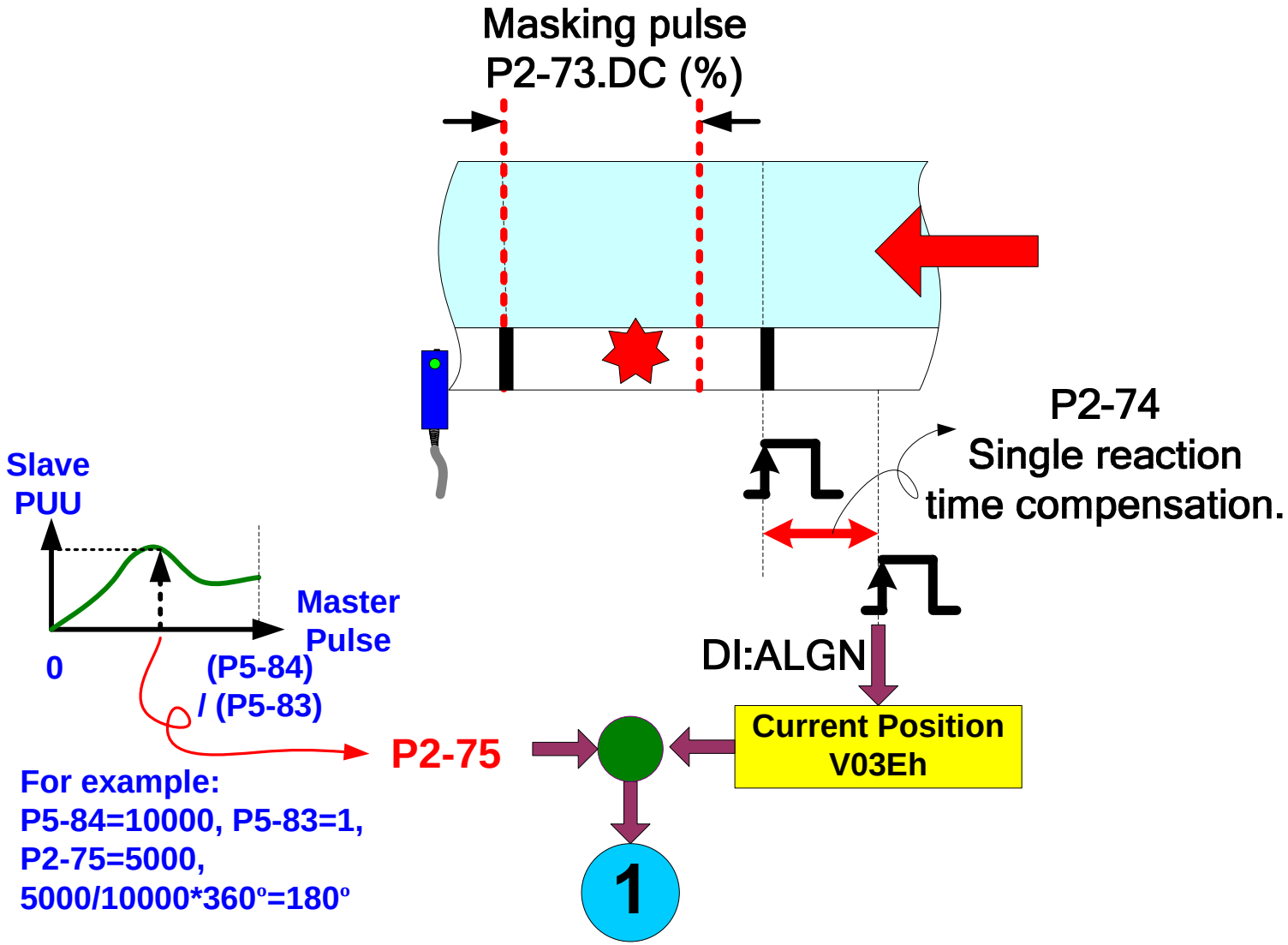
P2-73: Position alignment function for E-Cam curve.

DC	**Masking range (0~95%).**
BA	**PR number (0~63).**
UZ	**Max. allow correction rate (0~100%).**
YX	**Threshold for filter (0~95%).**

The Phase Alignment Function (6)

The function diagram

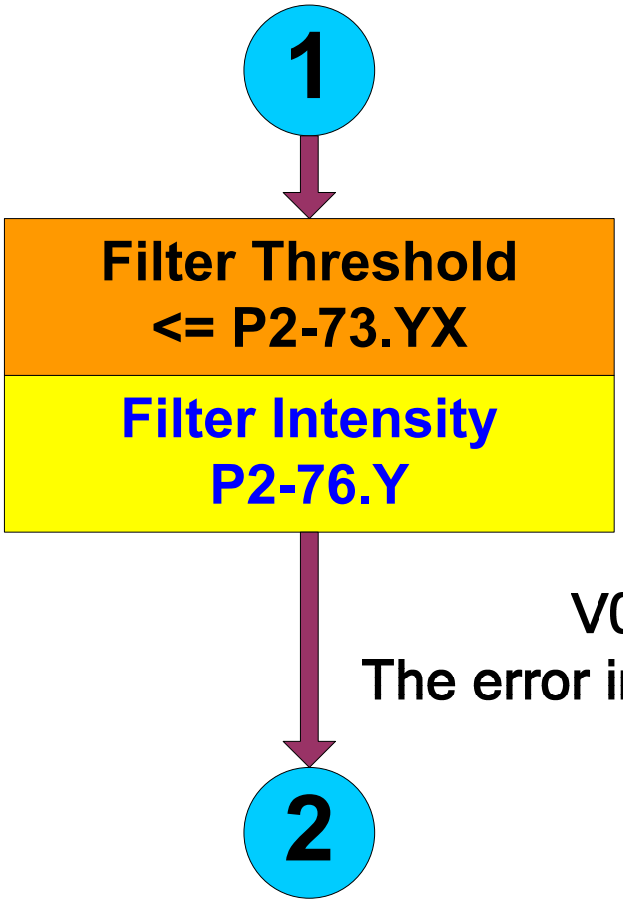
Masking and time compensation for digital input delay.



The Phase Alignment Function (7)

The function diagram

Define the filter function for averaging the error to avoid noise.



Error 1 < P2-73.YX < Error 2

Filter action, average before correction.

By pass filter, correct directly.

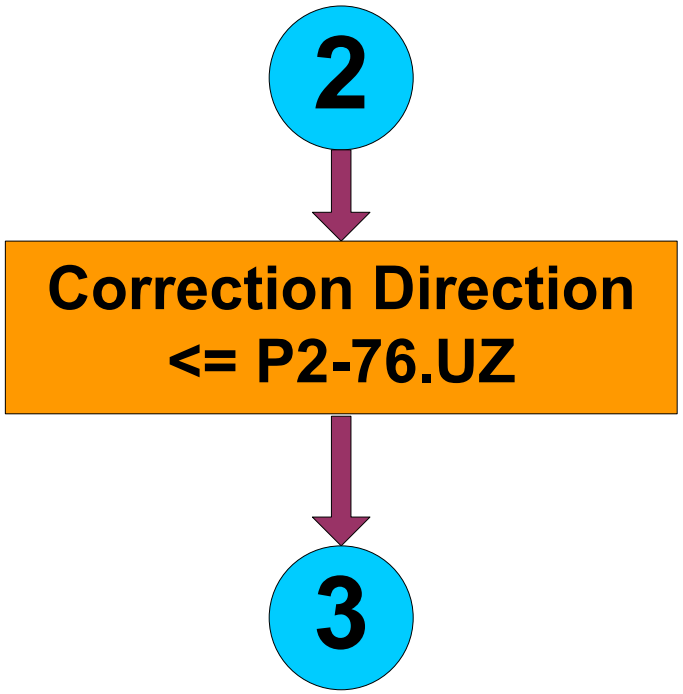
P2-76.Y=3 is recommended.

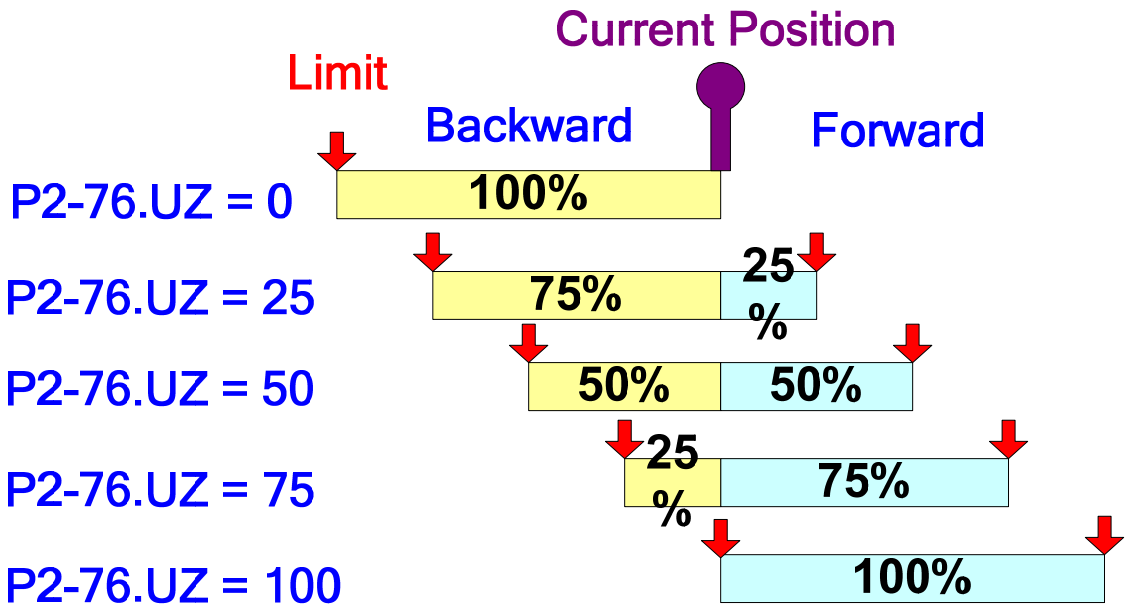
V055h
The error in percentage

The Phase Alignment Function (8)

The function diagram

Set the direction for correction. Positive cycle or negative cycle to the target.

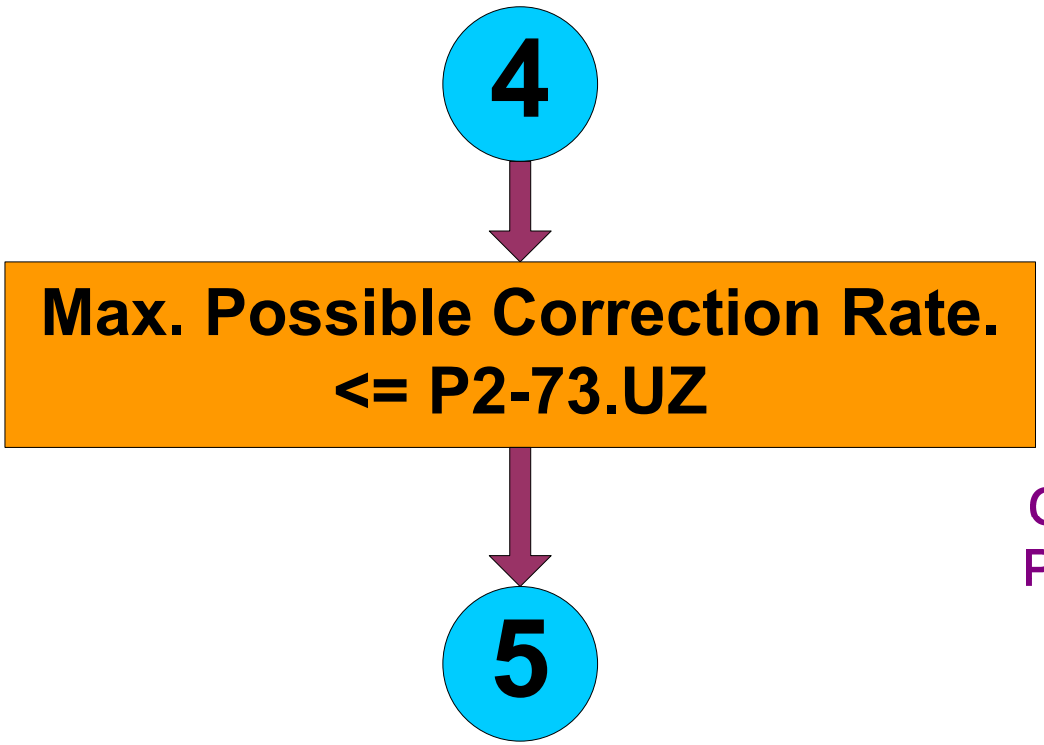




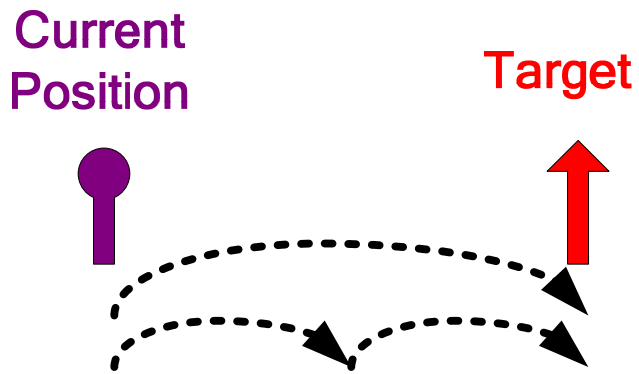
The Phase Alignment Function (9)

The function diagram

Set correction rate for adjustment within every cycle.



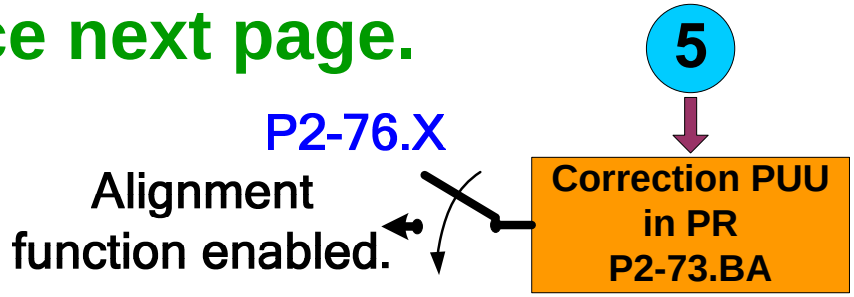
Avoid a jitter movement to set this data to a reasonable value.



The Phase Alignment Function (10)

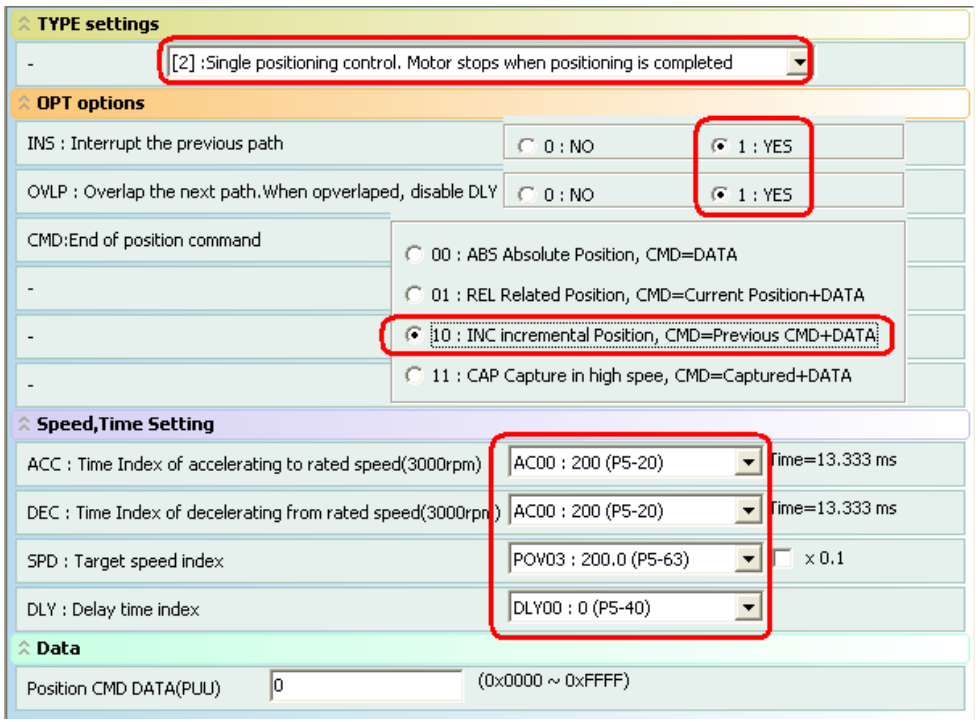
The function diagram

Enable the function and set the PR assigned by P2-73.BA properly (Type 2, INS, OVLP, Incremental, speed) . Reference next page.



P2-76.X

Bit	2	1	0
Function	Two point phase	Method to call PR	Alignment function
Description	0: Single point correction. 1: Phase correction on material.	0: trigger correction PR set in P2-73.BA manually. 1: trigger correction PR set in P2-73.BA immediately received DI_ALGN.	0: Disable 1: Enable

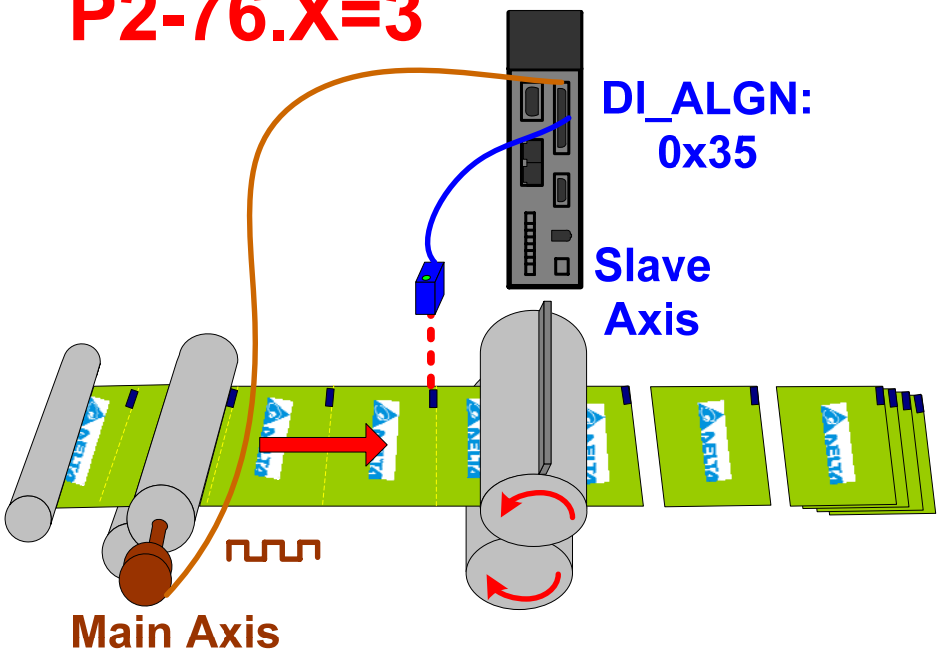


The Phase Alignment Function (11)

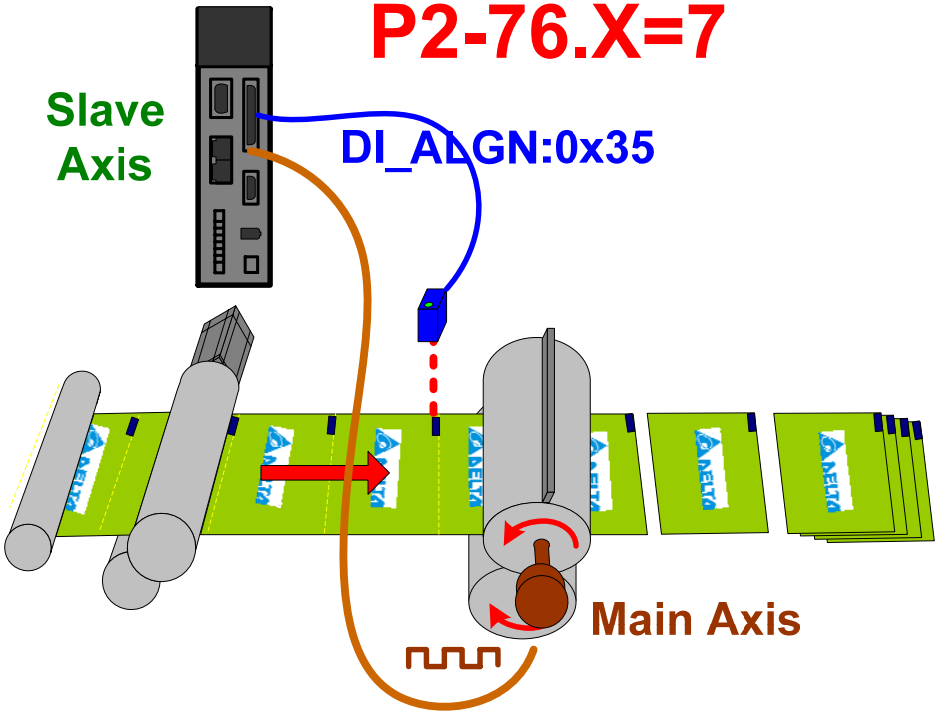
How to set P2-76.X

To adjust the phase of cutter or material is different in its settings of P2-76.X.

P2-76.X=3



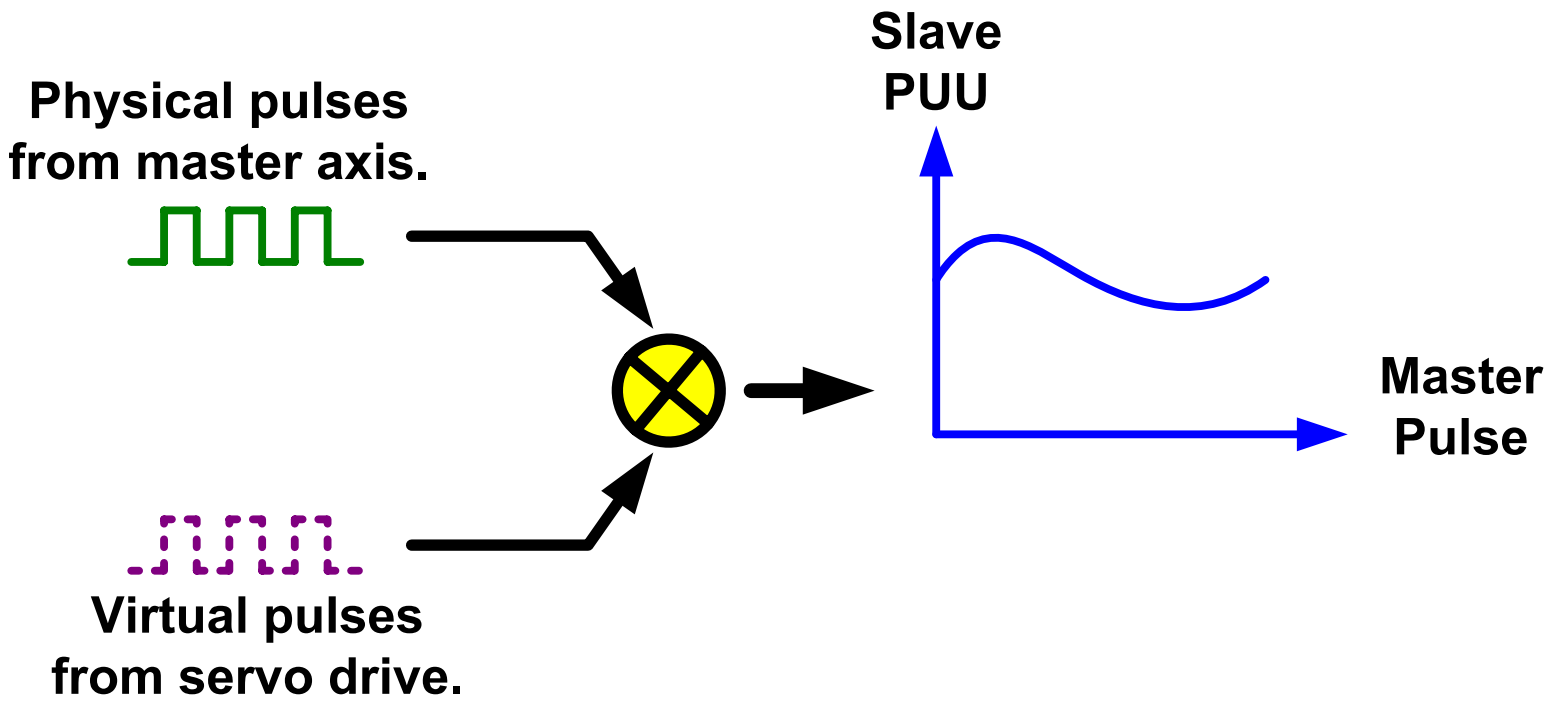
P2-76.X=7



Master Pulse Command (1)

Virtual master pulse generator

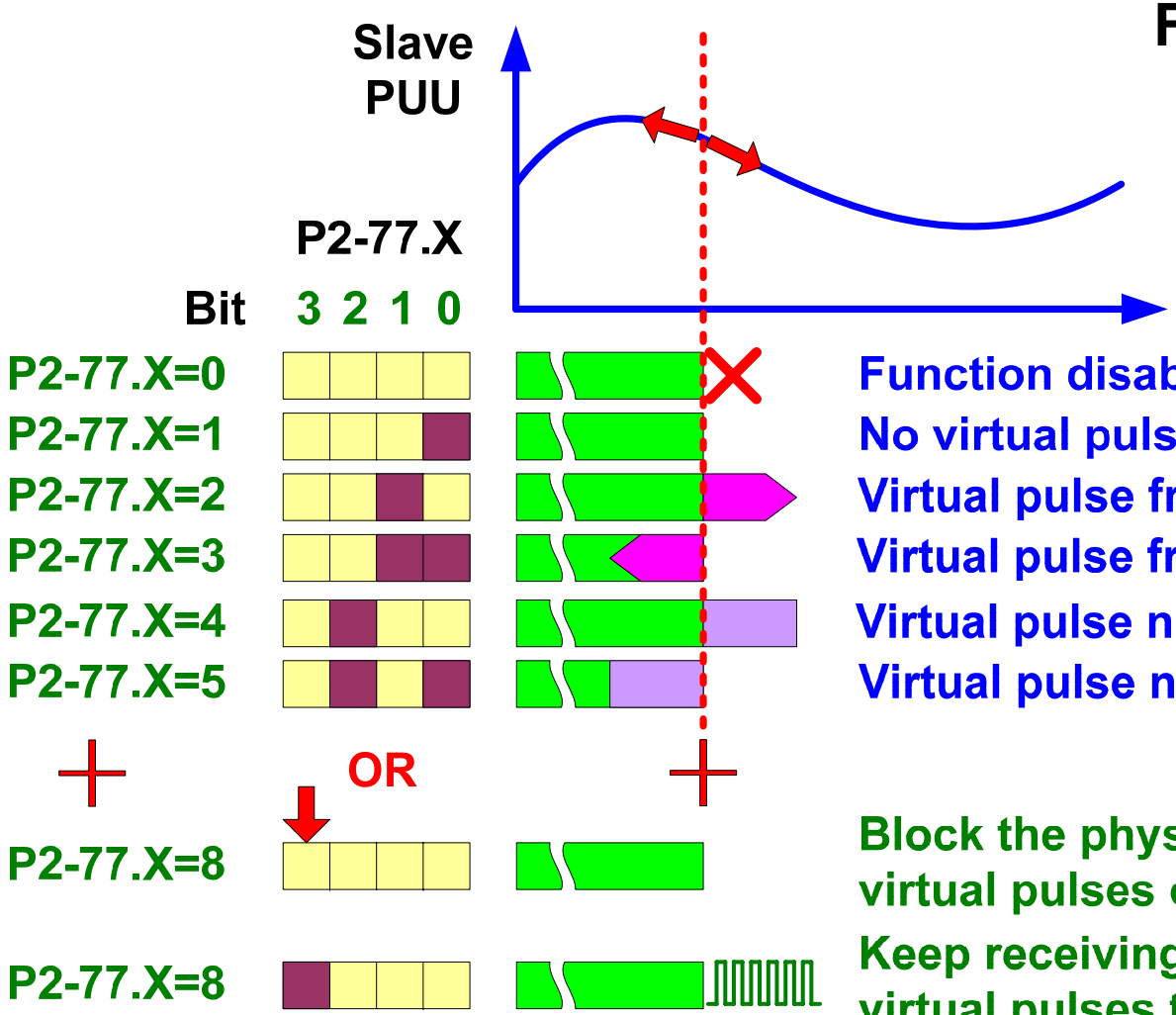
In order to adjust the relative positions of current motor position and the position on E-Cam curve, the new feature can take out physical pulses from master or add pulses into E-Cam system.



Master Pulse Command (2)

P2-77.X pulse modulation

This is for adding /subtracting pulses to the system.



Format of P2-77:

P2-77= UZYX

Function disabled.

No virtual pulses.

Virtual pulse frequency with +UZ Kpps.

Virtual pulse frequency with -UZ Kpps.

Virtual pulse number with +UZ Pulse.

Virtual pulse number with -UZ Pulse.

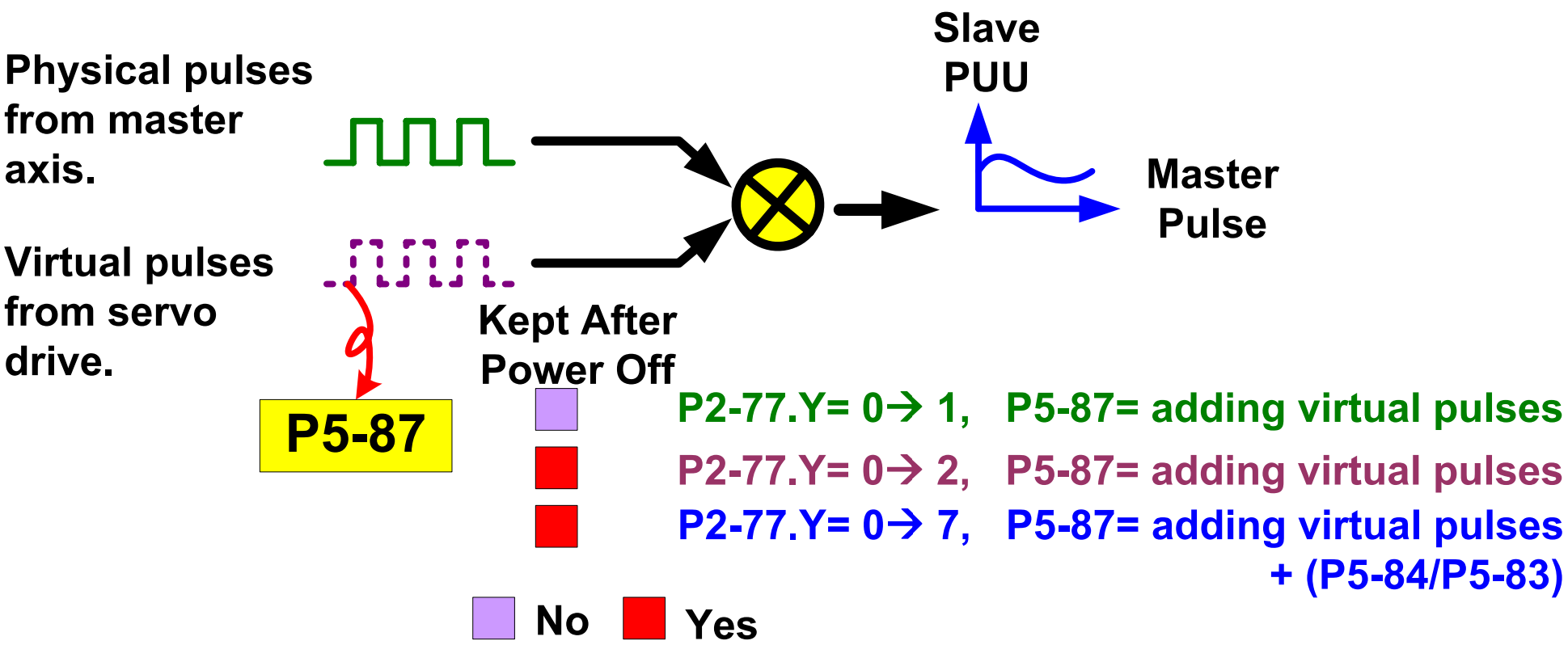
Block the physical pulses, and use virtual pulses only.

Keep receiving physical pulses and add virtual pulses together.

Mask Master Command (3)

P2-77.Y pulse to P5-87

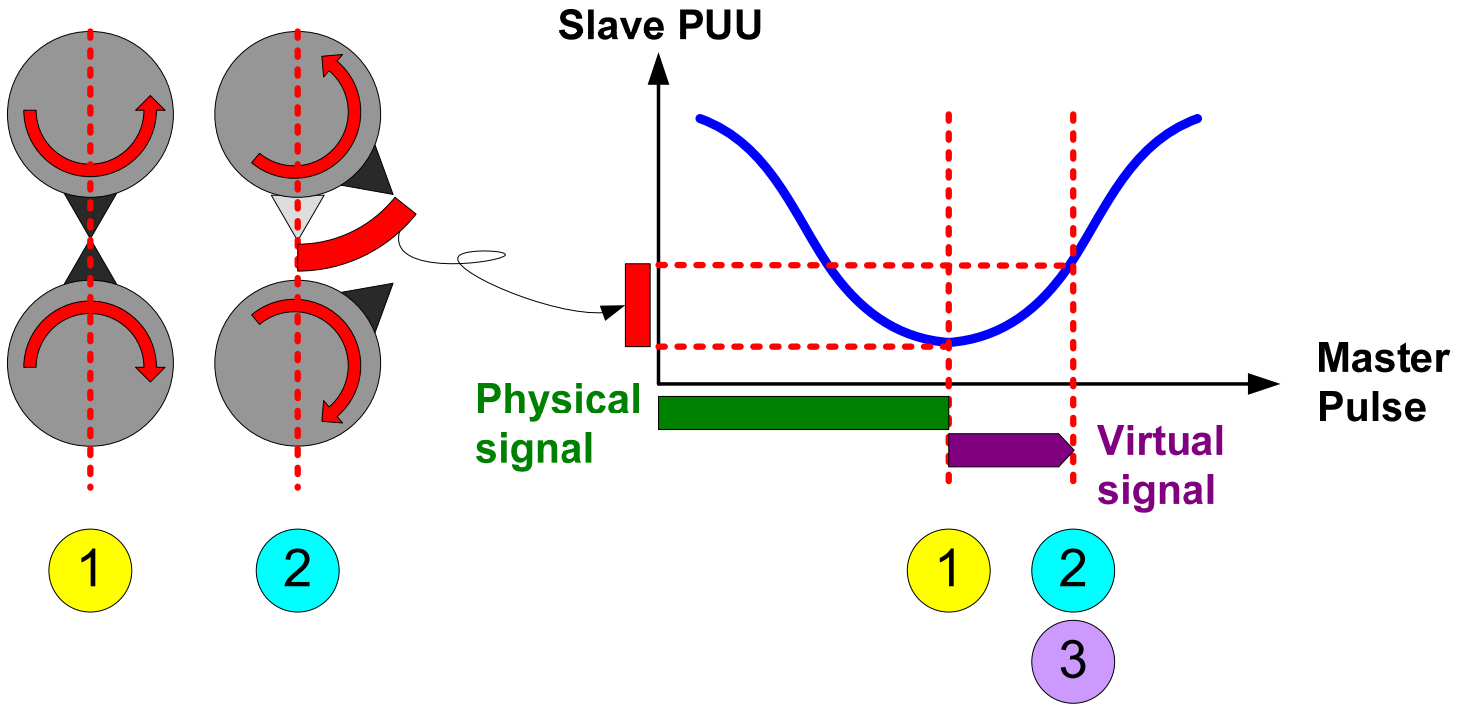
The adding pulses will be recorded into P5-87 by writing P2-77.Y.



Mask Master Command (4)

Example (1)

Adjust phase of cutter and record the number of pulses for delaying E-Cam engaging.



1 **P2-77 = 0x0502. Have a 5KHz virtual signal into E-Cam system and block physical master signal.**

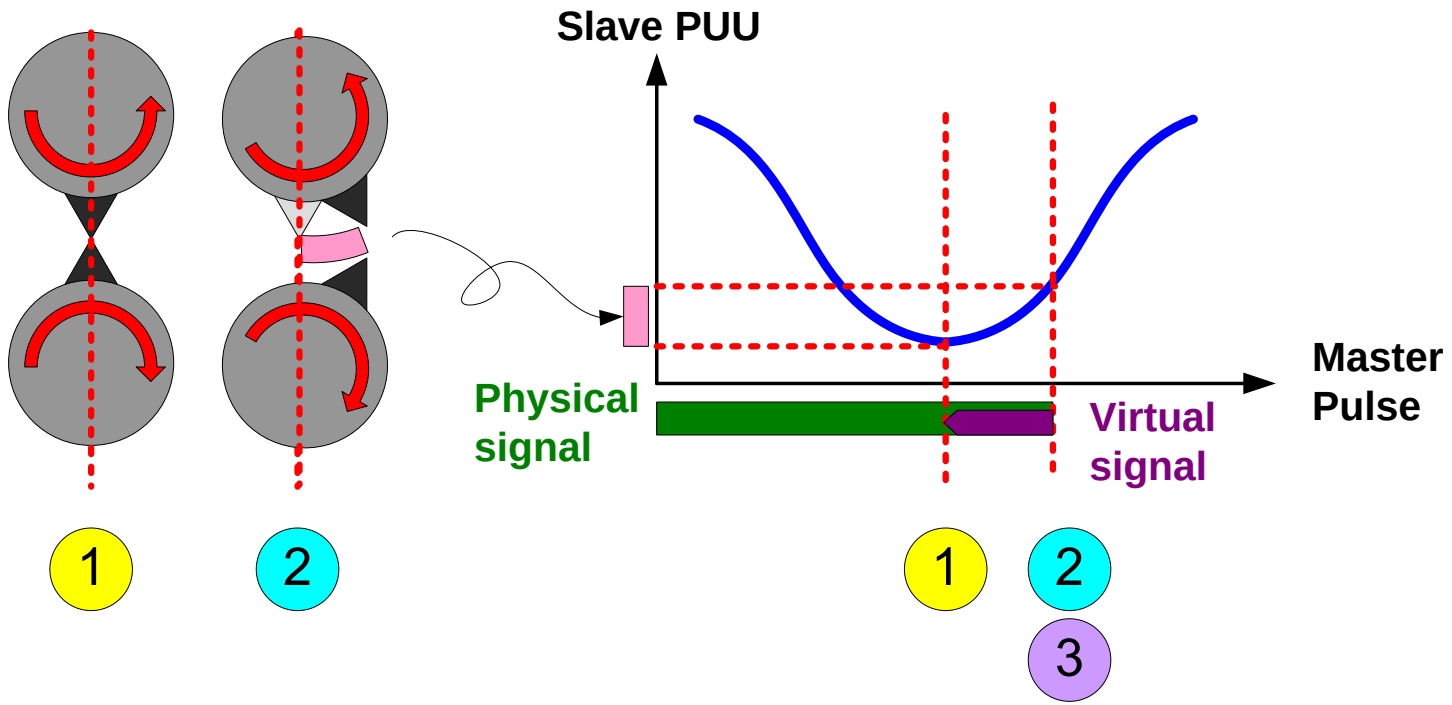
2 **P2-77 = 0x0000. Shut down the virtual signal generator.**

3 **P2-77 = 0x0020. Write the number of virtual pulses fed to P5-87 for offset purpose.**

Mask Master Command (5)

Example (2)

Adjust the cutter by inverse virtual signal.



1 P2-77 = 0x040B. Have a - 4KHz virtual signal into E-Cam system and accept physical master signal simultaneously.

2 P2-77 = 0x0000. Shut down the virtual signal generator.

3 P2-77 = 0x0030. Write (virtual pulse # + (P5-84/P5-83)) to P5-87 for offset purpose.

Thank You