# Homing of Gantry Axis

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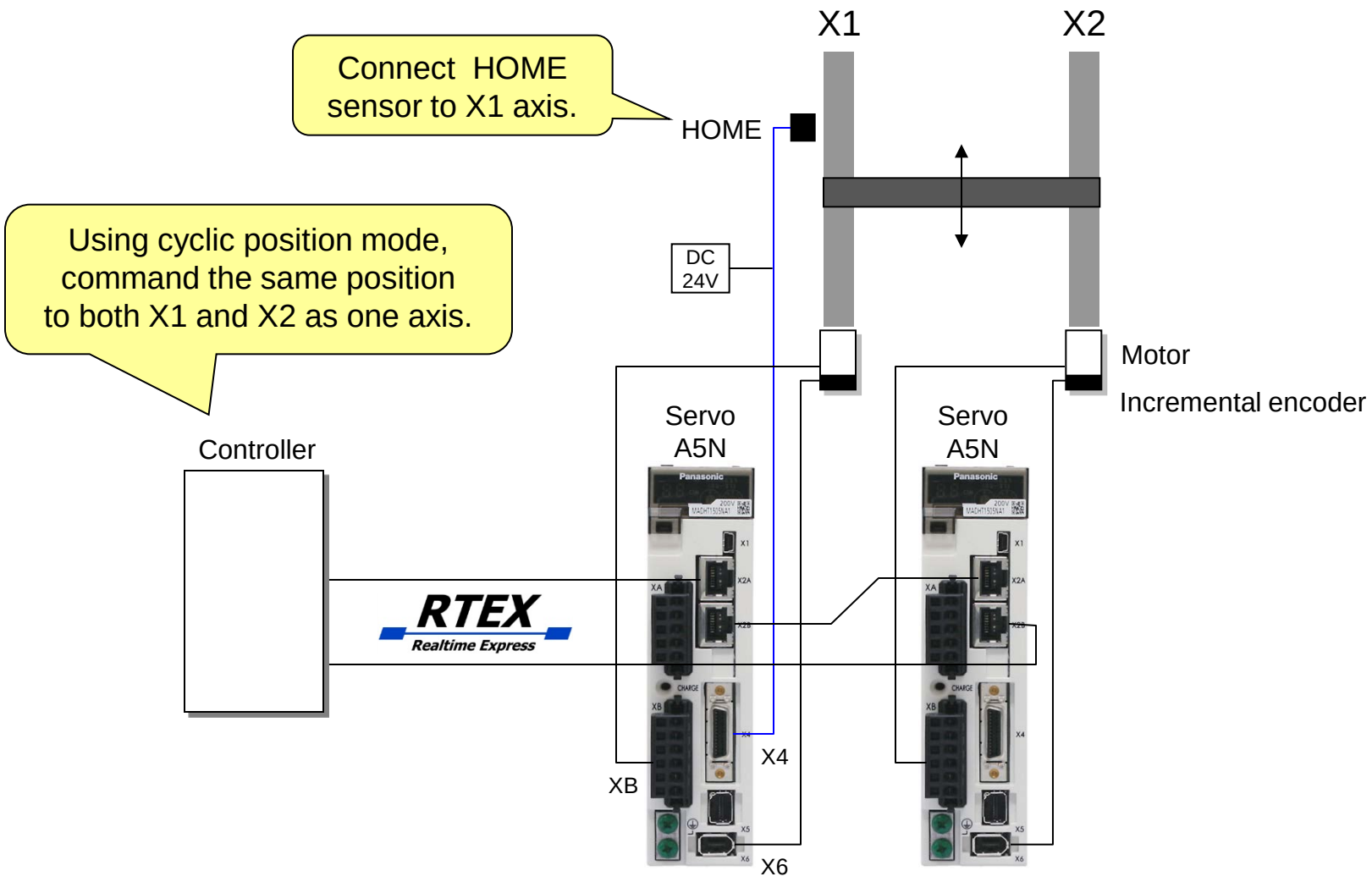
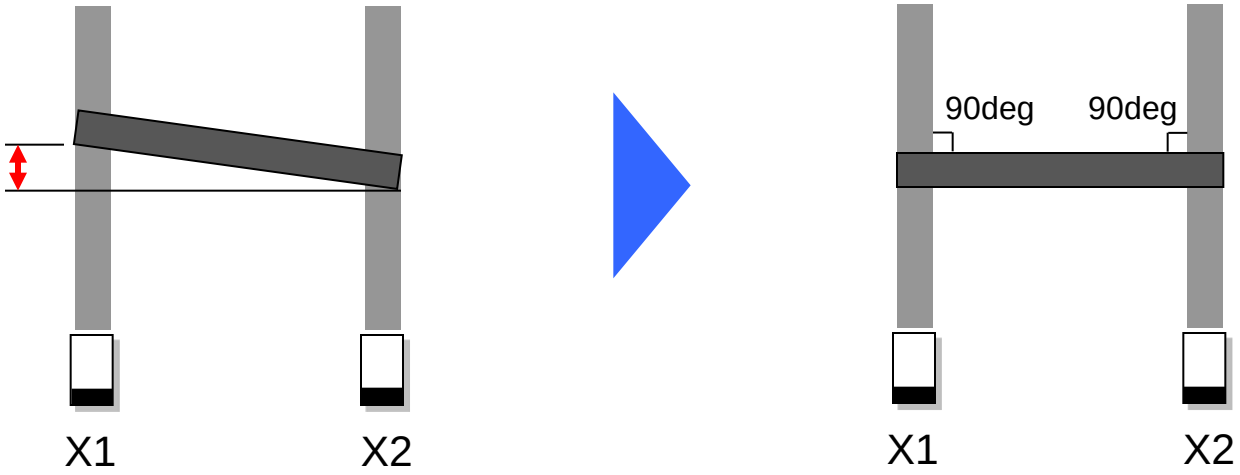
Appliances Company
Panasonic Corporation

# System Structure



# Step 1

To be right angles to the traversing direction, adjust X1 and X2 position with manual or JOG motion.
This Step 1 should be done when the motor is installed to a machine or the angle accuracy is spoiled by external force in power-OFF.

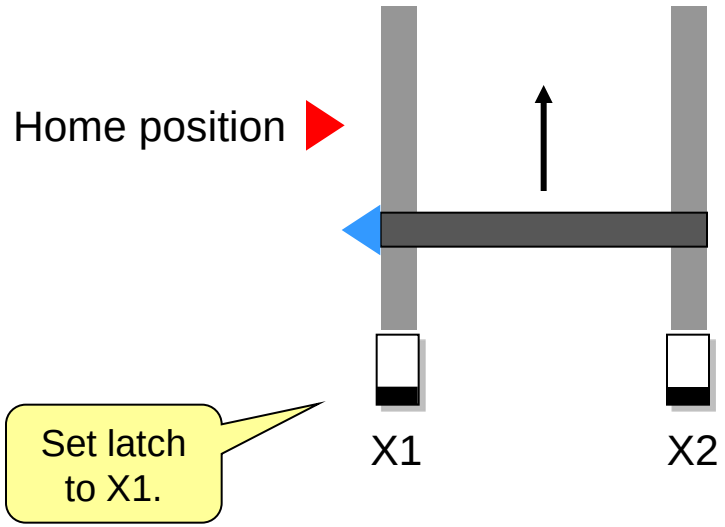


# Step 2

(1) Start the system with power-ON, and make X1 and X2 servo-ON.

(2) Set latching with home position to X1.

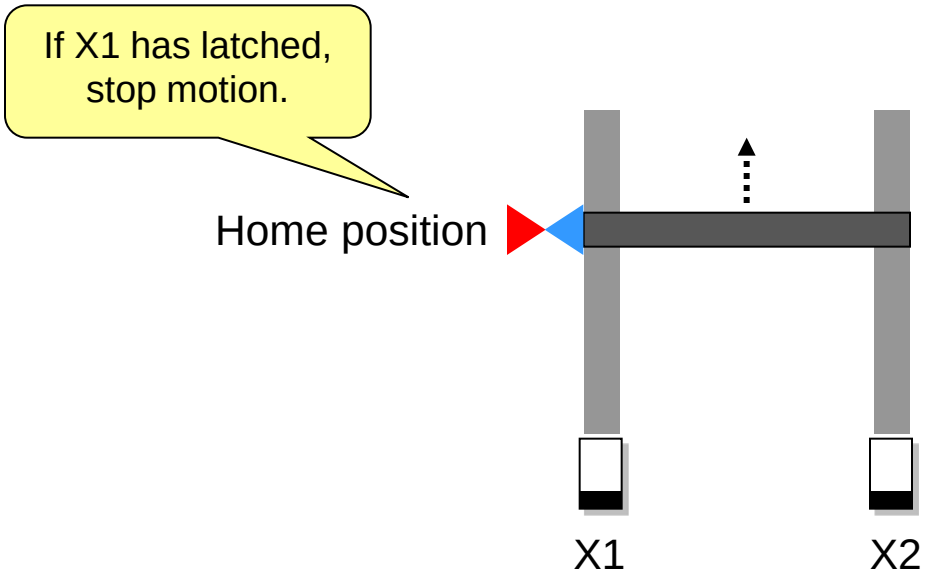
(3) Move toward home position with giving the same command position to both X1 and X2.




Example of home position: Encoder  zero or rising edge of HOME

# Step 3

If X1 has latched after going through home position, stop X1 and X2 motion.

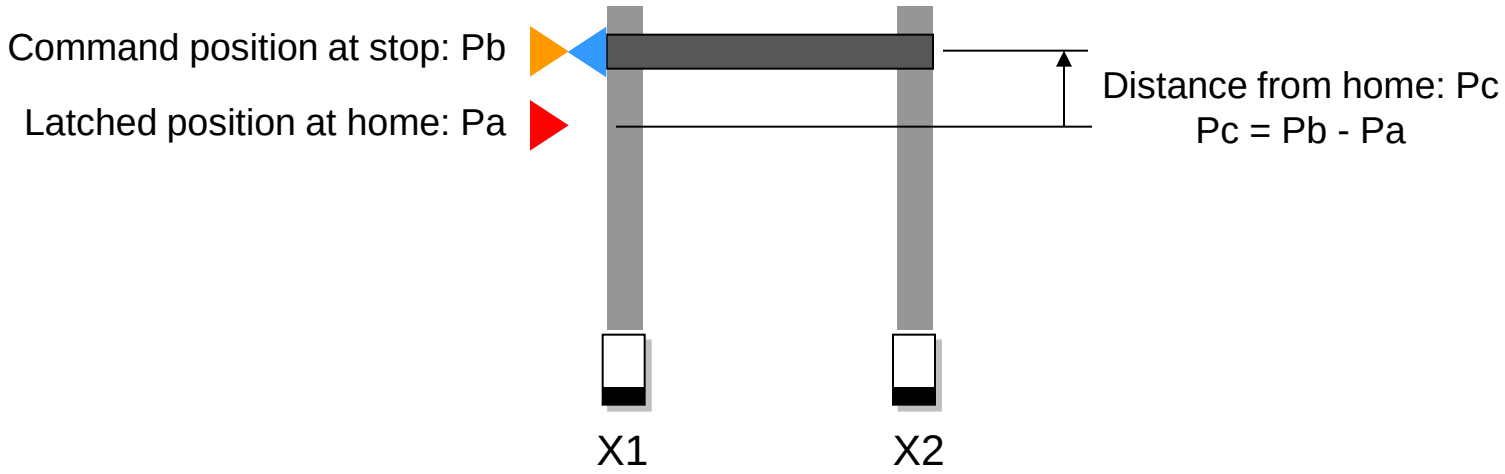


# Step 4

When Pa is latched position by X1 at home and Pb is command position at stop, Pc distance from home position can be calculated as follows:

Pc = Pb - Pa

Set Pc to both X1 and X2 at stop position, and the home becomes zero position for both X1 and X2.




At stop position, set command position (Command# 0x24, Type# 0x22) as follows:

X1 command position = Pc

X2 command position = Pc

If setting the home position to non-zero value, add offset.

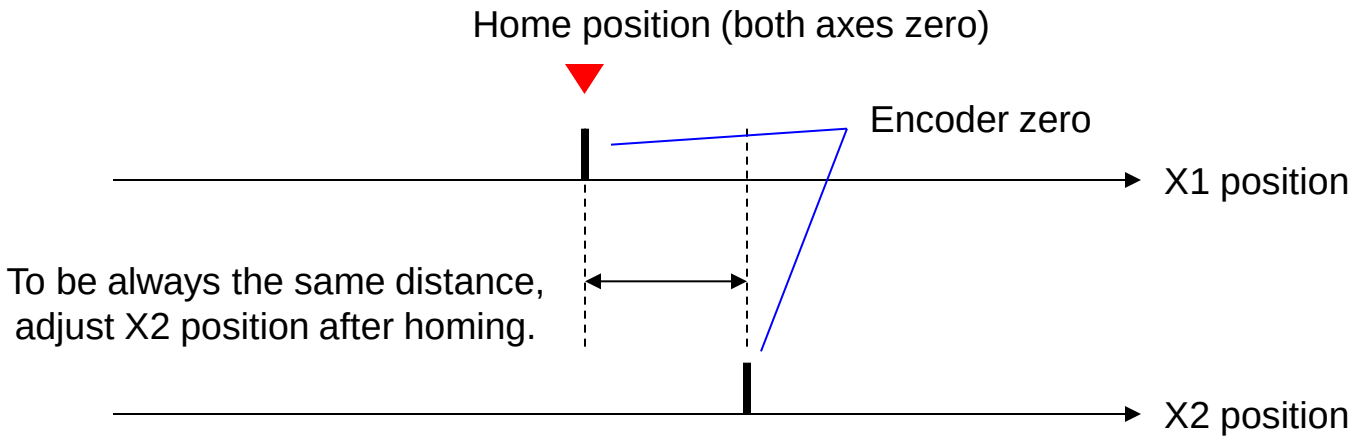
# Step 5

If setting home position to encoder zero, the angle accuracy spoiled in power-OFF can be realigned with adding the following process.

(1) After Step 4, set X2 latch by encoder zero, move both X1 and X2 until the latch is completed.

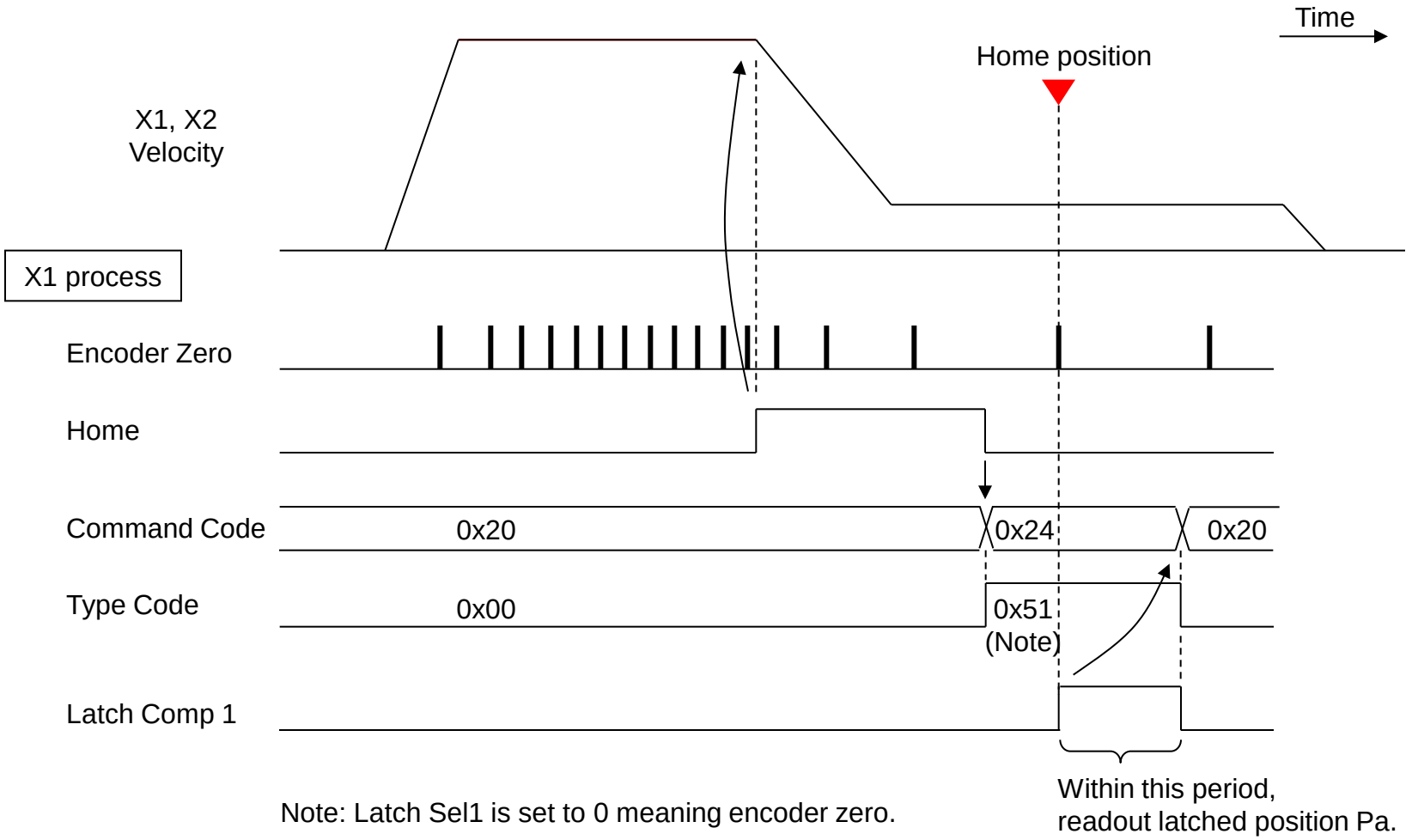
(2) If Step 1 is done, save the position latched in (1) into the controller as reference offset of encoder zero between X1 and X2.

(3) If Step 1 is not done in normal operation, calculate the difference between latched position in (1) and saved offset in (2), and move X2 with JOG to make the difference zero.



# Time Chart of Latching

An example of latching at the first encoder zero after going through HOME.

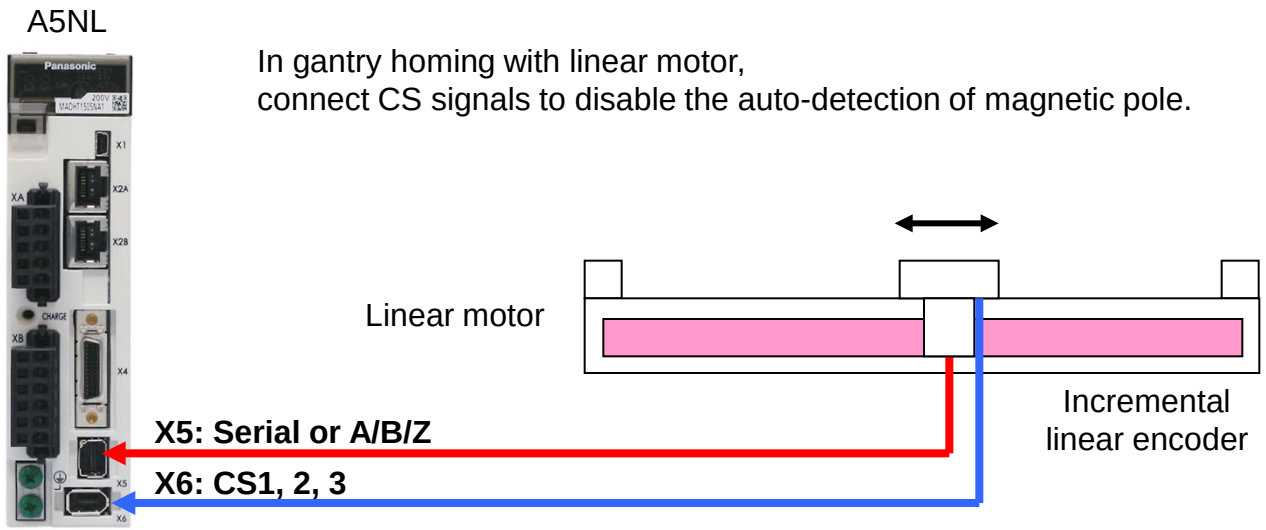



Note: Latch Sel1 is set to 0 meaning encoder zero.

# Linear Motor Case

If driving linear motor and using auto-detection of magnetic pole,
the homing method described in this document cannot be applied
because the angle accuracy is spoiled in motion detecting the magnetic pole
at the first servo-ON.

In linear motor case, CS signals should be used instead of auto-detection of magnetic pole, or absolute linear encoder is recommended to be homing-less system.




Note: Absolute linear encoder is more recommended in order to simplify the system.