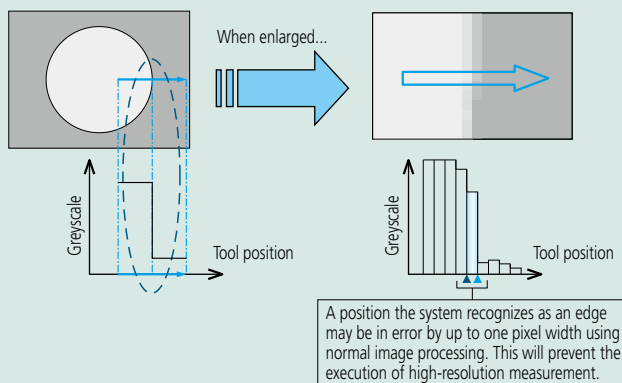
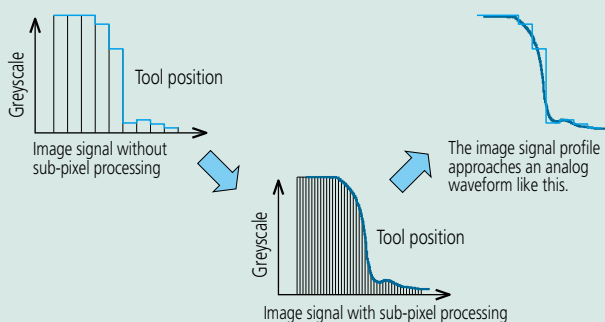


High-Resolution Measurement

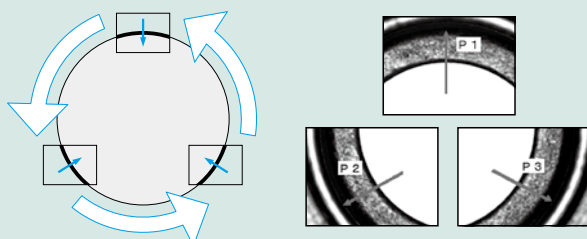


To increase the accuracy in edge detection, sub-pixel image processing is used. An edge is detected by determining an interpolation curve between adjacent pixel data as shown below. This technique allows measurement with a resolution higher than 1 pixel.

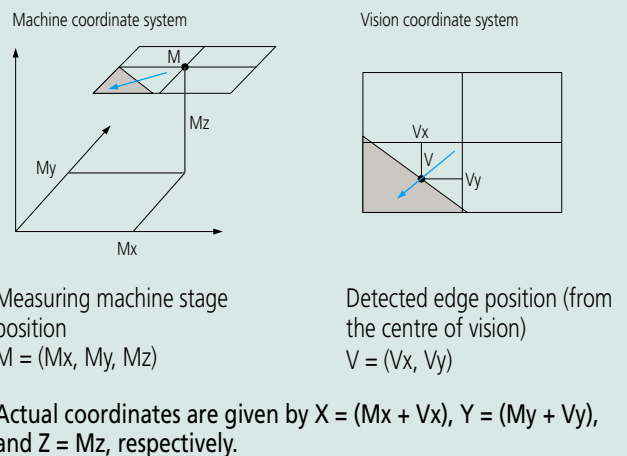


Measurement Along Multiple Portions of an Image

Large features that cannot be contained on one screen have to be measured by precisely controlling the position of the CCD sensor and stage so as to locate each reference point within individual images. By this means the system can measure even a large circle, as shown below, by detecting the edge while moving the stage across various parts of the periphery.



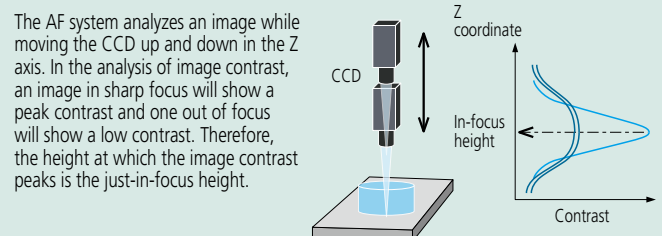
Composite Coordinates of a Point



Since measurement is performed while individual measured positions are stored, the system can measure dimensions that cannot be included in one screen.

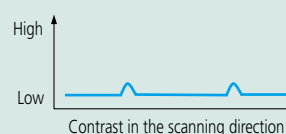
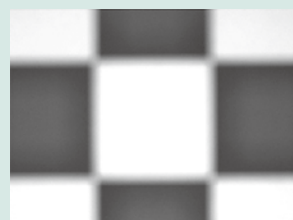
Principle of Auto Focusing

The system can perform XY-plane measurement, but cannot perform height measurement using only the CCD camera image. The system is commonly provided with the Auto Focus (AF) mechanism for height measurement. The following explains the AF mechanism that uses a common image, although some systems may use an AF laser.



Variation in Contrast Depending on the Focus Condition

Edge contrast is low due to out-of-focus edges.



Edge contrast is high due to sharp, in-focus edges.

