

Slit measurement of slot die

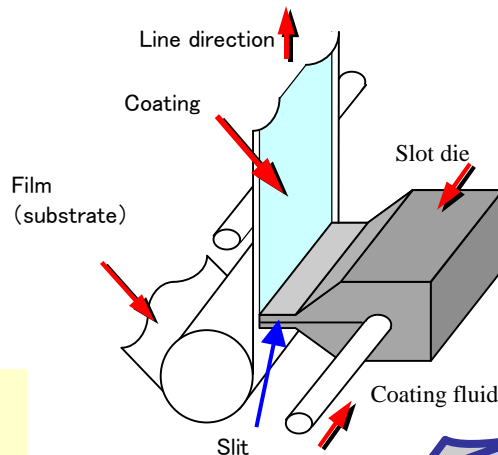
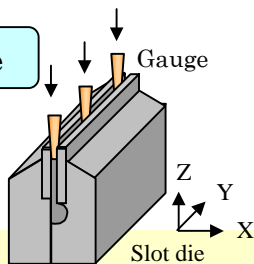
JPPN 2004-069393, JPPN 2004-069394, JPPN 2005-214864
 JPPN 2005-214865, JPPN 2005-214866, JPPN 2005-221305

Objective of research

- Measurement of slit with is important for slot die
- The measurement method is required to be robust, high resolution and high speed

Conventional method using gauge

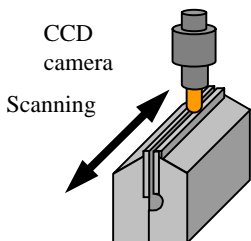
- Small measurement number : 30 points/1m
- Long time: 20 minutes
- Large deviation between operators



Development of a high-speed and high-accuracy method for slit width measurement

Principle

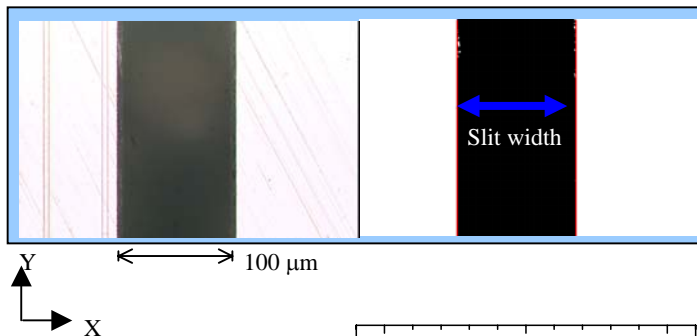
Scanning a CCD camera



Removal of the influence of intensity variation

↓
 Detection of edge position

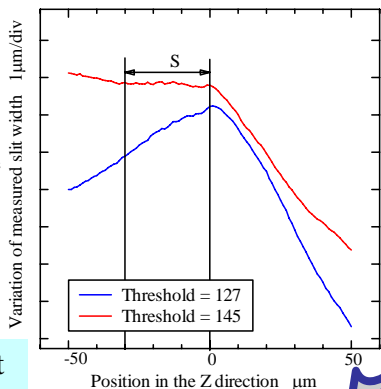
↓
 Calculation of slit width from edge positions



Error motions associated with scanning

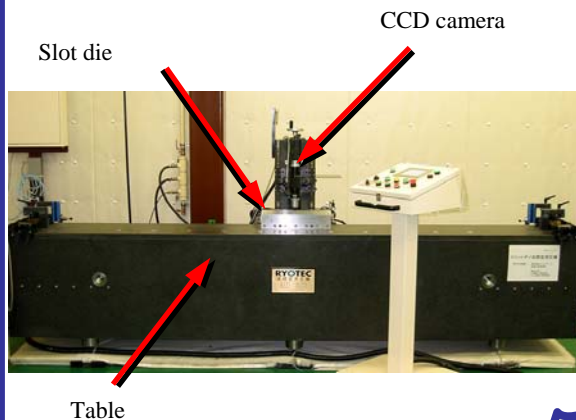
X-direction ... Removed by taking the difference of edge positions

Z-directions ... Removed by choosing a proper threshold



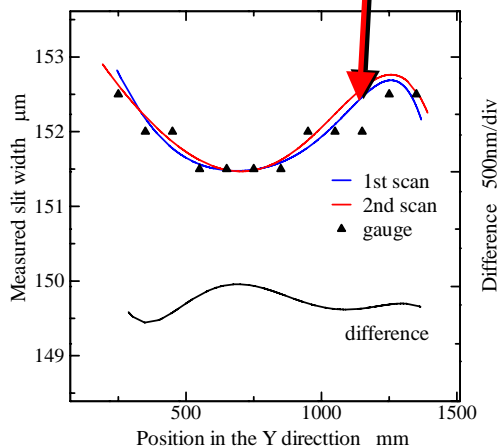
Accurate measurement without influence of error motions

Instrument



Results

Improvement of resolution



- Continuous measurement
- High-density of data 1000点/1m
- Short measurement time 30 seconds
- Can be used on a machine tool