

# 5. Determining the Accuracy

## 5.1. Accuracy Standards

Accuracy of the LM Guide is specified in terms of running parallelism, dimensional tolerance for height and width, and height and width difference between a pair when 2 or more LM blocks are used on one rail or when 2 or more rails are mounted on the same plane.

For details, see pages A-100 to A-108.

### ●Running parallelism

It refers to a parallelism error between the LM block and the LM rail datum plane when the LM block travels the whole length of the LM rail with the LM rail secured on the reference datum plane using bolts.

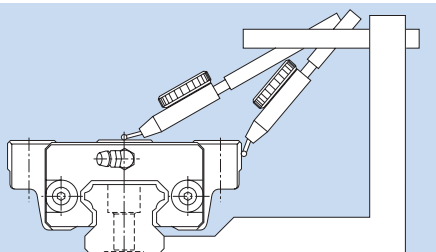


Fig. 1 Running Parallelism

### ●Difference in Height $M$

Indicates a difference between the minimum and maximum values of height ( $M$ ) of each of the LM blocks used on the same plane in combination.

### ●Difference in Width $W_2$

Indicates a difference between the minimum and maximum values of the width ( $W_2$ ) between each of the LM blocks, mounted on one LM rail in combination, and the LM rail.

Note 1: When 2 or more rails are used on the same plane in parallel, only the width ( $W_2$ ) tolerance and the difference on the master rail apply. The master LM rail is imprinted with "KB" (except for normal grade products) following the serial number.

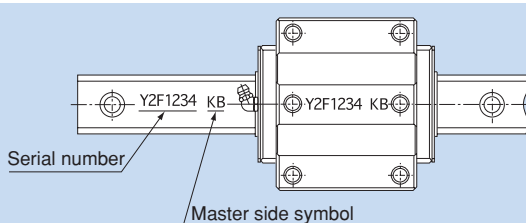


Fig 2. Master LM Rail

Note 2: Accuracy measurements each represent the average value of the central point or the central area of the LM block.

Note 3: The LM rail is smoothly curved so that the required accuracy is easily achieved by pressing the rail to the datum plane of the machine.

If it is mounted on a less rigid base such as an aluminum base, the curve of the rail will affect the accuracy of the machine. Therefore, it is necessary to define straightness of the rail in advance.