

## 1.1. Structure and Features of the Cross Roller Guide/Ball Guide

In Cross Roller Guide model VR, precision rollers are orthogonally aligned one after another in a roller cage that is combined with a dedicated rail having a raceway cut into a V-shape groove. When two units of the Cross Roller Guide are mounted in parallel, the guide system is capable of receiving loads in all directions. In addition, since the Cross Roller Guide can be given a pre-load, a clearance-free, highly rigid and smooth slide mechanism is achieved.

The Cross Roller Guide is used in the slide unit of various devices such as OA equipment and its peripherals, measuring instruments, precision equipment including a printed-board drilling machine, optic measuring machine, optic stage, handling mechanism and X-ray machine.

Ball Guide model VB is a low-friction, high-accuracy, finite LM system consisting of precision steel balls, arranged in short pitches in a ball cage model B, and a dedicated rail model V.

### ● Long service life, high rigidity

With a unique roller retaining mechanism, the effective contact length of the rollers is 1.7 greater than the conventional type. Furthermore, the roller pitch interval is short and a sufficient number of rollers are installed, thus increasing the rigidity by twice and the service life by six times greater than the conventional type. As a result, a safety-oriented design against vibrations and impact, which commonly occur in ordinary linear motion mechanisms, can be achieved.

### ● Smooth motion

With Cross Roller Guide model VR, the rollers are individually held in a cage and roller pockets formed on the cage are in surface contact with the rollers to increase grease retention. Thus, smooth motion with little wear and friction is achieved.

### ● High corrosion resistance

The Cross Roller Guide model VR series and the Ball Guide model VB series both include types made of stainless steel, which is highly resistant to corrosion.