

3.4. Calculating the Equivalent Load

The LM Guide can bear loads and moments in all directions, including a radial load (P_R), reverse-radial load (P_L) and lateral loads (P_T), simultaneously.

Applied loads include the following:

P_R : Radial load
 P_L : Reverse-radial load
 P_T : Lateral load

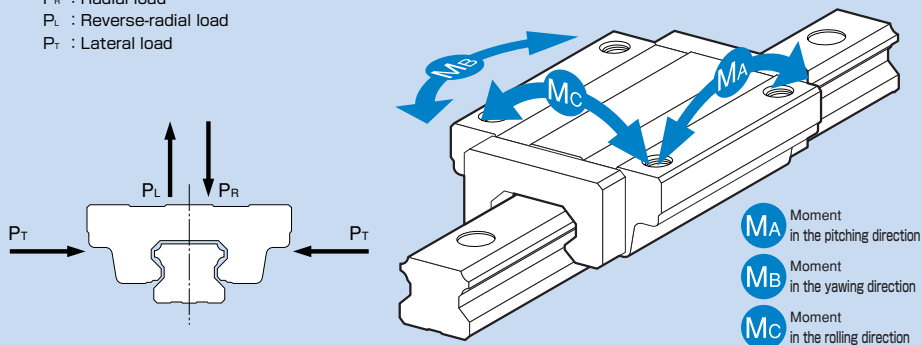


Fig. 9 Directions of the Loads Applied on the LM Guide

●Equivalent Load P_E

When two or more loads (e.g., radial load and lateral load) are simultaneously applied to the LM Guide, the service life and the static safety factor are calculated using equivalent load values obtained by converting all the loads into radial, lateral and other loads.

●Equivalent Load Equation

The equivalent load equation for the LM Guide differs by model. For details, see the section corresponding to the subject model in the "THK General Catalog - Product Specifications," provided separately.

Example of equation for LM Guide model HSR

The equivalent load when a radial load (P_R) and a lateral load (P_T) are applied simultaneously is obtained using the following equation.

$$P_E \text{ (equivalent load)} = P_R + P_T$$

P_R :Radial load
 P_T :Lateral load

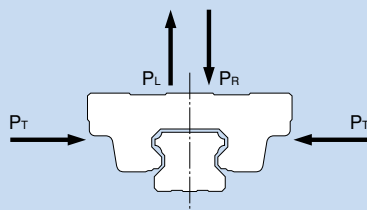


Fig. 10 Equivalent of Load of the LM Guide