

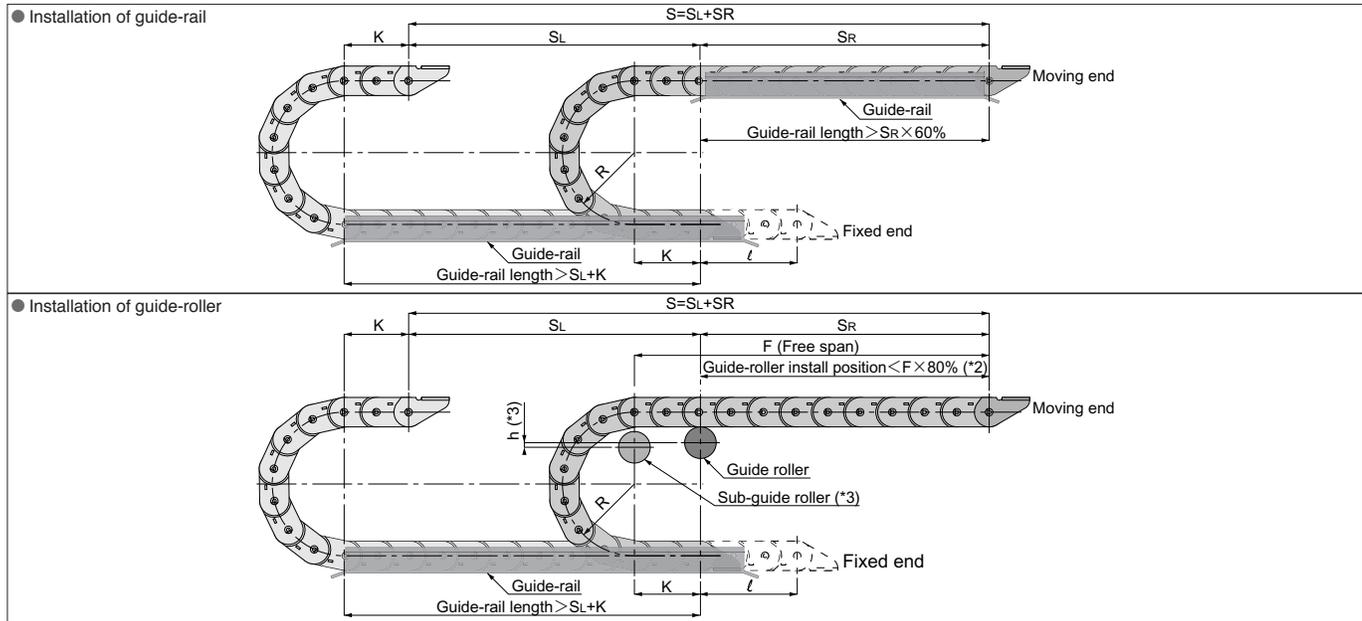


! Safety Instructions for safety device (guide-rail) installation

□ When Parailchain is used in long stroke or for long time even within the acceptable value of the free-span, the installation of safety device such as guide-rail can prevent sagging or loosening of Parailchain. (However, the moving speed and acceleration speed are limited by the installation.) Moreover, since the following instruction is only rough indication, please contact PISCO for details.

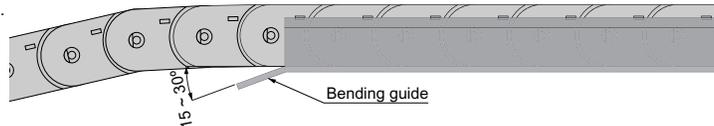
1. Installation of guide-rail and guide-roller

* Do not use guide-roller for the application of more than 1m/s moving speed. Please consider guide-rail installation instead.



- S: Transfer stroke
- SL: S/2 (When fixed end is located in the middle of transfer stroke)
- SR: S/2 (When fixed end is located in the middle of transfer stroke)
- K: Required minimum allowance length (Refer to page ???)
- t: Distance from middle point when fixed end is not located in the middle of transfer stroke

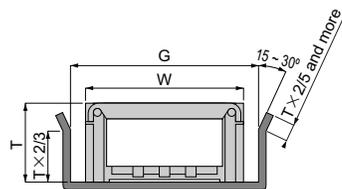
*1. Please create bending guide and avoid edge shape at the end of guide-rail.



*2. Multiple guide-rollers are required for the application using more than allowable free-span value. In this case, please contact PISCO.

*3. We recommend installing sub-guide-roller in order to put Parailchains smoothly on the guide-roller when the moving end moves from SL side to SR side. Since the install dimension differs by specification, please contact PISCO.

2. Rough dimensions for guide-rail design



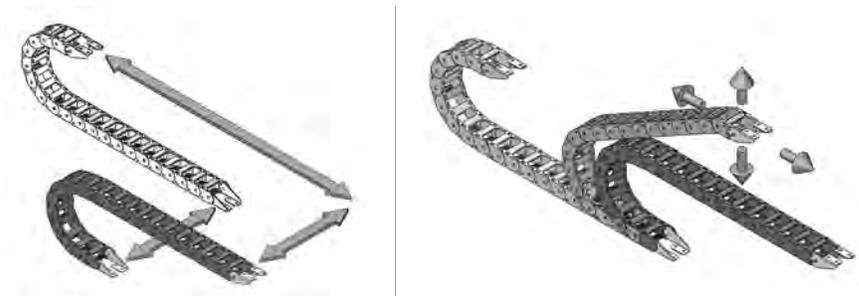
1. Estimation of G dimension

- $W < 100\text{mm}$
 $G = W + 5 \sim 10\text{mm}$
- $W > 100\text{mm}$
 $G = W + 15 \sim 20\text{mm}$

* As above dimensions are only rough and they differ by the specification, please contact PISCO for details.

3. Operation of multiple movements

When biaxial running or multiple movements are operated as shown below, please confirm the specification and contact PISCO.



4. Other safety instructions for long stroke and multiple movements operation

1. Using safety devices such as guide-rail or guide-roller cause abrasion where the devices and Plarailchain contact. As such, please apply material made of low surface sliding resistance for the safety devices.
Taping low friction sheet (such as super-high-molecular polyethylene sheet) to the all-contact face reduces the dust from abrasion and longer operating life is expected.
2. As for long stroke, Plarailchain is affected by the cables, etc. inside and might cause twist. Therefore, please insert cables with no winding or twisting.
3. The cables inside are easy to tangle for long stroke use. As such, please use divider or rack to divide room inside in order to avoid spiral twist of tubings/cables.
4. Long stroke or multiple movement operation cause accident such as protrusion of cables from middle part of Plarailchain due to pull-in effect. In order to prevent this, please fix cables firmly at the outlet of Plarailchain.
5. In the case of special operations, installation of safety device such as guide-rail may differ depending on the specification, please contact PISCO for details.