9 Linear guideways standard parameters

9.1 Quality classes

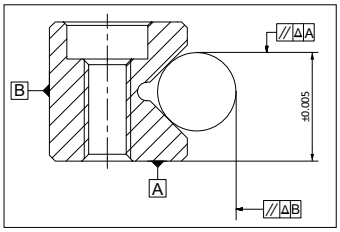
The running and positioning accuracy of an application directly depends on the geometric precision of the guideway (see chapter 7.1), its careful orientation (see chapter 14.9) and the accuracy and rigidity of the surrounding structure (see chapter 14.1 / 14.2).

9.2 Tolerance of the supporting surface to the track

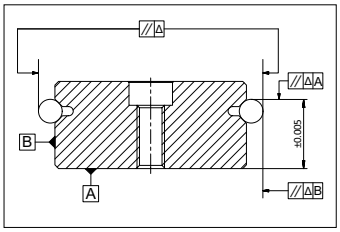
In addition to the previously mentioned geometric precision as set out in chapter 7.1, SCHNEEBERGER guideways are also manufactured to the dimensions of the supporting surface in relation to the track within a very tight tolerance (+/- 0.005mm).

Advantages:

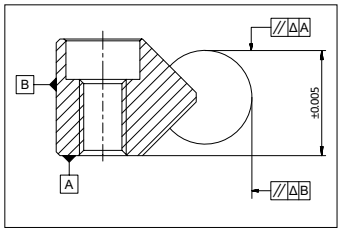
- Interchangeability is guaranteed at all times.
- In most cases additional matching of the guideways is surplus to requirement.



Type R, RN and RNG



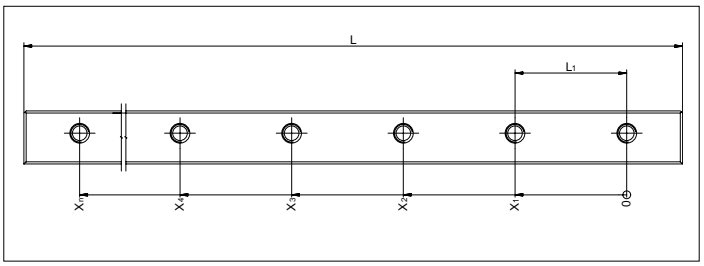
Type RD



Type N/O and M/V

9 Linear guideways standard parameters

9.3 Length tolerances and distances between fixing holes



Length	L ≤300 mm:	±0.3 mm
Length	L >300 mm:	±0.1 % of L
Hole pitch	L_1:	±0.3 mm
Mass	X_n ≤350 mm:	±0.3 mm
Mass	X_n >350 mm:	±0.08 % of x_n

The fixing holes are manufactured before the hardening process, which is why the length tolerances and spacings differ from the usual standards. The deviations can be offset using undercut fastening screws of type GD or GDN (see chapter 5) and/or by choosing a suitable hole (see chapter 7.10).

9.4 Operating temperatures

SCHNEEBERGER linear guideways can be used at operating temperatures from –40° C to +80° C. For brief periods temperatures up to +120° C are possible.

9.5 Speeds and accelerations

The following limit values apply for the standard designs:

Product	Max. speed	Max. acceleration
Linear guideways R, RD, RN, RNG, N/O and M/V	1 m/s	50 m/s²
Linear guideways RN and RNG with Cage control FORMULA-S	1 m/s	300 m/s²
Linear guideways N/O and M/V with cage control	1 m/s	200 m/s²

9.6 Friction, running accuracy and smoothness

When manufacturing the linear guideways, SCHNEEBERGER places great value on a high level of smoothness. Transitions, run-ins and run-outs or the quality of the synthetic materials and synthetic composite cages are given top priority. This also applies in respect of the rolling elements used, which must satisfy the most stringent quality demands.

For guideways with cages under normal operating conditions a friction factor of 0.0005 to 0.0030 can be assumed.