6 Special Requirements

6.1 Temperature Range

MINI-X can be operated in different temperature ranges. SCHNEEBERGER can deliver guideways with application-specific lubricants on request.

	Operating temperature
MINIRAIL	-40 °C to + 80 °C (higher temperatures on request)
MINISCALE PLUS	-40 °C to + 80 °C
MINISLIDE MS	-40 °C to + 80 °C
MINISLIDE MSQ	-40 °C to + 150 °C

6.2 Speeds and Acceleration

MINI-X are equipped for the following speeds and acceleration:

	max. speed	max. acceleration
MINIRAIL	5 m/s	300 m/s²
MINISCALE PLUS	5 m/s	300 m/s²
MINISLIDE MS	1 m/s	50 m/s²
MINISLIDE MSQ	3 m/s	300 m/s²

6.3 Cleanroom

In the cleanroom, it is necessary to reduce the number of particles as well as apply appropriate types of lubricating grease. SCHNEEBERGER delivers guideways for cleanroom classes up to ISO 6 on request. The guideways are packaged appropriately and lubricated according to requirements.

6.4 Vacuum

Corrosion resistant guideways are preferred for use in a vacuum. It is also necessary to avoid out-gassing of plastics, to ensure vented of attachment holes and to use an appropriate lubricant.

On request, SCHNEEBERGER can deliver the guideways packaged in a cleanroom and lubricated according to requirements.

	Vacuum ranges for standard MINI-X products:
MINIRAIL	10^{-7} mbar (HV). 10^{-9} mbar (UHV) on request. The values apply without wipers
MINISCALE PLUS	On request
MINISLIDE MS	10^{-7} mbar (HV)
MINISLIDE MSQ	10^{-9} mbar (UHV)

Notes: the suitability for a vacuum depends on the materials used.

6 Special Requirements

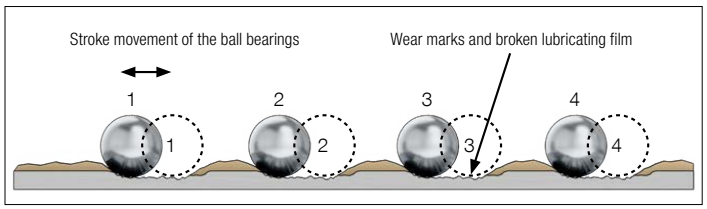
6.5 Corrosion Resistance

Corrosion protection is not just required in a cleanroom or vacuum. Medical, laboratory or food applications demand corrosion-resistant steel, as used in all MINI-X products.

6.6 Short Strokes

The effects of short strokes include point compression along the tracks and inadequate lubrication. As a result, short strokes reduce the service life of the guideway. This can only be reliably determined by means of experimentation.

6.6.1 Short Strokes with MINISLIDE

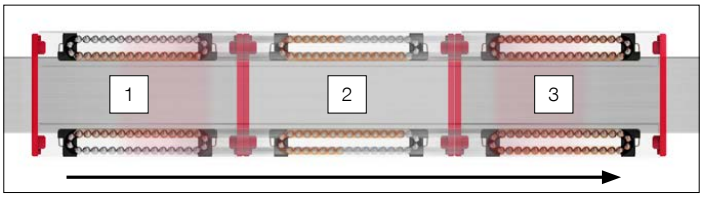


The stroke length of the guideway is so low that the rolling elements cannot pass the position of the next rolling element. As a result, local wear marks form on the tracks. Overstraining the tracks with short strokes leads to material damage which inevitably leads to the loss of preload. The accuracy of the guideway can consequently be reduced which can lead to premature failure.

Additionally, high-frequency strokes can break the lubricating film, further exacerbating wear. With suitable lubricants and regular strokes along the entire stroke length, better lubrication can be achieved, delaying the effects of material wear.

6.6.2 Short Strokes with MINIRAIL and MINISCALE PLUS

In the starting position (1), only the ball bearings directly under load are lubricated. Once the carriage moves to the right (2), a section of the ball bearings takes up the lubricant via the guideway. Only once position 3 has been reached will all of the ball bearings and all four corners of the ball recirculation be lubricated.



A short stroke is when the stroke of the carriage corresponds to less than twice its length. This can lead to damage, particularly in the redirection unit. Regular lubricating strokes along the entire stroke length at a minimum of twice the length of the carriage ensure better lubricant distribution, protecting the guideway from premature wear.

We recommend using LUBE-S long-term lubrication for short strokes.
(see chapter 8.1).