Lubrication

Lubricants lined up for smooth operation

Linear motion guides are found in machine tools, machining centres, manufacturing robots, measurement and control systems as well as in medical diagnostic scanners. Accurate straightness and evenness of all components is a prerequisite of their correct function. Other crucial factors are accurate positioning, repetitive accuracy and wear-free operation under high load, shock loading and short reciprocating movements. Quiet running is expected at high speed and acceleration as well as good resistance to radiation and aggressive media.

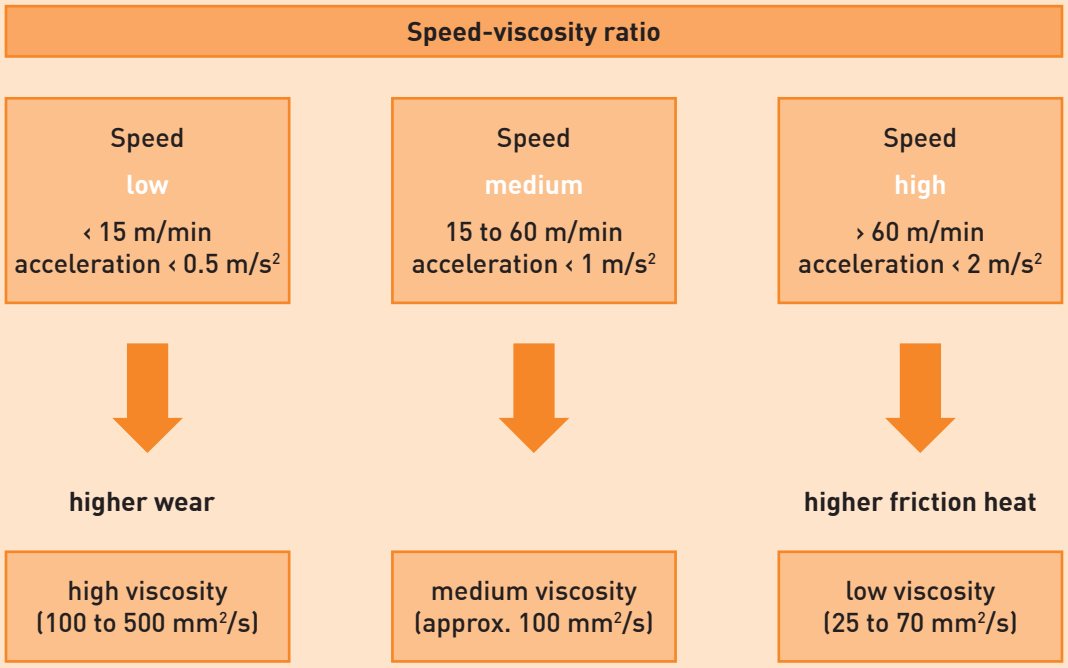
These are taxing requirements. As the field of automation is continuously developing, producing ever more linear drives and guideways, these requirements will continue to become yet more demanding – for the components as well as for the lubricants used.

How lubricants must perform

The choice of lubricant has a strong impact on the service life and performance of linear motion guides.

We will provide you with the right lubricant, which must ensure the following:

- Lowest torque when starting up the system, i.e. under mixed-friction conditions
- Wear protection of the linear motion guide components
- Noise-dampening effect at high speeds
- Good corrosion protection when exposed to aggressive media
- Sealing effect protecting the components against contamination



Lubrication

Grease lubrication

Because of a trend towards minimum quantity lubrication, longer lubrication intervals and simplified design there is increasing demand for special lubricating greases offering high performance and good corrosion protection.

Benefits: grease lubrication offers better emergency running characteristics, better noise dampening and a reliable sealing effect.

Linear type	Application / requirement	Selection criterion	Product	Remarks
SBI-series	Universal	Low speed	Klüberplex BEM 41-141	Lubricating grease, good adhesion and sealing effect
		Medium speed		
		High speed		
	Food-processing and pharmaceuticals industry		Klüberplex UH1 14-222	Meets USDA H1 and NSF H1 requirements

NLGI grade 1 greases can be applied to the lubricating nipple of a linear motion guide by means of a pressure grease gun. If the component has no lubricating nipples, the grease can be brushed directly onto the sliding surfaces of rail. If an even, thin grease film is desired, a solvent may be added to the grease for dispersion.

Grease relubrication

- ❏ We recommend cleaning the guide rail with a lint-free cloth prior to relubrication.
- ❏ The relubrication quantity is approx. 50% of the initial lubrication quantity.
- ❏ Frequent relubrication is desirable, i.e. application of small quantities at shorter intervals.
- ❏ If a different lubricant is used for relubrication purposes, compatibility with the original lubricant should be determined. Greases used for relubrication should match the previous grease's basic composition (base oil type, thickener, base oil viscosity, NLGI class). Please check with the grease manufacturer.

Relubrication or lifetime lubrication?

Shorter relubrication intervals can be expected with extreme operating conditions:

- ❏ High load $C/P < 20$;
  C = basic dynamic load rating in N;
  P = equivalent dynamic load in N
- ❏ Short strokes; micro-movements
- ❏ High temperatures > 70 °C
- ❏ Aggressive media or radiation
- ❏ Insufficient sealing

A general formula to calculate the relubrication intervals in linear motion guides does not yet exist. Factors like the type of linear guide used, variations in design, the quality of sealing and operating conditions must be considered, all of which makes the determination of correction factors a difficult task.

Lubrication gun

Grease gun with one hand operation.
With 3 different nozzles to suit all sizes,
excluding grease. DIN 1283

Ordering example: GR-0002

Lubrication Cartridge

For more information please contact us.

Lubrication interval

Size	interval (km)
SBI 15	1000
SBI 20	1000
SBI 25	1000
SBI 30	900
SBI 35	500
SBI 45	250
SBI 55	150
SBI 65	140

Lubricants intervals vary according to the environment and working condition of machine. Therefore, above lubricant intervals are recommended. Do not mix oil and grease systems.

Lubrication volumes

[unit: g]

Size	volume at installation	volume at relubrication
SBI 15	0.8 - 1.1	0.5
SBI 20	1.1 - 1.4	0.6
SBI 25	1.6 - 2.1	0.9
SBI 30	2.4 - 3.0	1.3
SBI 35	4.1 - 5.0	2.5
SBI 45	5.6 - 6.5	3
SBI 55	6.1 - 7.1	3.5
SBI 65	8.0 - 9.0	4.1