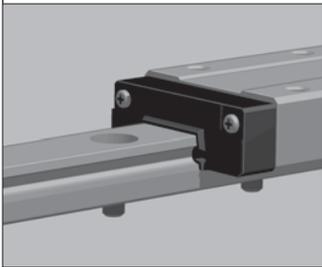
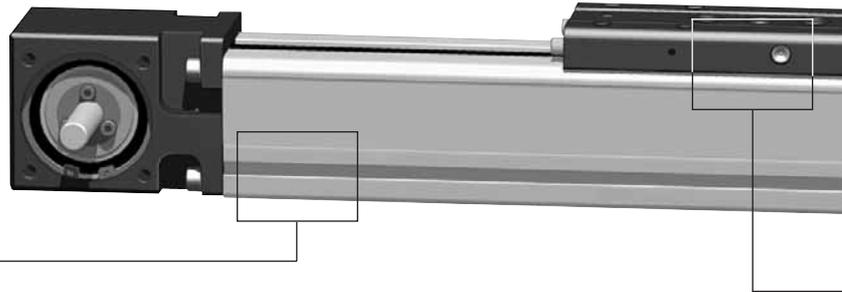


WIESEL *SPEEDLine*[®]

New technology right to the centre!

WIESEL *SPEEDLine*[®] WH40

A linear drive unit for dynamic miniaturized applications. High performance with extremely small dimensions.



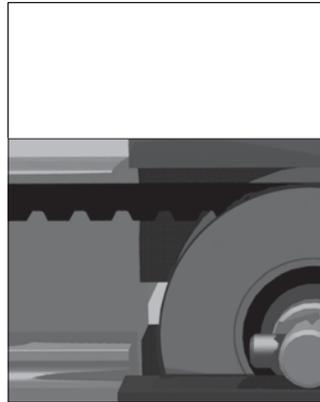
Linear guides

Precise positioning is made possible by a polished linear guide with a high degree of guide accuracy. A smaller motor can be added thanks to the low coefficient of friction. Rubber wipers protect the mechanism from dirt, thus increasing service life.



Completely new arrangement of the roller guideway

The H-Type arrangement of guidance allows high forces and moments and thereby the choice of a smaller size. Your benefit: lighter and more cost effective designs.

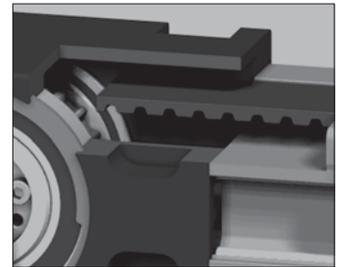


AT toothed belt

A proven drive element:

- high loading
- wear resistant
- high efficiency
- exact spacing
- low mass

Powered by
ATL *belt*



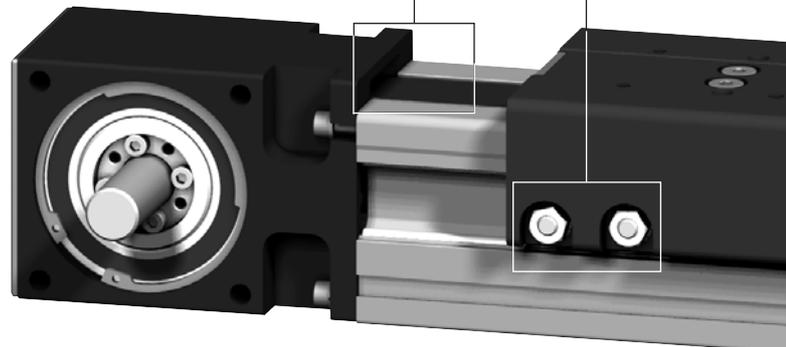
ATL toothed belt

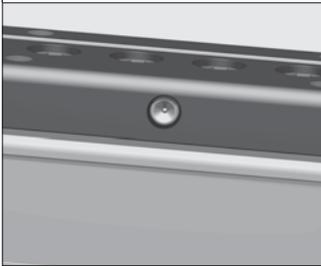
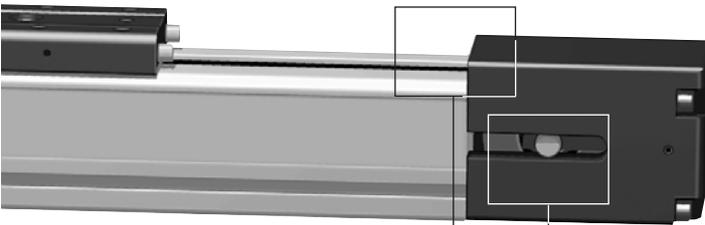
- with steel reinforcement especially suitable for linear drive units
- higher performance
- repeatability of ± 0.05 mm even at high feed forces

WIESEL *SPEEDLine*[®] WH50. WH80. WH120 WHZ50. WHZ80

With the WIESEL *SPEEDLine*[®] single-axis solutions can be realized as well as two- and three-dimensional handling systems.

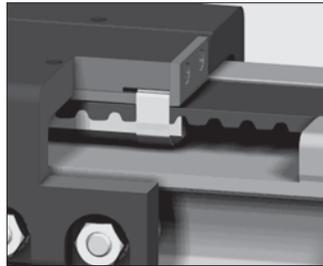
The WIESEL *SPEEDLine*[®] Z-axis is especially suitable for vertical movements. High dynamics and loads due to the reduced mass to be moved and the short design.





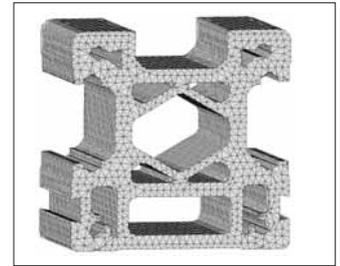
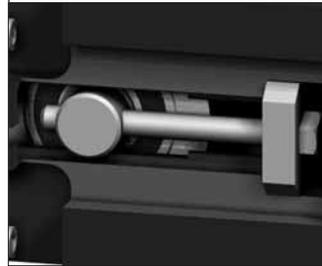
Central lubrication

The linear guide system is conveniently relubricated from a central point. Whether by hand or automatically, maintenance is now a simple matter.



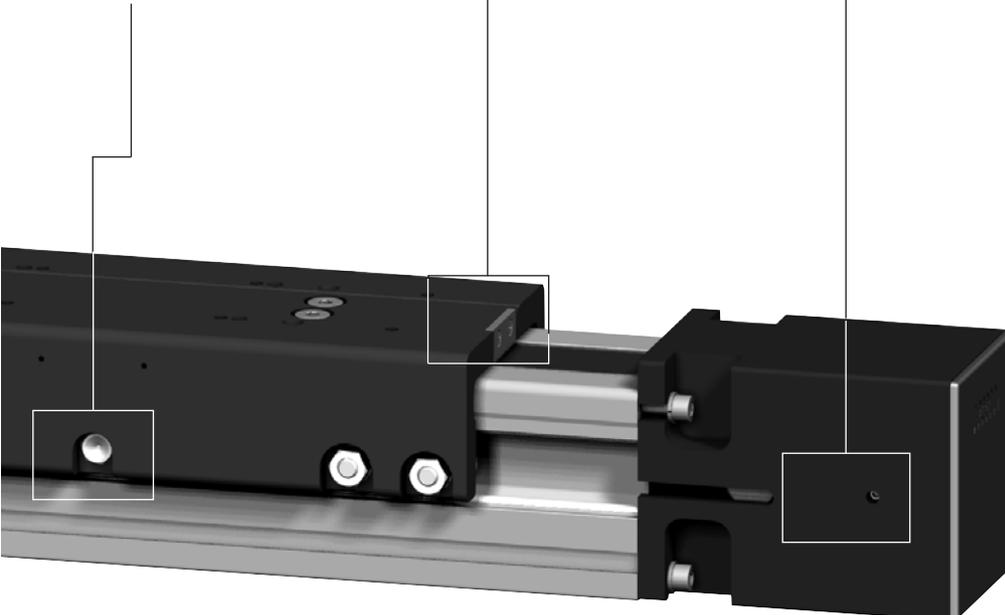
Tensioning and exchange of toothed belt

The toothed belt can be retensioned and exchanged comfortably without dismantling the load (only WH50/80/120). Thus reducing your service costs.



FEA optimized design

FEA analysis helps model and optimize the profile and the whole linear axis. The result: highest performance and reliability.



General technical data

WIESEL SPEEDLine®

Speeds

The linear speed achieved by a linear drive unit depends on the pitch of the mechanical drive element and on the input rotational speed. The various linear speeds which can be achieved by the individual sizes are listed in the following table:

Size	Lead [mm/rev.]	n_{\max} [rpm]	v_{\max} [m/s]
WH40	100	1800	3
WH50/WHZ50	120	3250	6.5
WH80/WHZ80	200	3000	10
WH120	260	2308	10

Installed position

The linear drive units can basically be installed in any position, provided that all the forces and moments occurring remain below the maximum values for the axis concerned.

Safety advice

All sizes are generally **not self-locking**. It is therefore advisable to install suitable motors with holding brakes, particularly if the linear drive unit is installed vertically.

In case of a breakage of the toothed belt the load is released instantly. Therefore safety precautions have to be taken for applications which are critical with regard to safety.

Loading

All specified maximum forces and moments refer to the centre/top of the power bridge. Load overlay at several coordinates: If compound loads occur with force and moment components in more than one direction, the maximum permissible loads must be reduced to 60% of the specified maximum values. When forces and moments are overlaid in two or three coordinates, it is necessary to reduce the maximum permissible load to 60% of the maximum value.

Load ratings

See page 120

Operating hours

The toothed belt as well as the roller guideway/linear guide allow continuous operation up to 100%. Extremely high loads, combined with long operating hours may reduce the lifetime.

Temperatures

All series are designed for continuous operation at ambient temperatures up to 80°C. Temperatures up to 100°C are also permitted for brief periods. The linear drive units are not suited for operation at subzero temperatures.

Idle torque

The indicated values for the idle torque are mean values determined in a rank. In individual cases these values can deviate.

Straightness/torsion

The aluminium profiles (material AlMgSi 0.5) are extruded sections which may display deviations in straightness and torsion due to their manufacturing process. The tolerance of these deviations is defined in DIN 17615. The deviations found in NEFF linear drive units correspond to these limits at least, but are normally well below. In order to obtain the required guide accuracy, the linear drive unit must be aligned with the aid of levelling plates or clamped from a mounting surface machined with sufficient accuracy. This ensures that tolerances of at least 0.1 mm/1000 mm are achieved.

Guide tube

A guide tube contains all elements of a linear drive unit except the mechanical drive element. It serves mainly as a support and holding capacity for higher loads and moments. For this purpose it is either mounted on the backside of a driven WIESEL® or installed parallel to it. All WIESEL® models are also available as guide tubes with guide.

Stroke lengths

The stroke length specified in the order code represents the maximum possible linear displacement. Acceleration and deceleration paths must be taken into account when designing the system, as well as any required over-run.

Repeatability

The repeatability is defined as the capability of a linear drive to get back to an actual position which was reached under the same conditions within the given tolerances. The repeatability amongst others is influenced by:

- Load
- Speed
- Deceleration
- Direction of travel
- Temperature

Aggressive working environment

Because of their tough design WIESEL SPEEDLine® units can be used even in rough surroundings without additional covering. As a protection against coarse dirt optional wipers can be offered. In case of extreme dirt or fine dust/ filings a protective bellow is recommended and provided on request.

Maintenance

Lubrication WH40

The linear guide must be lubricated via the grease nipple on the power bridge with the aid of a grease gun after 400 hours of operation or at least every 3 months. Grease: roller bearing grease (original grease: Fuchs Lubritech URETHYN E/M2).

Lubrication WH50/80/120

In order to obtain a useful lifetime of the guidance system the two guides should be permanently covered with a thin oil film. The two lubrication points which are arranged at the sides of the power bridge serve for lubrication.

Tensioning of toothed belt

The tension of the toothed belt can be adjusted with the aid of the tensioning screws on the guide casing which are intended for this. The linear units are delivered with optimal tension values in order to guarantee security in function. Changes in this adjustment must only be carried out in service cases and by NEFF service engineers.

Pretensioning of the guidance system

The WIESEL® units leave the factory with optimal preloading values which guarantee optimum travelling characteristics as well as the necessary capacity in forces and moments. Changes in the preloading of the rollers must only be carried out after prior consultation with NEFF service engineers.

