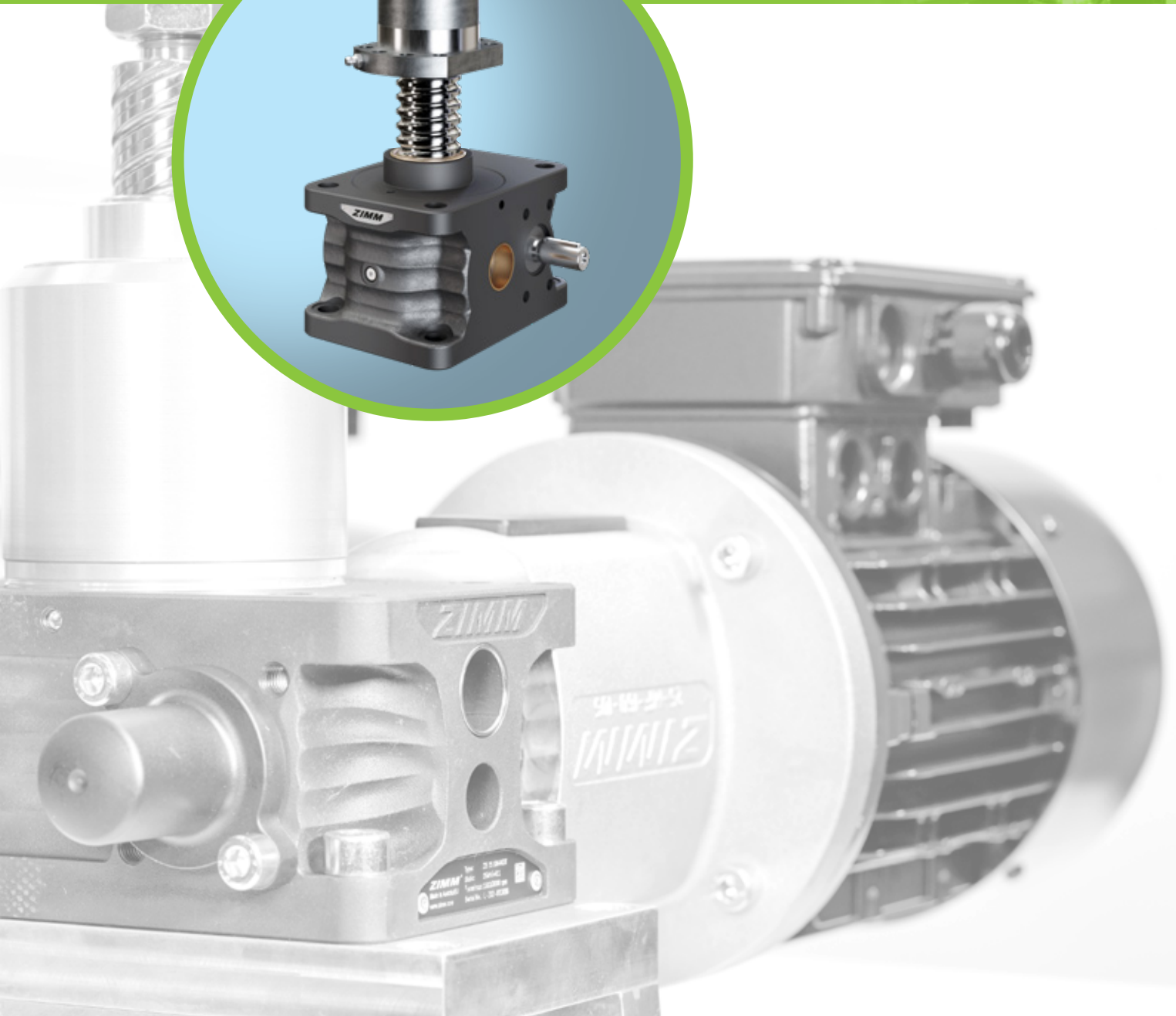


BALL SCREW DRIVES

Ball screw drives in automation technology

ZIMM

Movement with precision



USE OF BALL SCREW DRIVES

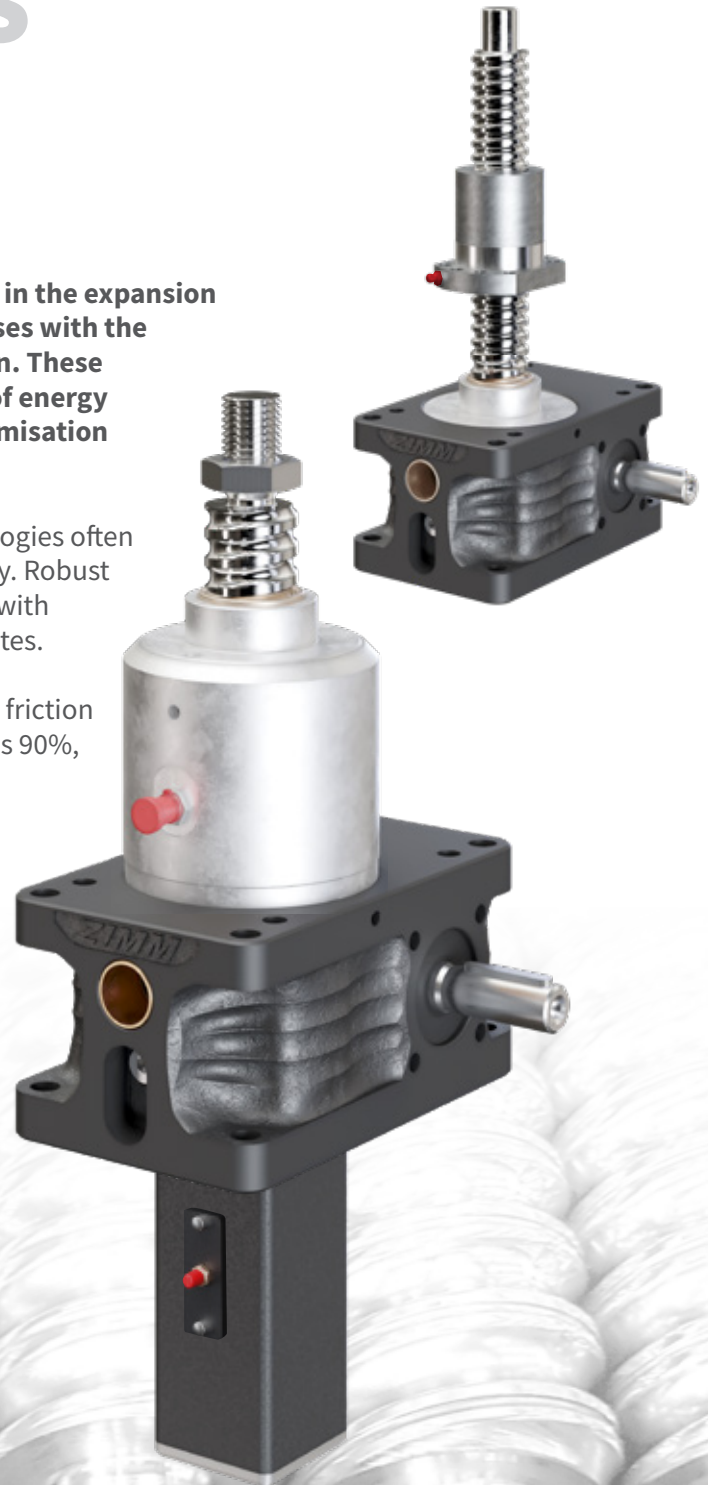
in automation technology

Manufacturing businesses are increasingly investing in the expansion and introduction of robotic technologies and processes with the aim of more rapid and more cost-effective production. These technologies also offer more efficient consumption of energy and the opportunity to respond more easily to customisation requests from customers.

The implementation and development of these technologies often require rapid movements, high duty cycles and accuracy. Robust trapezoidal threads are primarily used for adjustments with lower duty cycles on account of their lower efficiency rates.

By contrast, ball screw drives, with their efficient rolling friction and resulting higher efficiencies, which can be as high as 90%, offer the ideal conditions for automation tasks.

In addition, some ball screw drives allow the nuts to be adjusted with virtually no backlash or to be preloaded with oversized balls (the pitch must be less than the diameter). Depending on the requirements, pre-tensioned double nuts may also be used, which has a positive impact on operating performance.



BALL SCREW DRIVES FACTS

Speed:

The maximum spindle speed is 3000 rpm. Permissible up to Ø 50 mm and under optimal conditions.

Accuracy:

The pitch accuracy is 0.05 mm/300 mm (other accuracies are available on request). The axial clearance is usually 0.08 mm. Narrowed axial clearance of 0.02 mm is available on request.

Duty cycle:

Ball screw drives enable duty cycles of up to 100%. A high load combined with a high duty cycle can reduce the service life.

Installation position:

The installation position may be selected as desired. The only aspect that must be taken into account is that all radial forces that occur must be absorbed by external guides.

No self-locking:

Due to their low rolling friction, ball screw drives have no self-locking. This means that a holding brake must be used.

Temperatures:

The operating temperature is -25°C to +80°C. The duty cycle can be up to 4x higher than with a trapezoidal screw drive and up to 2x higher than with a trapezoidal screw drive in the case of high pitches.

Pollution:

The nuts are always equipped with wipers. In the event of heavy soiling and fine dust/chips, we recommend the installation of bellows or a coil spring cover.

Lubrication:

Correct lubrication, low heat development and smooth running are essential to ensuring the service life of a ball screw drive. The same lubricants are used for KGT ball screw drives as are used for roller bearings.

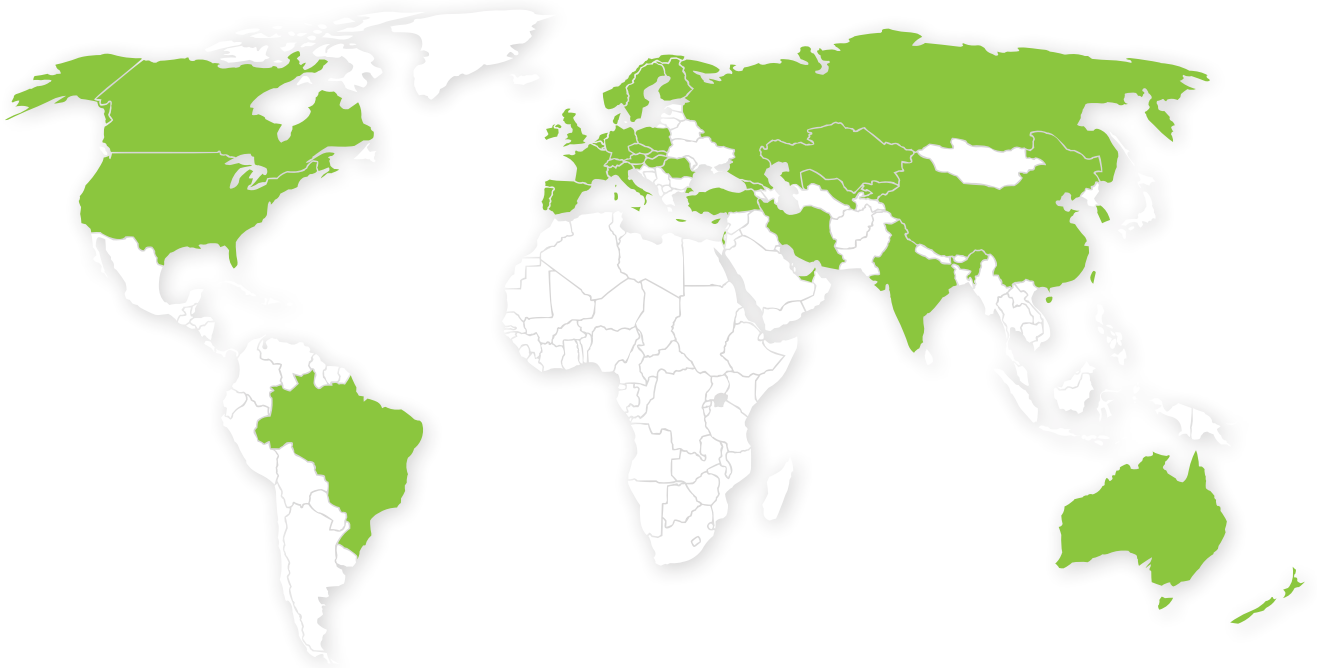
Service life calculation:

We would be happy to calculate the service life according to your requirements.

Have questions? Need a customised, reliable and safe solution for your particular task? Our skilled and reliable office and field sales teams would be happy to help you

– ZIMM, Movement with precision.

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