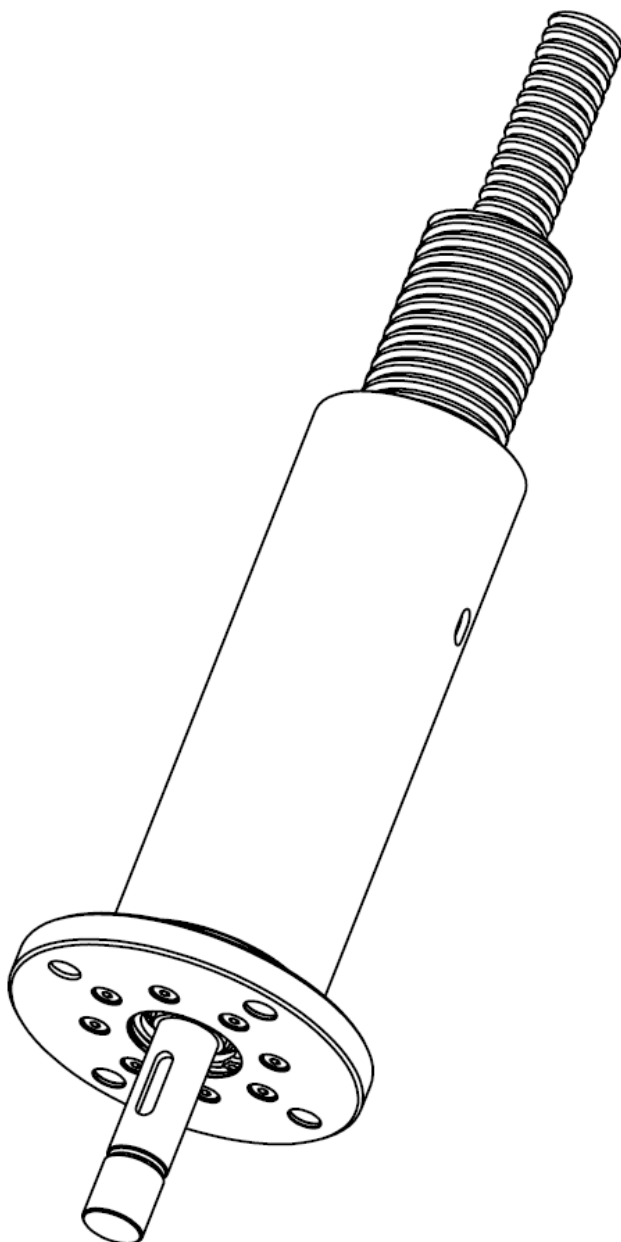


Synchron Telescop Screwdrive S-TEG

NEFF
GEWINDETRIEBE



Operating Manual

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1 Important Information

This chapter contains important information on the safe handling of the product and on this operating manual.





1.1 Instructions on Documentation

The following instructions will guide you through the entire documentation.
 We assume no liability for damages resulting from non-compliance with this operating manual.
 Forward this operating manual to the plant operator so that it is available if needed.

1.2 Safekeeping of the Documentation

Keep this operating manual and all other applicable documents safe so that they are available if needed.

1.3 Used Symbols

	Information	Instructions and information on the operation of the Synchron telescopi Screwdrive S-TEG.
	Attention!	Non-compliance may result in material damage and impair the operation of the unit.
	Warning!	Safety instruction: non-compliance may result in serious or fatal injuries.
	QR-Barcode	Provides a direct link to the products on our website. Compatible with QR barcode scanner apps for all Android, Apple and Windows smart phones / tablets.

1.4 Qualified Staff



Qualified staff according to this operating manual refers to specialists who are familiar with the installation, assembly, commissioning and operation of the Synchron Telescop Screw Drives S-TEG and the hazards involved and who possess the necessary capabilities on the basis of their specialist training and knowledge of the applicable standards.

1.5 General Safety Instructions

The following warnings, preventive measures and instructions are intended to guarantee your safety and to avoid damage to the lifting gear or the components connected to it. This chapter contains warnings and instructions that generally apply to the handling of the lifting gear.



Intended Use:

The Synchron Telescop Screwdrive S-TEG are intended only to carry out lifting, lowering, tilting and feeding motions.

Please find lifting capacities in our catalog or at www.neff-gewindetriebe.de.

Any other use is considered misuse. The manufacturer assumes no liability for any damage resulting from misuse.

If the device is installed in machines or plants, commissioning is prohibited until it is determined that it complies with the EC machinery directive.



Attention!

Requirement according to the German accident prevention regulations VBG 14 / VBG 70:

If screw drives are operated in theatre stages (VBG 70), lifting platforms (VBG 14) or lifting equipment where there is a danger to persons, we generally recommend using a safety nut for fall protection.



Attention!

This operating manual must be kept close to the device and be easily accessible and available to all users.



Attention!

Risk of damage to the lifting gear resulting from storage and transport.

Correct storage, installation and assembly as well as diligent operation and maintenance are prerequisites for the trouble-free and safe operation of the screw drives.

The screw drives must be protected against mechanical impacts and vibrations during transport and storage.



Warning!

Work on live components:

E.g. installation of limit switches or a drive unit must only be carried out by trained electricians.

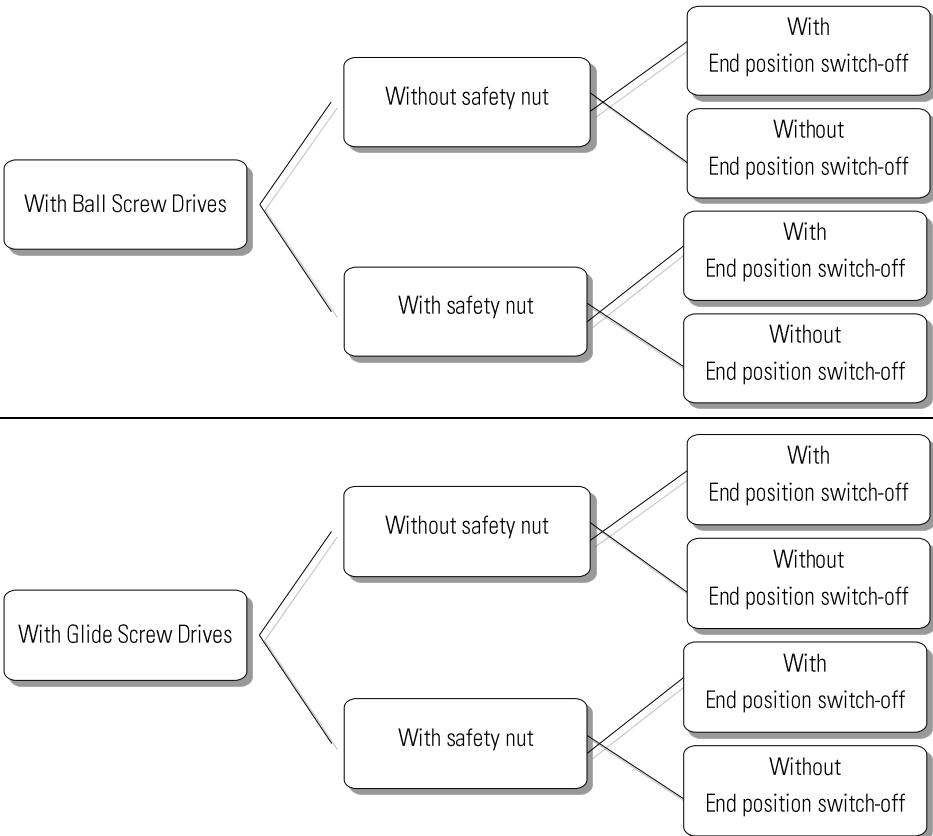
2 Overview of Synchron Telescop Screwdrives S-TEG



Description of Synchron Telescop Screwdrives S-TEG:

Neff Synchron Telescop Screwdrives are used where precise lifting, lowering, tilting and feeding motions are required with small installation dimensions and without step transitions / torque fluctuations. Our standard range comprises 3 models (with drive flange, M3 Worm Gear Screw Jack or G1 High Speed Screw Jack). The versatile connection possibilities allow the attachment of motor, gear or drive belt. All models are designed to cater for pressure and tensile loads as well as position-independent operation.

Basically, 2 different movement principles have to be distinguished:



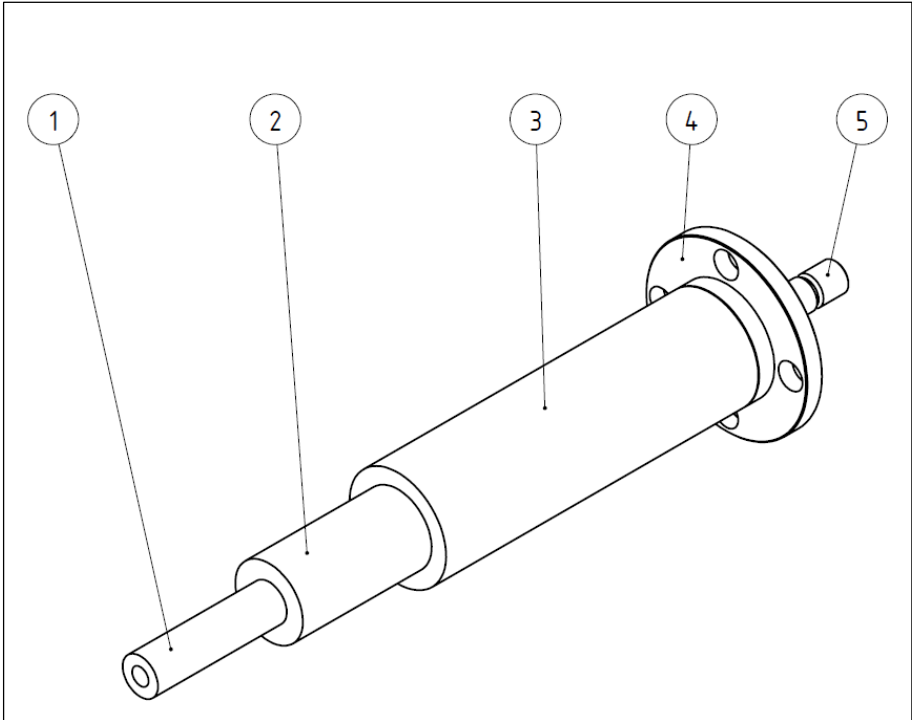
For the 2 basic designs, 3 drive variants are available in the list below:

- - With Drive Flange AF
- - With Screw jack M3
- - With High Speed Screw Jack G1

3 Design Synchron Telescop Screwdrive S-TEG with drive flange AF

Version with drive flange AF

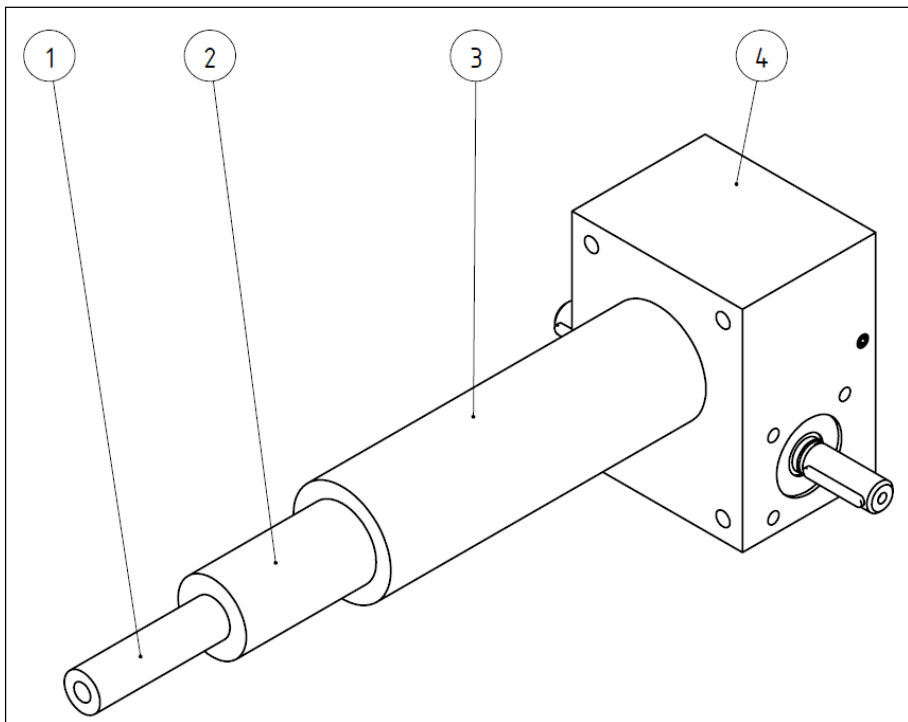
Position	Description
1	Glide Screw GGS-2205-LH / Glide Screw KGS 2005-LH
2	Glide Screw GGS-4205-RH / Ball Screw Screw KGS 4005-RH
3	Lineartube SRO
4	Drive shaft AZ



4 Design Synchron Telescop Screwdrive S-TEG with Screw Jack M3

Version with Screw Jack M3

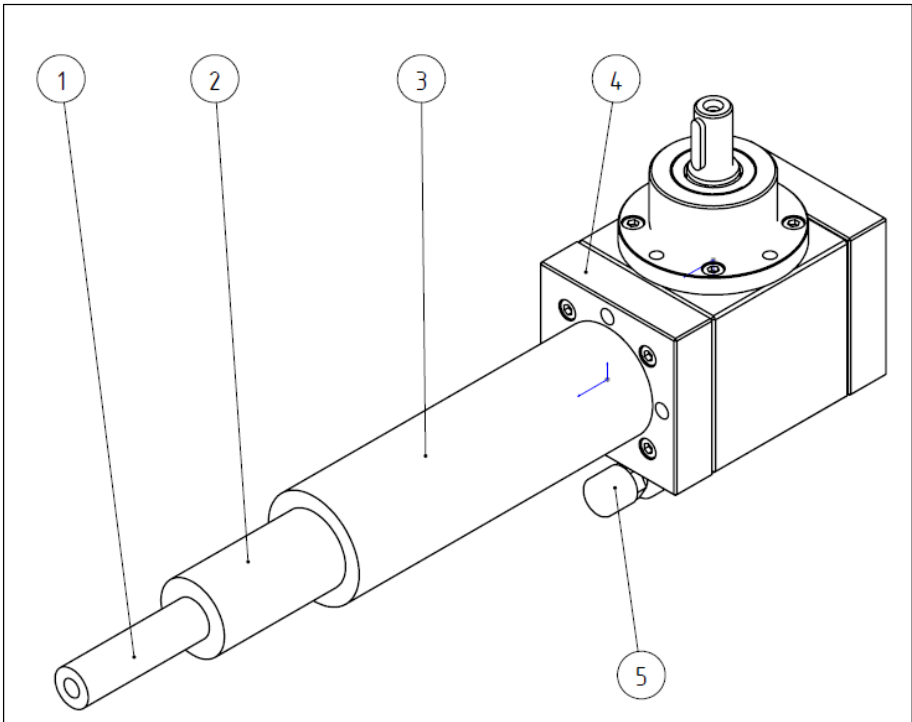
Position	Description
1	Glide Screw GGS-2205-LH / Glide Screw KGS 2005-LH
2	Glide Screw GGS-4205-RH / Ball Screw Screw KGS 4005-RH
3	Lineartube SRO
4	Screw Jack M3



5 Design Synchron Telescop Screwdrive S-TEG with High Speed Screw Jack G1

Version with High Speed Screw Jack G1

Position	Description
1	Glide Screw GGS-2205-LH / Glide Screw KGS 2005-LH
2	Glide Screw GGS-4205-RH / Ball Screw Screw KGS 4005-RH
3	Lineartube SRO
4	High Speed Screw Jack G1
5	Air vent valve



6 Assembly

6.1 General Assembly Instructions



The bolts of the S-TEG synchronous telescopic screw drive are attached to the drive flange or gear unit housing or other mounting parts (mounting plates or cardan adapter, see QR code below), depending on the version. The housing is always screwed to a machined surface (no rolled steel profiles or similar) to avoid misalignment or noise problems.

During installation, depending on the application, the drive must be precisely aligned and screwed either at right angles or parallel to the machine part / for guidance.

The tolerances of the four assembly sides correspond to the DIN ISO 2768-mH standard.

Version	AF	M3	G1
Bolts (min. 8.8)	M8	M10	M10
Length of engagement	-	13	15
Max. torque in Nm	25	46	46

The torques mentioned in the table are only rough and nonbinding guidelines – see VDI 2230.



Lateral forces have to be absorbed by suitable guiderails; otherwise the device lifecycle would be shortened.



Attention!

The lubrication nipples must always be accessible during operation.



Attention!

Do not hammer the shaft end or the screw when aligning the screw drive.

6.2 Mounting several Synchron Telescop Screw Drives S-TEG

Requirement:

One Synchron Telescop Screw Drive S-TEG is already installed and fastened as described in chapter 6.



1. Bring the second drive into the planned position, but do not fasten it yet.
2. Move both drives on same position.
3. Mount the coupling, cardan shaft or toothed belt disk on the drive shaft of the already mounted telescopic screw drive.
4. Fastening the second drive
5. Repeat steps 1-5 with any other screw drives.

**Attention!**

Check the sense of rotation of all lifting elements before assembly.

**Attention!**

Use torsionally flexible couplings, drive shafts or cardan shafts in order to compensate for any misalignment of screw drives.

**Attention!**

Observe the lubricating film and screw temperature during run-in. If the screw quickly runs dry (or if there are loud running noises with ball screws) and if the temperature is increased despite observing duty time and permissible power, this indicates impermissible lateral forces.

QR barcode to Neff couplings:



QR barcode to Neff drive shafts:



6.3 Synchron Telescop Screwdrive S-TEG with safety nut (optionally with limit switch)

Safety nut acc. to VBG14 or VBG70 requirements only will available on request. If nothing else is specified, our standard safety catch nuts will be delivered. In this connection, the technical data of the safety catch nut always shall be counter-checked against the existing requirements.

ⓘ Standard safety nut with glide screw:

The safety nut will rotate without axial load and thus wear with the running nut. With increasing wear of the travelling nut, the distance between both nuts increases.

At an enlargement of 1.5 mm (factory setting) due to sagging of the screw, there is no longer a form-closing connection between the key and the safety lock nut; the slotted design and the cone clamp the lock nut.

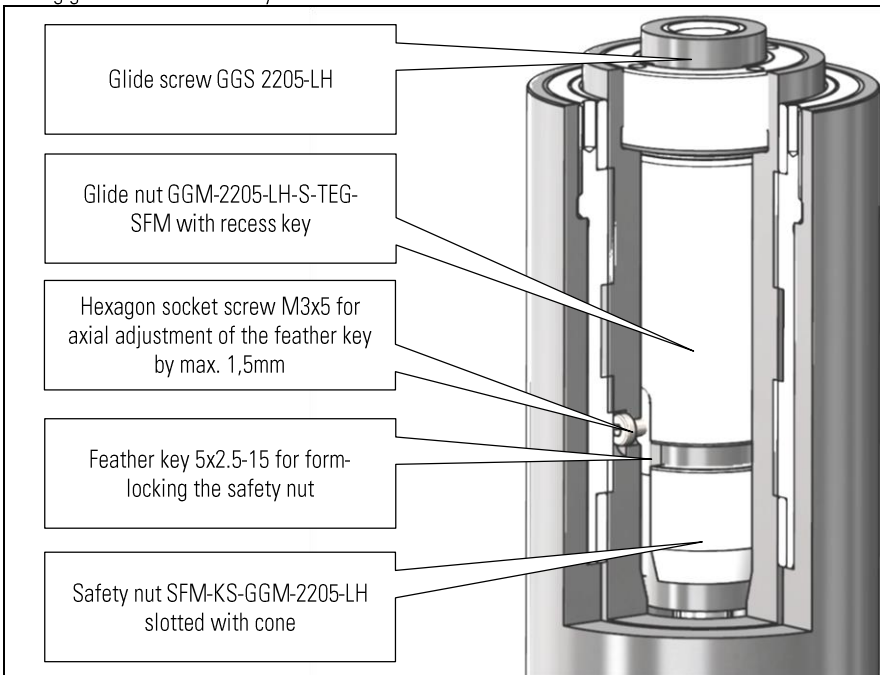
⚠ Attention!

When the safety nut is activated, the telescopic screw drive can only be moved without load and with increased torque.

ⓘ Factory setting safety nut

The factory setting for the safety nut is 1.5mm, on user request the activation can be increased to up to 3mm wear, see illustration below.

Desing glide screw with safety nut:



i Standard safety nut with ball screw:

The ball screw version with safety nuts is generally not required due to the fully enclosed ball screw nut. The balls cannot fall out through the closed system.

Normally, the ball screw will jam in the case of a failure and this will result in excessive power input to the motor.

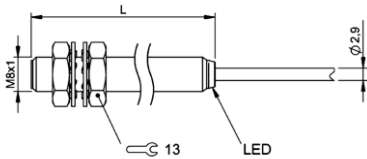
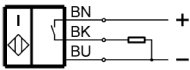
For this reason, we recommend that a torque monitor be integrated into the motor control unit. The safety nuts are designed according to the maximum static load of the ball screw nut and absorb the load when all balls fail.

7 Version with end position switch-off

! Attention!

End position switch-offs are not allowed to be used for position determination..

i Technical data inductive limit switch IEND-BALLUFF-BES-M08EF-PSC15B-BP02-003:

<p>Design limit switch:</p>  <p>Electrical diagram:</p> 	<p>General characteristics: Basic standard IEC 60947-5-2 Approval/Conformity EAC CE cULus WEEE Operating voltage display no Function display yes Switch output PNP normally open contact (NO)</p>
<p>Electrical connection: Connection type Cable, 2.00 m, PUR Number of conductors 3 Cable diameter D 3.00 mm, cable length L 2 m Short circuit protection yes Conductor cross section 0.14 mm² Reverse polarity protected yes Possibility of substitution protected yes</p>	<p>Electrical characteristics: Output resistance Ra 33.0 kOhm Rated operating voltage Ue DC 24 V Rated operating current Ie 200 mA Rated insulation voltage Ui 250 V AC Rated short-circuit current 100 A Ready delay tv max. 25 ms Operating voltage Ub 10...30 VDC Utilization category DC-13 Minimum operating current Im 0 mA Load capacity max. at Ue 1 µF No-load current Io max., damped 7 mA No-load current Io max., undamped 2 mA Residual current Ir max. 10 µA Residual ripple max (% of Ue) 10 Switching frequency 5000 Hz; protection class II Voltage drop static max. 2.5 V</p>
<p>Detection range/measuring range: Secured switching distance Sa 1.2 mm Hysteresis H max (% of Sr) 15.0 % Nominal switching distance Sn 1.5 mm Real switching distance Sr 1.5 mm Real operating distance Sr, tolerance ±10 % Temperature drift max (% of Sr) 10 Repeatability max. (% of Sr) 5.0</p>	<p>Material: Active surface, material PBT; housing material stainless steel; sheath material PUR</p> <p>Mechanical features: Dimension Ø 8 x 40 mm; tightening torque 8 Nm; size M8x1; flush mounting</p>

8 Initial operation



Attention!

Check limit switch for function. If possible, start up the screw drive without load and slowly increase the load.

During commissioning, constantly check the operating temperature, the current consumption of the motor and the screw contact pattern

9 Maintenance



- For glide screws, lubricate the screw regularly. Prevent dry running!
- For ball screws, the guideline value is: approx. every 200 hours, re-lubricate 1ml per 10mm screw Ø.
- After approx. 5 operating hours of commissioning: Retighten all fastening screws.
- After approx. 200 operating hours or 1 year (at shorter intervals in case of difficult operating conditions): Check the screw nut for signs of wear.
- Clean the screw from old grease and re-lubricate.

9.1 Lubricants and Fill Quantities



Types of factory grease:

Version Ball screws / Glide screws:

NEFF GREASE 2/3

Safety data sheet NEFF GREASE 2/3:



In addition to our factory lubricants, other equivalent brand lubricants may also be used. This only applies if they are compared to the data sheets of the above manufacturers.



Too much grease increases friction and therefore causes an increase in temperature. There is a sufficient amount of lubricant when a small amount of grease begins to exit at the sealing lips.

10 Malfunction



Service: Should malfunctions occur during operation, first try to identify the manner of the malfunction with the table below and to repair it. If it is a malfunction you can't repair, please contact our technical service (see last page).

Malfunction	Cause	Remedy
Unusual, constant running noises.	Rolling / grinding: Bearing damage	Check grease fill level. Consult the technical service.
Unusual, irregular running noises.	Foreign object in the grease.	Check grease fill level. Stop drive. Consult the technical service.
Unusually high temperature at the housing.	<ul style="list-style-type: none"> ➤ Not enough grease. ➤ Defective gearing or bearing. 	Check and correct grease filling. Consult the technical service.
Glide screw quickly runs dry.	Assembly fault: Impermissible lateral forces.	Repair assembly fault. Consult the technical service.
Screw does not move during rotation of the drive shaft.	<ul style="list-style-type: none"> ➤ Internal drive unit broken ➤ Drive unit has detached from drive shaft 	Have the gear repaired

Notice:

Notice:

11 Manufacturer's Declaration

We hereby declare that the following product:

Synchron Telescop Screwdrive S-TEG
With ball- or glidescrews
Available in types AF, M3, or G1
for lifting and lowering loads

was manufactured in accordance with the EC machinery directive 2006/42/EC annex II B on incomplete machinery.

This incomplete machinery must not be commissioned until the machine it is to be incorporated in has been declared to comply with the provisions of the EC machinery directive, the harmonized standards, European standards or the applicable national standards.

The manufacturer undertakes to forward the documentation on the incomplete machinery to national authorities on request. The technical documentation was created according to annex VII B.

Person responsible for documentation:

Andreas Ries, Director of quality management

Address of the person responsible for documentation:

Neff Gewindetribe GmbH
Karl-Benz-Str. 24
71093 Weil im Schönbuch
Germany

The following harmonized standards have been applied:

DIN EN ISO 12100-1 Safety of machinery – Basic concepts, general principles for design, part 1: Basic terminology, methodology

DIN EN ISO 12100-2 Safety of machinery – Basic concepts, general principles for design, part 2: Technical principles and specifications

The following national standards, guidelines and specifications have been applied:

BGV D8 Accident prevention regulations for hoist gears, lifting and towing equipment

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