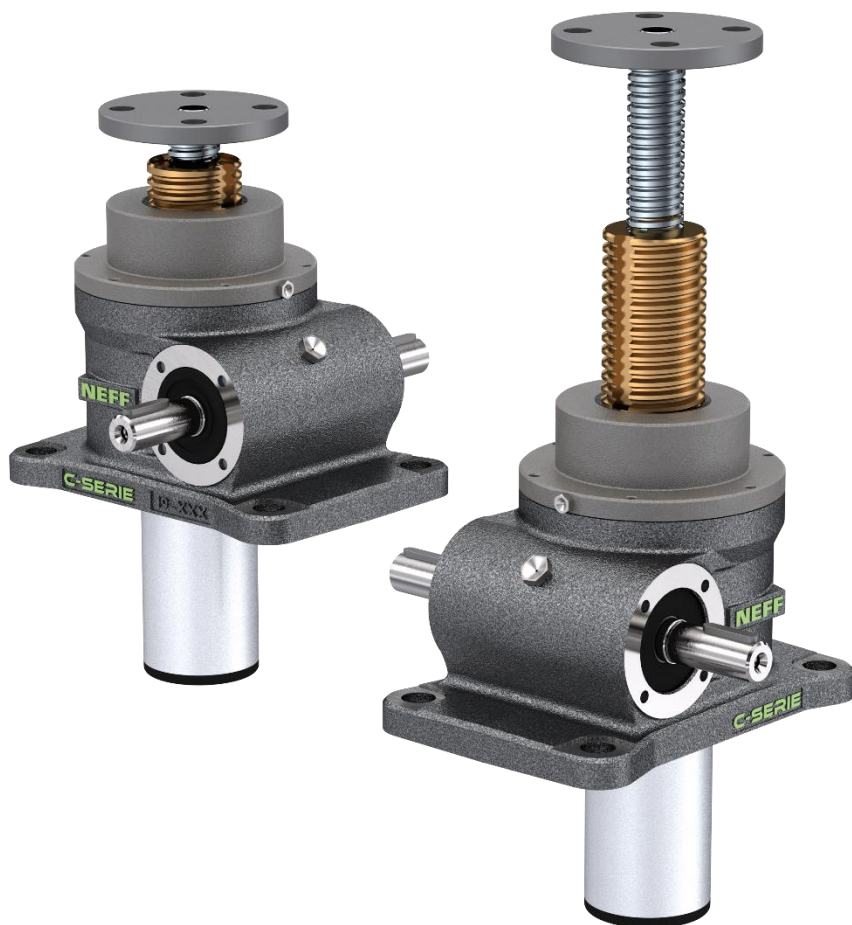


C-Series Telescopic Screw Jacks



Standard Operating Instructions

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1 Important Information

In this chapter you will find important information about the safe handling of the product and the operating instructions.

1.1 Notes on Dokumentation

The following notes are a guide through the overall documentation.
We assume no liability for damage caused by non-compliance with these instructions.
Pass these instructions on to the system operator so that the instructions are available if necessary.

1.2 Storage of Documents

Keep these operating instructions as well as all relevant documents in a safe place so that they are available if necessary.

1.3 Used Symbols

	Info	Notes and information on the operation of the Screw Jacks.
	Attention!	Failure to do so can lead to material damage and impair the function of the transmission unit.
	Warning!	Safety note: Failure to do so may result in death or serious injury.
	QR-Barcode	For direct linking to the products on our website. Compatible with QR barcode Scanner apps for every Android, Apple, and Windows smartphone/tablet.

1.4 Qualified Personnel


Qualified personnel within the meaning of these operating instructions are specialists who are familiar with the installation, assembly, commissioning and operation of the screw jacks and the associated hazards and have the appropriate skills through their professional training and knowledge of the relevant standards and regulations.

1.5 General Safety Instructions

The following warnings, precautions and instructions are for your safety and to prevent damage to the lifting gear or the components connected to it. This chapter contains warnings and notes that are generally valid for the handling of the lifting gear.



Intended use:

The C-Series telescopic screw jacks are designed exclusively for performing lifting and lowering movements.

Lifting capacities can be found in our catalogue or under our website www.neff-gewindetriebe.de

Any other use is considered as not intended. The manufacturer is not liable for any resulting damage.

When installed in machines or systems, commissioning is prohibited until it has been determined that it complies with the EG-Directive machines.

● **Attention!**

Requirements for accident prevention regulations VBG14 / VBG 70:

When operating spindle lifting gears in theatre stages (VBG 70), lifting platforms (VBG 14) or lifting systems with personal danger, we generally recommend a safety catch nut as a fall protection device.

● **Attention!**

This operating manual must be kept in an easily accessible place near the device and made available to all users.

● **Attention!**

Risk of damage to the lifting gear due to storage & transport!

The correct and safe operation of the screw jacks requires professional storage, installation, and assembly as well as careful operation and maintenance.

The spindle lifting gear must be protected against mechanical shocks and vibrations during transport and storage.

Warning!

Working on Electric parts:

For example: Installation of safety limit switches or installation of a drive may only be carried out by trained electricians.

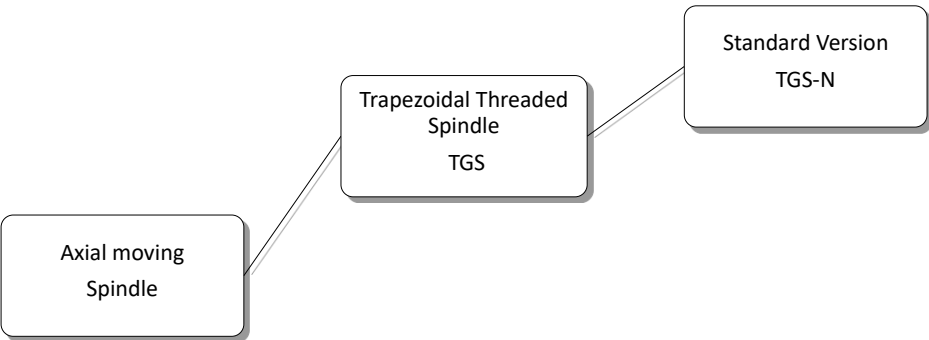
2 Overview of Screw Jacks



Description of a Spindle Lifting Gear:

Neff C-Series telescopic screw jack is used wherever precise lifting and lowering movements are required. The classic housing allows the attachment of the motor, gearbox or rotary encoder. All versions are designed for both compressive and tensile stress and position-independent function.

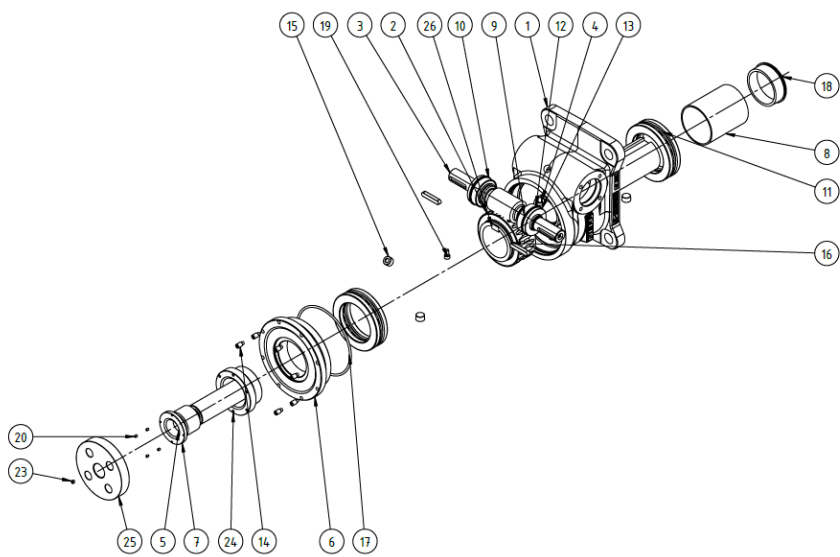
Basically, a movement principle is:



3 Structure of the Screw Jack Type N

Version SHG C-Series telescopic with trapezoidal threaded spindle Type N (axially moving spindle, not torsion-proof).

Position	Description
1	Housing
2	Worm wheel
3	Screw shaft
4	Trapezoidal threaded spindle
5	Trapezoidal threaded spindle
6	Bearing cap
7	Threaded bushing
8	Protective tube
9	Locking ring DIN 471
10	Washers DIN988
11	Axial Deep Groove Ball bearings
12	Taper
13	Radial shaft seal DIN 3760
14	Grub screws
15	Screw plug
16	Key spring DIN 6885
17	O-Ring
18	Protective tube closure cap
19	Cylindrical screw DIN912
20	Grub screws
23	Grub screws
24	Threaded bushing
25	Mounting plate
26	Key spring DIN 6885



4 Assembling

4.1 General Assembly Instructions

i Before assembly, the spindle position must not be twisted, as this would alter the set measurement and the stroke reserve could no longer be guaranteed! The gears can only be adjusted in height via the worm shaft.

The fixing screws of the screw jack are made on the housing. The housing is always mounted on a machined surface (no rolled steel profiles or the like.) in order to avoid misalignment or noise problems.

During installation, the spindle lifting gear and the spindle must be precisely aligned and screwed either at right angles or parallel to the machine part, depending on the application.

The tolerances of the mounting side comply with DIN ISO 2768-mH.

Size	C3	C5	C15	C20	C30	C50
Screws (min. 8.8)	M12	M16	M20	M27	M33	M45
Screw-in depth min.	16	24	30	40	45	60
Max. Tightening torque in Nm	89	215	420	1070	1950	5000

The torques listed in the table can only be understood as rough and non-binding reference values - see VDI 2230!

i
Lateral Forces (Side Force) are not allowed!

● Attention!

The accessibility of the lubrication nipples during operation must be ensured.

● Attention!

When aligning the spindle lifting gears, no blows must be applied to the shaft end or spindle.

QR-Barcode to Neff fasteners:



Parallel mounting of several Screw Jacks

Info:

A Screw Jack is already installed and fixed as described in Chapter 4!



1. Put the second spindle lifting gear in the foreseen position, but do not fasten it yet.
2. Slide the coupling or cardan shaft onto the worm shaft of the already mounted spindle lifting gear.
3. Slide the coupling or cardan shaft onto the worm shaft of the second spindle lifting gear.
4. Fixing the spindle lifting gear.
5. Repeat steps 1-5 for further transmission units.

● **Attention!**

Check the direction of rotation of all lifting elements before installation.

● **Attention!**

In order to compensate for misalignment of the spindle lifting gears, torsionally elastic couplings, cardan shafts or cardan joint shafts must be used.

● **Attention!**

During the run-in phase, observe the lubricating film and spindle temperature. Rapid dry running and increased temperature despite compliance with the duty cycle and permissible power indicate inadmissible lateral forces.

QR-Barcode for Neff
Coupling:



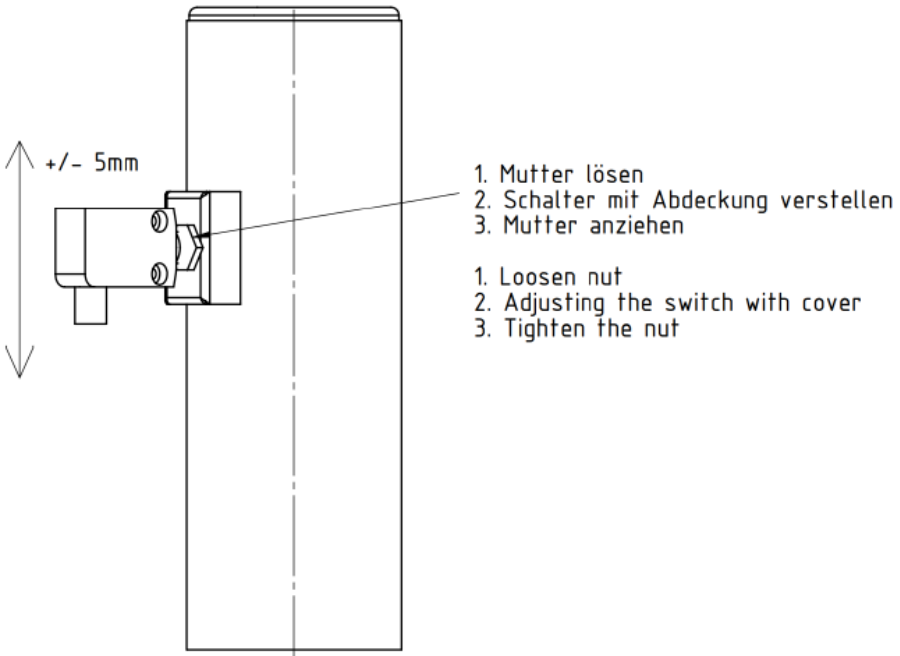
QR-Barcode Neff
Cardan-Shafts:



4.2 Screw Jacks with Limit Switch



The limit switches are preset by NEFF. The customer must check the stroke end positions and set the limit switches!



Montagevideo / Assembly video



4.3 Screw Jack with Safety Nut

Safety catches nuts according to VBG14 or VBG70 requirements are only available on request.

Unless otherwise stated, our standard safety catch nuts will be shipped.

The technical data of the safety catch nut must always be checked with the existing requirements.

Standard-Safety catch Nut with Trapezoidal Thread:

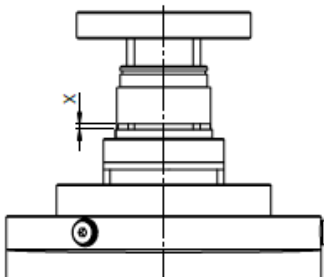
The safety catch nut runs with the threaded bushing without axial load and thus wear-free. With increasing wear of the threaded bushing, the distance X between both nuts' decreases.

With a reduction of 25% of the threaded, the threaded bushing must be replaced.

For this purpose, the dimension X must be recorded during commissioning and regularly monitored via a maintenance plan.

If the threads of the threaded bushing should break through due to excessive wear or excessive load, the safety catch nut will catch the applied load.

Safety Catch Nut: optical

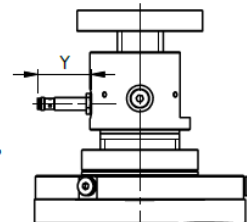


Baugröße	Maß Y
C20	50,5
C30	53,5

Endschalter auf Maß Y je nach Baugröße eindrehen!

Maß Y = Ende Endschalter bis Planfläche

Safety Catch Nut: Electrical



5 Commissioning

● **Attention!**

Check the limit switch for function. If possible, put the screw jacks into operation without loading and increase the load slowly.

During commissioning, constantly check the operating temperature, the current consumption of the motor and the spindle load-bearing pattern.

6 Maintenance



6.1 Trapezoidal Thread

- **Lubricate the two trapezoidal threaded spindles** regularly. Prevent dry running!
- **After about 5 operating hours of commissioning:** Retightening of all fastening screws.
- **After about 200 operating hours or 1 year** (in case of difficult operating conditions at shorter intervals): Check the spindle nut for signs of wear.
Clean the spindle of old grease and lubricate it with new grease.
- **After about 500 double strokes**, the worm drive should be relubricated via the grease nipple in the housing!
- **Disassembly of the bearing cover:**
 1. Loosening the grub screws on the bearing cover
 2. Unscrew the spindle (possibly remove the spindle guard).
 3. Unscrew the bearing cover.
 4. Removing the old grease.
 5. Refilling with new grease.
 6. Strong application of the bearing cover (10 times the normal application force).
 7. Loosen the bearing cover again.
 8. Put on the bearing cover and secure it with grub screws.

● Attention!

When installing the bearing cover, pay attention to axial clearance and smooth running.

● Attention!

Replace the spindle nut if the axial clearance exceeds 1/4 of the thread pitch (trapezoidal thread).

6.2 Lubricants and Filling quantities



Factory Fat varieties:

Screw Jack / Trapezoidal screw drive:

NEFF GREASE 2 / NEFF GREASE 2





Filling quantities:

Type	C3	C5	C15	C20	C30	C40	C50
Fill quantities grease in (gr.)	400	500	800	900	1150	1500	2200
Fill quantities oil in (ml.)	400	500	800	900	1150	1500	2200



In addition to our factory lubricants, other, equivalent brand lubricants can also be used. Applies only under comparison and consideration of the data sheets, from the above manufacturers.



Too large amounts of grease increase friction and thus the temperature. There is enough lubricant if a slight grease leakage begins at the sealing lips.

7 Equipment failure



Service: If you notice any malfunctions during operation, first try to identify and fix the type of malfunction using the overview below. If there is a fault that cannot be rectified by you, please contact our technical service (see last page).

Disorder	Error cause	Help
Unusual, even running sounds.	➤ Rolling/grinding: Bearing damage ➤ Tapping: irregularity in toothing	Check grease filling. Consultation with technical service
Unusual, uneven running sounds.	Foreign bodies in the fat.	Check grease filling. Stop the drive. Consultation with technical service.
Unusually high temperature on the case.	➤ Too little fat. ➤ If the toothing or bearing is defective.	Check and correct the grease filling. Consultation with technical service.
Grease leaks from the shaft seal	Seals are defected	Consultation with technical service.
The grease leaks from the shaft seal and the spindle.	Too much fat in the Screw Jack	Check and correct the grease filling. Consultation with technical service.
Rapid dry running of the trapezoidal spindle.	Assembly errors: Inadmissible lateral forces.	Correct assembly errors. Consultation with technical service.
The screw shaft does not rotate, or the spindle rotates and does not move even though the screw shaft is rotated.	Shaft-hub connection or toothing broken.	Send the gearbox for repair.

8 Declaration of Incorporation

We hereby declare that the following product:

Screw jacks, Series C-Series
with trapezoidal ball or sliding threaded spindles
in the type N, VK, VP or R
in the sizes
C3, C5, C15, C20, C30, C50
for lifting and lowering loads

was manufactured in accordance with the EG-Machinery Directive 2006/42/EC, Annex II
B for incomplete machines.

The commissioning of this incomplete machine is prohibited until it has been determined
that the machine in which they are to be installed complies with the provisions of the EC
Machine Directive, the harmonizing standards, European standards or the corresponding
national standards.

The manufacturer undertakes to submit the technical documentation for the incomplete
machine to national authorities on request. The technical documentation was prepared in
accordance with Annex VII B.

Name of the documentation representative:

Andreas Ries, Quality Management Officer

Address of the documentation representative:

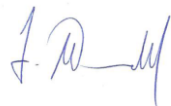
Neff Gewindetriebe GmbH
Karl-Benz-Str. 24
71093 Weil im Schönbuch

The following harmonizing standards are applied:

DIN EN ISO 12100-1 Safety of machinery - Basic concepts, general design principles, Part
1: Basic terminology, methodology
DIN EN ISO 12100-2 Safety of machinery - Basic concepts, general design principles, Part
2: Technical principles and specifications

The following national standards, guidelines, and specifications are applied:
BGV D8 Accident prevention regulation Winches, lifting, and pulling equipment.

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Weil im Schönbuch, 29.08.2012

Hartmut Wandel, Geschäftsführer

Notizen: