

B-2-19 Precautions When Handling Ball Screws

Ball screws are precision products. They require careful handling as described below.



Confirm lubrication

Lubrication

(1) Confirm the state of lubrication before use. Insufficient lubrication causes loss of ball screw functions in a short period.

(2) Use without lubrication if grease is already applied to the ball screws. Remove dust or swarf if they stuck to the greased surface during handling. Wipe with clean white kerosene, then apply the same type of new lubricant before use. Avoid using different types of grease at the same time. Consult NSK for special oil lubricant if it is required to your application.

(3) Check lubricant after two to three months of operation. Wipe off grease if it is excessively contaminated, and apply sufficient volume of a fresh coat of grease. After the initial check, check and replenish lubricant approximately every year. Check more often if environment requires.

* Refer to Pages B71 and D13 for lubrication.



Do not disassemble



Do not reassemble



Watch out for falling objects



Handle with care



Do not apply shock

Handling

(1) Never disassemble ball screw. It invites dust to enter, and lowers precision, or may cause an accident.

(2) User should never reassemble ball screw by himself. Loss of ball screw function is apt to occur if a mistake is made. Please send ball screw to NSK for repair or re-assembly. It will be reworked at the minimum service charge.

(3) Ball screw shaft or nut may fall due to its own weight. Watch out for such falling object. If it falls, the ball groove or ball recirculation component may be damaged and the function might have been lost. Make certain to return such item to NSK for check. There will be the minimum charge for this service.

(4) If recirculation component, shaft outside, or ball groove is scratched or damaged by impact, recirculation operation becomes deficient, and may cause loss of function.

* Refer to Page B77 for assembling components.



Prevent dust



Rotational speed limitation



Do not overrun



Temperature limitation

Precautions in use

(1) Ball screws should be used in a clean environment. Use a dust cover to keep dust and swarf from entering into the system. Insufficient dust protection causes not only the ball screw function to deteriorate but also brings about damage to the recirculation components if dust plugs the system. This may result in more serious accident such as a fall of the table.

(2) For rotational speed in operation, refer to the applicable section in this catalogue which describes permissible rotational speeds, or to specification drawing furnished by NSK. Exceeding permissible rotational speed damages recirculation components, and may cause the table to fall. A precaution system such as a safety nut is recommended in vertical use of ball screw. Please consult NSK for safety system.

(3) Overrunning ball nut (removed from the ball thread) causes the balls to fall out, damages recirculation components, and dent ball groove, resulting in insufficient operation. Continued use under such conditions may cause premature wear, and damages recirculation components. For these reasons, avoid overrun by all means. If overrun occurs, please request NSK to check. There will be a minimum charge for this service.

(4) Ball screws are designed to be used at a temperature of less than 80°C. Do not operate at temperatures higher than this limit. Use at a higher temperature may damage recirculation and seal components. Please consult NSK if it is necessary to use at a temperature higher than the limit. When using NSK K1 lubrication unit, the operating temperature should be 50°C or less. (Momentary maximum temperature in use: 80°C)

* Please read Page B84 before designing.



Store in the correct position

Storage

(1) Store in the original NSK package. Do not unwrap or tear the inner wrapping if it is not necessary. This allows dust to enter and rust to set in, and may deteriorate functions.

(2) The following position is recommended when storing ball screws.

- ① Keep in the NSK original package, and place it flat.
- ② Place flatly on supports; store in a clean area.
- ③ Hang vertically in a clean place.