

# Reducer ERG - 01B

## OPERATION MANUAL

Thank you for purchasing Reducer "ERG - 01B". This Reducer is Reducer of Espert Motor (ENK - 500C, ENK - 500T) developed to reduce the revolution speed of Espert attachment and increase the torque. Read this and all the associated component Operation Manuals carefully before use. Always keep this Operation Manual in a place where a user can referred to for reference at any time.

### 1. CAUTIONS FOR HANDLING AND OPERATION

- Read these warnings and cautions carefully and only use in the manner intended.
- These warnings and cautions are intended to avoid potential hazards that could result in personal injury to the operator or damage to the device. These are classified as follows in accordance with the seriousness of the risk.

Class	Degree of Risk
<b>WARNING</b>	A safety hazard could result in bodily injury or damage to the device if the safety instructions are not properly followed.
<b>CAUTION</b>	A hazard that could result in light or moderate bodily injury or damage to the device if the safety instructions are not followed.

**WARNING**

- ① This speed Reducer is designed for hand use. Mount between the motor and the Reducer and use.
- ② Do not exceed the " Maximum Allowable Motor Rotation Speed " (Refer to " 6 - 1 Specifications ").
- ③ When sensing that the Reducer, attachment and motor are overheated during operation, reduce the working force or the motor rotation speed, or stop the operation until the Reducer cools down before restarting.
- ④ Do not touch the cutting tool while it is running. It is very dangerous.
- ⑤ Wear safety glasses, dust mask, and use a protective cover around the attachment whenever the attachment is rotating.
- ⑥ Do not apply excessive force. This may cause cutting tool slippage, cutting tool damage, injury to the operator, loss of concentricity and precision.

**CAUTION**

- ① Do not drop or hit this Reducer, as shock can damage to the internal components.
- ② When cleaning a Reducer, stop the motor and remove dirt with a brush or a cloth. Do not blow compressed air into the Reducer. Foreign particles or cutting chips may get into the ball bearings.
- ③ Make sure that the transmission clutches engage firmly, when connecting to the motor and the attachment.
- ④ Stop working immediately when abnormal rotation or unusual vibration are observed. Immediately, please check the content of section " 8. TROUBLESHOOTING ".
- ⑤ No lubrication is required because grease impregnated ball bearings are used.
- ⑥ After installation, repair, initial operation, or long periods of non operation, please carry out break-in as follow. Start rotating slowly and over a short period of 5 - 10 minutes, increase speed gradually until allowable maximum speed.
- ⑦ Do not disassemble, modify or attempt to repair the Reducer. Additional damage will occur to the internal components. Service must be performed by NSK NAKANISHI or an authorized service center.

### 2. BASIC PACKAGE

When opening the package, check if it includes all items listed in " Table. 1 Packing List Contents ".

In the event of any shortage, please contact either NAKANISHI (see the " 4. CONTACT US " section) or your local dealer.

Table. 1 Packing List Contents

Reducer • • 1pc. 	Pin Wrench (K - 233) • • 1pc. 	Operation Manual • • 1set 
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### 3. WARRANTY

We provide a limited warranty for our products. We will repair or replace the products if the cause of failure is due to the following manufactures defects. Please contact us or your local distributor for details.

- ① Defect in manufacturing.
- ② Any shortage of components in the package.
- ③ Where damaged components are found when initially opening the package.  
(This shall not apply if the damage was caused by the negligence of a customer.)

### 4. CONTACT US

For your safety and convenience when purchasing our products, we welcome your questions.

If you have any questions about operation, maintenance and repair of the product, please contact us.

#### Contact Us

- For U.S. Market  
Company Name : **NSK America Corp.**  
Industrial Div.  
Business Hours : 8:00 to 17:00 (CST)  
(closed Saturday, Sunday and Public Holidays)  
U.S. Toll Free No. : +1 800 585 4675  
Telephone No. : +1 847 843 7664  
Fax No. : +1 847 843 7622  
Website : www.nskamericacorp.com
- For Other Markets  
Company Name : **NAKANISHI INC.**  
Business Hours : 8:00 to 17:00 (JST)  
(closed Saturday, Sunday and Public Holidays)  
Telephone No. : +81 289 64 3520  
e-mail : webmaster-ie@nsk-nakanishi.co.jp

### 5. FEATURES

If the Reducer is connected between the motor and the attachment, it reduces the rotating speed and increases the torque while keeping the motor speed unchanged.

### 6. SPECIFICATIONS AND DIMENSIONS

#### 6 - 1 Specifications

Model	ERG - 01B
Reduction Ratio	1 / 4
Maximum Allowable Motor Rotation Speed	Less than 30,000min <sup>-1</sup> (rpm)
Maximum Motor Rotation Speed at the Cutting Tool	Less than 7,650min <sup>-1</sup> (rpm)
Applicable Motor	Espert Motor ENK - 500C, ENK - 500T
Weight	65g

#### WARNING

- Do not exceed the " Maximum Allowable Motor Rotation Speed ".
- When sensing that the Reducer, attachment and motor are overheated during operation, reduce the working force or the motor rotation speed, or stop the operation until the Reducer cools down before restarting.

#### 6 - 2 Outside View

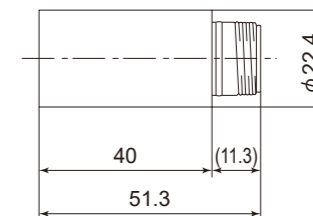


Fig. 1

### 7. CONNECTION OF THE REDUCER TO THE MOTOR

#### CAUTION

**Make sure your hands and all interlocking parts of the Reducer and motor are clean before connecting the Reducer to the motor. This is critical in preventing contaminants from entering the motor or Reducer.**

Align the thread on the front end of the motor and the rear of the Reducer, and turn the Reducer clockwise. If the drive shaft of the motor does not engage properly to the drive dog on the Reducer, it may only turn approximately two threads before stopping. **DO NOT FORCE THE TOGETHER.** Loosen the Reducer from the motor, rotate the Reducer shaft by hand then re-try. The drive shaft and the drive dog must be fully engaged. When fully engaged, secure the motor and Reducer using the provided pin wrench (K - 233) (Fig. 2).

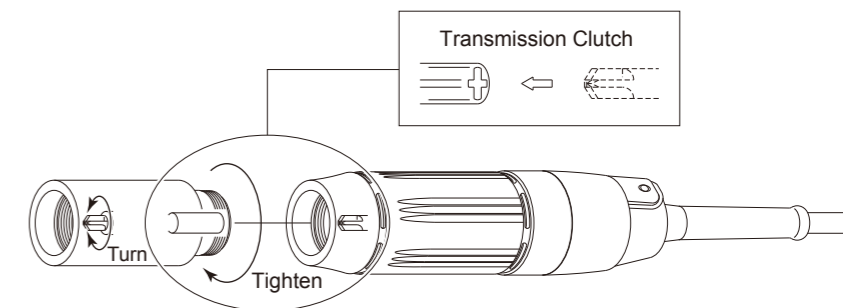


Fig. 2

### 8. TROUBLESHOOTING

If a problem or concern occur, please check the following items prior to consulting your dealer.

Trouble	Cause	Inspection / Corrective Action
Reducer does not rotate or rotate smoothly.	The ball bearings have been damaged.	Replace the ball bearings. (Return to NAKANISHI dealer service.)
	The Reducer gears have been damaged.	Replace the inner gears. (Return to NAKANISHI dealer service.)
Overheating during rotation.	Cutting debris has contaminated the ball bearing, and the ball bearings are damaged.	Replace the ball bearings. (Return to NAKANISHI dealer service.)
Abnormal vibration or noise during rotation.	Cutting debris has contaminated the ball bearings.	Replace the ball bearings. (Return to NAKANISHI dealer service.)
	The Reducer gears have been damaged.	Replace the inner gears. (Return to NAKANISHI dealer service.)

### 9. DISPOSAL OF THE REDUCER

When disposal of a Reducer is necessary, follow the instructions from your local government agency for proper disposal of industrial components.