

# Idle Gear

## BM3-IG

### OPERATION MANUAL

Thank you for purchasing BM3-IG Idler Gear. This idler gear is designed to be installed on "Applicable Swiss Machines" that use the i-Speed3 BM-322FR or BM-322FL Motor / Spindles. The Applicable Swiss Machines' powered spindle drive gear is required to drive this idler gear. Read this Operation Manual carefully before use. Also read the Applicable Swiss Machines and the BM-322FR or BM-322FL Operation Manuals.

Always keep this Operation Manual in a place where a user can refer 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>	<b>A safety hazard could result in bodily injury or damage to the device if the safety instructions are not properly followed.</b>
<b>CAUTION</b>	<b>A hazard that could result in light or moderate bodily injury or damage to the device if the safety instructions are not followed.</b>

### WARNING

- This idler gear is not a hand tool. This idler gear is designed for the sole purpose of installing the BM-322FR or BM-322FL Motor / Spindle to applicable CNC machines. Do not install this idler gear with other i-Speed3 motor / spindles or non-conforming machines.
- Never operate or handle the idle gear until you have thoroughly read the Operation Manuals and safe operation has been confirmed.
  - To prevent injuries / damages, check the idler gear, motor / spindle and cutting tool for proper installation, before operating the idler gear.
  - Before removing the idler gear, always turn the control power off and turn the compressed air supply to the CONTROLLER off. Then it is safe to remove the idler gear.

### CAUTION

- Do not drop or hit this idle gear, as shock can damage to the idle gear.
- When cleaning a spindle, stop the motor and remove debris with a soft brush or a cloth. Do not blow air into the idle gear with compressed air as foreign particles or cutting debris may get into the ball bearing.
- If the idler gear shows signs of wear or damage, return it to a NAKANISHI dealer for service before a malfunction or additional damage occurs.
- Do not disassemble, modify or attempt to repair this idle gear. Additional damage will occur to the internal components. Service must be performed by NSK NAKANISHI or an authorized service center.
- When using this idle gear for mass production, please consider the purchase of an additional idle gear to be used as a back-up in case of emergency.

## 2. SPECIFICATIONS AND DIMENSIONS

### 2-1 Specifications

Product Name	Idle Gear
Model	BM3-IG
Applicable Swiss Machines	Star Micronics Co., Ltd : SR-20J type C, SR-20R III, SR-32J, SR-20J type N, SR-32J type N
Applicable Motor Spindles	BM-322FR, BM-322FL
Weight	360g

### 2-2 Standard Accessories

Standard Accessories
<ul style="list-style-type: none"> <li>Hexagon socket bolt (M4 X 12) • 4pcs.</li> <li>Operation Manual • 1set.</li> </ul>

### 2-3 Outside View

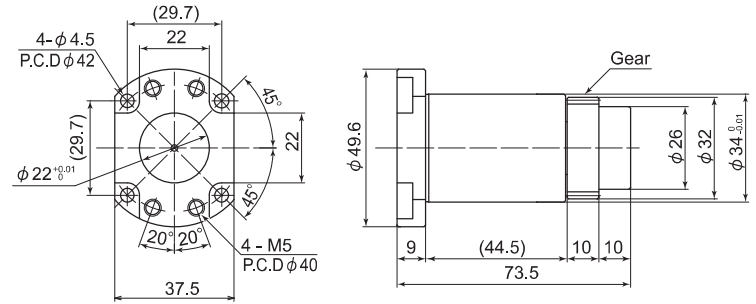


Fig. 1

## 3. INSTALLATION

### CAUTION

**When installing the idler gear, always install the components in the correct order. Failing to do so will result in the inability to install the idler gear.**

- Insert the idler gear to the machine's tool block, aligning the machine's drive gear with the gear on the idler sleeve.
- Align the mounting holes (4 locations) of the tool block of the machine and mounting holes (4 locations) of the idler gear, securing it with Hexagon Socket Bolts (4pcs : M4 X 12).
- Insert the BM-322F / L Motor / Spindle and secure it using the Hexagon Socket Bolts provided (2pcs : M5 X 25 Standard Accessories).

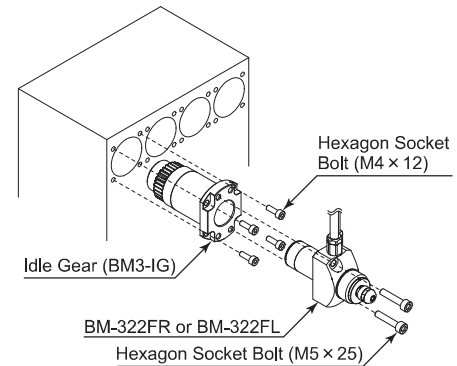


Fig. 2

## 4. TROUBLESHOOTING

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

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

## 5. DISPOSAL OF THE IDLE GEAR

When disposal of a Idle Gear is necessary, follow the instructions from your local government agency for proper disposal of electrical components.