Thank you for purchasing our product “MIO.”

Please read this manual before use to operate the device safely. Please store this operation manual in a place where the user can see it at all times.

### SAFETY CAUTIONS AND WARNING INDICATORS

- Before use always thoroughly read the safety cautions and operate the device properly.
- The instructions are intended to make you operate the product safely and prevent danger to you or others and damage from occurring. These instructions are classified according to the degree of danger or damage severity and the context of all items relate to safety should always be observed.

### WARNING

- Use eye protectors, polisher box, vacuum for safety and health when operating this unit.
- Be careful not to waste water or oil since there is a danger of a short circuit or electric shock.
- Never disassemble or modify the device, since it may seriously affect to its quality and safety.
- Do not wash the unit with water
- Care should be taken not to drop micromotor or units on floor. Make sure to place the units on even and stable surfaces.
- When unusual situation occurred, including smoking or smelld like resin burning, turn off main switch immediately and put off plug then request for repairing it immediately.
- Care should be taken not to leave motor cord near gas burner. Do not try to repair burned motor cord. Replace it with new one since there is danger of the electric shock or electric short as a result of poor circuit.
- Do not unplugging an electric cord with wet hands since there is danger of electric shock.
- Follow the instructions of bur manufacturer for recommended operating speed. Otherwise it may cause personal injury by breakage.
- Never turn on by hand, even, or directly. It may cause personal injury by breakage by breakage.
- Operate a handpiece in as low speed as possible when using a disc, otherwise it may cause personal injury by breaking the disc into pieces and fall around.
- Be sure to dress a gordinos before using it, because it is occasionally not-balanced even if it is brand-new. If used, an imbalanced gordinos may cause personal injury by cracking and breaking into pieces.
- Set with a Speed Controller before operating.
- Make sure that speed is heat within torque speed allowance for each bur.
- Be aware not to get caught by the rotating bur. Getting caught may scratch your skin and cause injury.
- Always disconnect motor cord connection before moving or moving on the handpiece.

### NOTICE

- Make sure that the unit is operated using clean water.
- NEVER lubricate bearings, motor or handpiece. Since the bearings are pre-lubricated, additional lubrication could cause leakage.
- To use the unit under the condition there is no condensation and of temperature from 0 to 40°C.
- Be aware not to get caught by the rotating bur. Getting caught may scratch your skin and cause injury.
- Never lubricate bearings, motor or handpiece. Since the bearings are pre-lubricated, additional lubrication could cause leakage.
- Make sure that speed is heat within torque speed allowance for each bur.
- Be aware not to get caught by the rotating bur. Getting caught may scratch your skin and cause injury.
- Always disconnect motor cord connection before moving or moving on the handpiece.

### NOTICE

- Always keep shanks clean. Dirt or debris in a chuck could cause bad concentricity of bur or poor chuck retention force.
- A chuck must be removed and cleaned once a week. If not, dirt or debris will accumulate in a chuck, and this could cause heat generation or malfunction.
- Try as much as possible not to operate a handpiece with heavy load that may activate protection circuit.
- Use as low speed as possible for burs which have bigger heads (4 mm and above).
- Prior to use always operate and inspect device for looseness, vibration, noise, and heat.
- Never lubricate bearings, motor or handpiece. Since the bearings are pre-lubricated, additional lubrication could cause leakage.
- An unit should be used under the condition there is no condensation and of temperature from 0 to 40°C.
- Never disassemble or modify the device, since it may seriously affect to its quality and safety.
- Never lubricate bearings, motor or handpiece. Since the bearings are pre-lubricated, additional lubrication could cause leakage.
- Make sure that speed is heat within torque speed allowance for each bur.
- Be aware not to get caught by the rotating bur. Getting caught may scratch your skin and cause injury.
- Always disconnect motor cord connection before moving or moving on the handpiece.

### FEATURES

- Lab. Motor Basics Highlighted
- User Safety Design
- Gentle Start, Soft Electronic Switching
- Quick Motor Response
- Smoothly Adjustable Motor Speed
- No Reaction
- Super Bur Concentricity
- Works on AC-100-240V Supply

### Parts Nomenclature


### Connecting the cords

- Motor cord plug
- Align and insert firmly the motor cord plug into (1) Motor Handpiece Connector (Fig.2).
- Foot pedal cord
- Align and insert firmly the foot pedal cord plug into (1) Foot Pedal Connector on the back of the unit (Fig.4).
- Power cord
- Align and insert firmly the power cord plug into (1) Power Cord Receptacle on the back of the control unit (Fig.4).

### Operation Procedures

1. Connect Power Cord to the AC-100-240V supply.
2. Push up (1) Foot/Hand Switch Selector and set (7) Speed Control Knob at its minimum position.
3. Turn on (1) Power Switch. Make sure (2) green Pilot Lamp on the right side of switch is on.
4. Select the direction of motor rotation by (1) Forward/Reverse Selector Switch.

### Operation-1

**Operator**

- Proceed the above-mentioned steps (1) - (4).

**Manual Operation**

- Push in (2) Foot/Hand Switch Selector to Hand. The motor starts running.
- Select the desired speed by (7) Speed Control Knob. To stop the motor push (1) Foot/Hand Switch Selector to Foot.

### Operation-2

**On/off operation by Foot pedal**

- Proceed the above-mentioned steps (1) - (4).
- Push up (2) Foot/Hand Switch Selector to Foot. Stop on Foot Pedal. The motor starts and runs at speed set beforehand by (7) Speed Control Knob.

### Protective Circuit for Motor

- When the motor is overloaded, the protective circuit will be triggered automatically in order to protect the control unit and the motor when overloaded or when run under a situation that the handpiece is not able to turn. It stops the motor, terminating motor power supply.

### Troubleshooting and Countermeasures for Motor and Control Unit

#### Problems and Countermeasures

- Motor Handpiece does not run.
  - Power cable is unplugged. Connect power plug.
  - Light lamp is faulty. Replace the light lamp.
  - Foot Pedal is not connected. Reconnect the foot pedal.
  - Motor does not run when Foot / Hand Switch Selector is selected. Check motor or Control is operated.
  - Motor does not run when Foot / Hand Switch Selector is selected. Check motor or Control is operated.
  - Foot Control Cable is loose. Check connections.
  - Carbon Brushes are worn out. Replace with new carbon brushes.
  - Foot Pedal is not connected. Connect cables correctly.

- Motor Handpiece runs, but there is no control output.
  - Foot Pedal is not connected. Connect cables correctly.
  - Control output is not connected. Check connections.

- Foot Pedal runs, but there is no control output.
  - Foot Control Cable is loose. Check connections.
  - Carbon Brushes are worn out. Replace with new carbon brushes.
  - Control output is not connected. Check connections.

### Troubleshooting and Countermeasures for Handpiece

**Troubleshooting**

- Handpiece does not run
  - Foreign particles may be in ball bearing. Clean all bearing should be replaced at service center.
  - Foreign particles may be in ball bearing. Clean all bearing should be replaced at service center.
  - Foreign particles may be in ball bearing. Clean all bearing should be replaced at service center.

- Handpiece develops heat while running.
  - Excessive wear or abrasion of handpiece parts. Replace the handpiece.

- Operation is unstable
  - Foot pedal is worn. Replace the foot pedal.
  - Control loose in the handpiece. Clean the control securely.

- Bur slips out.
  - Loose chuck. Replace the chuck.

- Foot pedal lights.
  - Foot pedal does not work. Check the control unit or motor. Troubleshooting and Countermeasures for Motor and Control Unit
使用前，应先仔细阅读说明书，熟悉各部件的名称及作用。

操作方法
(1) 将工具线接入AC 220V～240V交流电上。
(2) 将手柄（ON／OFF）／脚踏开关打开，即可在后面，马达即开始运转，直到达到设定速度为止锁紧手柄（ON／OFF）／脚踏开关。停止马达运转。
(3) 停止马达运转时，先松开手柄（ON／OFF）／脚踏开关，然后再松开手柄（ON／OFF）／脚踏开关。防止马达反转。

马达试运转
(1) 若为交流马达，再次按“ON／OFF”开关，保持在ON状态，进行停转试验。
(2) 若为直流马达，禁止在ON状态进行停转试验。

注意事项
(1) 本机为双速马达，速度可调。使用时，应注意选择合适的速度，以保证使用安全。
(2) 使用时，应保持电源稳定，避免频繁启动和停止，以防电机过热，影响使用寿命。

故障排除
(1) 若马达不转动，检查电源是否接通，手柄（ON／OFF）／脚踏开关是否在ON状态。
(2) 若马达运转不正常，检查电源、手柄（ON／OFF）／脚踏开关是否有异常。
(3) 若马达运转声音异常，检查电机是否有异物进入。

售后服务
(1) 本机自购买之日起一年内，因质量问题免费维修。
(2) 保修期外，维修费用自理。

购买及使用过程中有任何疑问，可向我公司售后服务部咨询。

上海新潮机械有限公司
www.nsk-chang.com

咨询电话：021-6526-2722/2723
网址：www.nsk-chang.com

产品名称：NGS MIO

技术规格

<table>
<thead>
<tr>
<th>参数</th>
<th>详细信息</th>
</tr>
</thead>
<tbody>
<tr>
<td>输入电压</td>
<td>220V～240V</td>
</tr>
<tr>
<td>输入功率</td>
<td>1500W</td>
</tr>
<tr>
<td>输出速度</td>
<td>15000转/分</td>
</tr>
<tr>
<td>马达类型</td>
<td>直流马达</td>
</tr>
<tr>
<td>转速范围</td>
<td>0～15000转/分</td>
</tr>
<tr>
<td>马达外壳</td>
<td>铝合金外壳</td>
</tr>
</tbody>
</table>

相关链接

- 安全使用注意事项
- 故障排除
- 售后服务

特别提示：本说明书为概述性说明，具体细节请以实物为准。