IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THIS TRACTION HOIST. Failure to follow the safety precautions and instructions in this manual could result in serious injury, death or damage to the Hoist.

WARNING

- All operators must read and understand this manual before operating this Hoist.

- All operators must be fully trained in the use of the equipment including its safety features.

- Each day before the equipment is used, the operator must carry out the Daily Tests and Inspections described in Section 7 of this manual to confirm that equipment is in a normal and safe operating condition.

- Only authorized and physically fit operators shall operate the equipment.

- Any operation in violation of these instructions is at the operator's own risk and may result in serious injuries.

- Ask for a replacement if this manual is ever lost or becomes illegible.

- Only use spare parts and steel wire rope provided and/or specified by NIHON BISOH CO., LTD.

- Use only machinery or incorporated component, which has been declared to be in conformity with UL1323 and national implementing.

- Before erecting or dismantling and use of suspended scaffold, please read CODE OF SAFE PRACTICES FOR ADJUSTABLE SUSPENDED SCAFFOLDS CO-DEVELOPED BY SCAFFOLDING, SHORING and FORMING INSTITUTE (SSFI) and SCAFFOLD & ACCESS INDUSTRY ASSOCIATION, INC. (SAIA).

MANUFACTURER: NIHON BISOH CO., LTD.
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Attachment:
1. Electric Control and Electric Parts Function
2. CODE OF SAFE PRACTICES FOR ADJUSTABLE SUSPENDED SCAFFOL
0. READ BEFORE USING BISOMAC TRACTION HOIST

This Operator’s Manual had been prepared for the safe and proper operation of the BISOMAC Electric Traction Hoist (referred to as “BISOMAC”). To understand the usage of the BISOMAC Traction Hoist, please refer to the following explanation and system compositions. It is operator’s responsibility to be sure that this hoist is used safely and properly.

1. Power Supply to the equipment must be fitted with
   I. Main switch

   NOTE: Main switch with key-lock or Junction Box with key-lock shall be provided.

   II. Residual Current Device (or Ground fault circuit interrupter) of 30 mA

   III. Overcurrent Protective Device (Automatic fuse Type C)

   NOTE: Check that the specifications of the electrical supply cable match the power requirement of the platform and will avoid a voltage drop due to cable length.

2. Weather conditions
   I. Temperature Range: 14°F (-10°C) and 104°F (+40°C)
   II. Contaminants: Degree of protection IP54
   III. Altitude: Less than 3,280 ft (1,000 meter)
3. Precautions prior to use

I. Before using the equipment, operators must carry out the Daily Tests and Inspections described in Section 7 of this manual and make sure that the equipment is in normal working condition.

II. Before using the equipment, operators must confirm that there are no obstacles along the movement of the platform.

III. Before using the equipment, the suspension system must be checked to ensure the stability of the platform at all times.

IV. At work area of the platform, please take precautions against splash or fall to ensure the safety of the below people. (e.g. barriers, roof protected walkways, etc.)

V. All hazards related to the platform encountering obstructions are not completely covered by the platform’s safety devices. The operator shall check for obstructions along the travel of the platform.

VI. The overload protection may not protect the platform in all configurations. The operator must check that the loading of the platform does not exceed the rated load indicated on the nameplate.

VII. An area on the platform must be available to allow operators to operate the hoist safely.

VIII. Use approved personnel harnesses, lanyards, rope grabs, and independent lifelines at all times.

IX. Operating the equipment in low temperatures may reduce the ease of ascent, descent, and Emergency Controlled Descent of the platform. The operators must take measures to prevent the equipment from getting cold.

X. Emergency Controlled Descent of the platform may be slower with a light load on the equipment. The operators must not use the equipment with a load less than the minimum load for use in Section 2.1.

XI. Make sure suspension wire rope remains vertical and that the suspension points are directly above the hoist at all times.

Example 1: RIGHT

Suspension wire rope
Example 2:

![Diagram showing right and wrong positioning](image1)

Example 3:

![Diagram showing right positioning](image2)
4. Precautions during use

I. The operators must stop working with the equipment and notify the supervisor if faults, damage to the equipment or other circumstances may jeopardize safety.

II. A suitable communication between the operator and the supervisor is recommended.

III. When you leave a platform, shut off the power supply at the main switch and lock it so that no one else can operate it.

IV. When the hoist stops for more than 30 minutes in low temperature, the hoist can be difficult to rise. In that case, allow the hoist 30 seconds to idle or lower the hoist before trying to use.

5. Forbidden Uses

I. Two units or more of the BISOMAC are not allowed to use on one wire rope.

II. BISOMAC is not allowed to use by inserting a wire rope into the wire rope outlet.

III. Do not tight end of suspension wire rope when using BISOMAC.

IV. Do not apply more than 45 lbs discharge resistance to the end of wire rope.

V. BISOMAC is not allowed to use in the water.

VI. BISOMAC is not allowed to use as a lifting device of a permanent elevator.

VII. BISOMAC is not allowed to use as a medical traction device.
1. FOR SAFE USE

1.1 General

This Operator’s Manual is applicable to the BISOMAC Electric Traction Hoist manufactured by Nihon Bisoh Co., Ltd. The BISOMAC Traction Hoist (referred to as “Hoist”) consists of Hoist Device (referred to as “BISOMAC”) and Overspeed Detection Device (referred to as “BISOLOCK”) and Stirrup Adapter.

BISOMAC Traction Hoist consists of:

I. BISOMAC
II. BISOLOCK
III. Stirrup Adapter

NOTE: Safety Device means BISOLOCK in this manual.
NOTE: Please refer to Section 2 for specification of each device.

A) Read and fully understand this manual before using the BISOMAC.
B) The BISOMAC is designed for vertical ascent and descent of personnel-carrying suspended platforms. The BISOMAC should only be used for this purpose.
C) All operators must be fully trained in the use of the equipment including its safety features.
D) Daily Tests and Inspections described in Section 7 must be performed at the start of each work shift.
E) Use Section 9 troubleshooting guide in this manual to solve problems.

Understand the problem before attempting to solve it.
It is very important that anyone using the BISOMAC determine for themselves whether the BISOMAC is safe. You must be familiar with the operating characteristics of the BISOMAC. You must understand how the BISOMAC will interact with other equipment and it is very important to confirm safety of the whole platform. You must also be certain not to jeopardize yourself or others, or cause damage to the surroundings, or the BISOMAC.

1.2 Maintenance

Handling, maintenance, inspections and repairs of the following products must be performed by trained personnel only who have been read the BISOMAC Maintenance Manuals (another sheet).

NOTE: There are individual maintenance manuals for the hoist and safety devices.
1.3 Categories of Safety Instructions

The safety instructions are classified according to risk levels.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Code Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>WARNING</td>
<td>Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</td>
</tr>
<tr>
<td>!</td>
<td>CAUTION</td>
<td>Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to show potential damage to property.</td>
</tr>
<tr>
<td></td>
<td>NOTE</td>
<td>Indicates a potentially hazardous situation which, if not avoided, could result in damage of the BISOMAC or BISOMAC could not work properly.</td>
</tr>
</tbody>
</table>

Warning labels attached to Hoist and Safety Devices

The operator must check that the following labels are attached properly and legible.

**BISOMAC FRONT SIDE**

<table>
<thead>
<tr>
<th>Description</th>
<th>Message / LOCATION</th>
<th>Label</th>
</tr>
</thead>
</table>
| 1. Emergency Control Descent & Electromagnetic Brake Caution | • Instruction of Emergency Control Descent Lever  
• Instruction of Electromagnetic Brake  
• Warning of burnt | ELECTROMAGNETIC BRAKE |
### BISOMAC TOP SIDE

<table>
<thead>
<tr>
<th>Description</th>
<th>Message / LOCATION</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Lever Stopper</td>
<td>• Instruction of Brake Release Lever Stopper</td>
<td><img src="079-9567" alt="Safety Lock for Brake" /></td>
</tr>
<tr>
<td></td>
<td>LEVER STOPPER</td>
<td></td>
</tr>
<tr>
<td>3. Max Lift</td>
<td>• Instruction of Shackle max lift.</td>
<td>![Caution](MAX LIFT 165 lbs)</td>
</tr>
<tr>
<td></td>
<td>CASING A</td>
<td></td>
</tr>
<tr>
<td>4. Speciation and Operation</td>
<td>• Instruction of Specification and operation</td>
<td>![Bisomac 210](BISOMAC 210)</td>
</tr>
<tr>
<td></td>
<td>• With QR Code to access operator’s manual by electronic device</td>
<td>![Do Not Step](Do Not Step)</td>
</tr>
<tr>
<td></td>
<td>CONTROL BOX COVER</td>
<td></td>
</tr>
<tr>
<td>5. Ver. II</td>
<td>• Instruction of Version of BISOMAC</td>
<td>![Ver. II](Ver. II)</td>
</tr>
</tbody>
</table>
## Description

<table>
<thead>
<tr>
<th></th>
<th>Message / LOCATION</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>UL Classification</td>
<td>• UL Certification Label</td>
</tr>
<tr>
<td></td>
<td>CONTROL BOX COVER</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Emergency Stop Button</td>
<td>• Instruction of Emergency Stop Button</td>
</tr>
<tr>
<td></td>
<td>CONTROL BOX COVER</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OPERATOR’S MANUAL HOLDER</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Hour Meter</td>
<td>• Instruction of Hour Meter Ver. II only.</td>
</tr>
<tr>
<td></td>
<td>CONTROL BOX</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Ver. II</td>
<td>• Instruction of Version of BISOMAC Ver. II only.</td>
</tr>
<tr>
<td></td>
<td>CONTROL BOX</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Power Voltage</td>
<td>• Instruction of Power Voltage</td>
</tr>
<tr>
<td></td>
<td>FAN COVER</td>
<td></td>
</tr>
</tbody>
</table>
## BISOMAC BACK SIDE

<table>
<thead>
<tr>
<th>Description</th>
<th>Message / LOCATION</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Gear 210</td>
<td>• Specification of Gear</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GEAR BOX</td>
<td></td>
</tr>
<tr>
<td>14. Plug Mark</td>
<td>• Instruction of plug mark position of Safety Device</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONTROL BOX</td>
<td></td>
</tr>
<tr>
<td>15. Plug Connection</td>
<td>• Instruction when connecting the plug of safety device, and pendant switch</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONTROL BOX</td>
<td></td>
</tr>
</tbody>
</table>
| 16. NOTICE    | • Instruction of Pendant Switch  
Ver. II only.  | |
|               | CONTROL BOX        |       |

---

**WARNING**

Before connecting, check to make sure the plugs are dry and no water is left inside. Failures to do so may cause malfunction, resulting in serious injury or death.

---

**NOTICE**

Pendant control must be internally configured by authorized dealer before use.
### BISOLOCK FRONT SIDE

<table>
<thead>
<tr>
<th>Description</th>
<th>Message / LOCATION</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Instruction of inability of lifting</td>
<td>• Instruction to inability of lifting SIDE PLATE 1</td>
<td><img src="image" alt="CAUTION" /></td>
</tr>
<tr>
<td>2. Governor Inspection Window</td>
<td>• Instruction of Governor Rotation GOVERNOR COVER</td>
<td><img src="image" alt="GOVERNOR INSPECTION WINDOW" /></td>
</tr>
<tr>
<td>3. Overspeed Indicator &amp; Reset</td>
<td>• Instruction of BISOLOCK • Reset Lever Direction GOVERNOR COVER</td>
<td><img src="image" alt="OVERSPEED WARNING" /></td>
</tr>
</tbody>
</table>

### BISOLOCK BACK SIDE

<table>
<thead>
<tr>
<th>Description</th>
<th>Message / LOCATION</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Instruction of Overspeed Detection Device</td>
<td>• Instruction how to deal when the device activate • Instruction of BISOLOCK SIDE PLATE 2</td>
<td><img src="image" alt="WARNING" /></td>
</tr>
</tbody>
</table>
### BISOLOCK TOP SIDE

<table>
<thead>
<tr>
<th>Description</th>
<th>Message / LOCATION</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Wire Rope Diameter</td>
<td>• Instruction of Wire Rope Diameter</td>
<td></td>
</tr>
</tbody>
</table>

**SIDE COVER 1**

### BISOLOCK LEFT SIDE

<table>
<thead>
<tr>
<th>Description</th>
<th>Message / LOCATION</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Instruction of Manual Trip Button</td>
<td>• Instruction of Manual Trip Button</td>
<td></td>
</tr>
</tbody>
</table>

**GOVERNOR COVER**
<table>
<thead>
<tr>
<th>Description</th>
<th>Message / LOCATION</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wire Rope Exit</td>
<td>• Instruction of Wire Rope Exit</td>
<td>ROPE COVER</td>
</tr>
</tbody>
</table>

STIRRUP ADAPTER
2. SPECIFICATIONS

2.1 BISOMAC - Traction Hoist

PRODUCT LINEUP

<table>
<thead>
<tr>
<th>Model</th>
<th>Load Capacity (lbs)</th>
<th>Voltage</th>
<th>Ampere (A)</th>
<th>Wire Rope dia.</th>
<th>BISOLOAD 800</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1Phase 208V</td>
<td>8</td>
<td>5/16 in. 8 mm</td>
<td></td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13</td>
<td></td>
<td>0.315 in. (8.4 mm)</td>
<td></td>
<td>UL1323</td>
</tr>
<tr>
<td>210-1000L</td>
<td>1000</td>
<td>13</td>
<td></td>
<td>0.315 in. (8.4 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>210-1500L</td>
<td>1500</td>
<td>13</td>
<td></td>
<td>0.354 in. (9.5 mm)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Power 1Phase 208V ±10% (60Hz)

Motor Power 1000L: 0.9 kW (4P)
1500L / 1508L: 1.5 kW (4P)

Speed 35 ft/min (10.6 m/min)

Rated Operating Time 60 minutes

Minimum Load Capacity 440 lbs (220 kg)

Noise 64 dB

NOTE: This value is measured at a position 1 meter away from a noise meter. It varies depending on the power supply voltage and ambient environment.

Protection Construction IP54

Dimensions (H x W x D) w/safety devices 29.5 in. (749 mm) x 12.0 in. (305 mm) x 17.9 in. (455 mm)

Hoist Self Weight 108 lbs (49 kg)

Weight include safety devices 123 lbs (56 kg)
BISOLOCK SP-800: 11 lbs (5 kg)
BOSOLOCK bracket: 2 lbs (1 kg)
Stirrup Adapter: 2 lbs (1 kg)

Control Method Independent Control Method

Safety Features
1. Electromagnetic Brake
2. Controlled Descent Device
3. Emergency stop – Cut all power to the electric motor
MAINTENANCE

Maintain every 100 hour of operation hour or no longer than every year. See Maintenance Manual for instructions on maintaining.

NOTE: THIS DIFFERS FROM CONDITION OF USE AT WORK SITES, refer to Section 4 Work Environments.

2.2 BISOLOCK - Overspeed detection device

<table>
<thead>
<tr>
<th>Model</th>
<th>SP-800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Load</td>
<td>1,500 lbs (680 kg)</td>
</tr>
<tr>
<td>Activation Speed</td>
<td>98.4 ft/min (30 m/min)</td>
</tr>
<tr>
<td>Dimensions (H x W x D)</td>
<td>10 in. (253 mm) x 4.7 in. (120 mm) x 4 in. (103 mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>BISOLOCK SP-800 : 11 lbs (5 kg)</td>
</tr>
<tr>
<td></td>
<td>BISOLOCK Bracket : 2 lbs (1 kg)</td>
</tr>
<tr>
<td>Control Feature</td>
<td>No descending while this device is activated.</td>
</tr>
<tr>
<td>Voltage</td>
<td>208V</td>
</tr>
</tbody>
</table>

2.3 Stirrup Adapter

| Rated Load: | 1,500 lbs (680kg) |
| Dimension:  | 9.72 in. (247 mm high) x 3.58 in. (91 mm width) x 1.96 in. (50 mm depth) |
| Weight:     | 2 lbs (1 kg) |
| Attachment: | Guide Roller for wire rope |
### 2.4 WIRE ROPE (Variety specified by us)

**WARNING**

USE only authorized Wire Rope shown as below. Using any other Wire Rope could make BISOMAC and BISOLOCK malfunction. It could cause the platform to fall or tilt, possibly resulting in falls and serious injury or death.

<table>
<thead>
<tr>
<th>No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>8.4 mm</td>
<td>8.0 mm</td>
<td>8.0 mm</td>
<td>8.2 mm</td>
<td>8.3 mm</td>
</tr>
<tr>
<td>Construction</td>
<td>5x26</td>
<td>4x39</td>
<td>4x40</td>
<td>6x19 IWRC</td>
<td>4x26</td>
</tr>
<tr>
<td>Min. Breaking Load (actual)</td>
<td>51.5 kN (5,253 kg)</td>
<td>44.3 kN (4,520 kg)</td>
<td>44.4 kN (4,540 kg)</td>
<td>40.5 kN (4,131 kg)</td>
<td>45.0 kN (4,590 kg)</td>
</tr>
<tr>
<td>Treatment</td>
<td>Galvanized</td>
<td>Galvanized</td>
<td>Galvanized</td>
<td>Galvanized</td>
<td>Galvanized</td>
</tr>
<tr>
<td>Applicable Model</td>
<td>210-1000L</td>
<td>210-1508L</td>
<td>210-1500L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caution</td>
<td>Variety specified by us.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter</td>
<td>9.5 mm</td>
<td>9.0 mm</td>
<td>9.2 mm</td>
</tr>
<tr>
<td>Construction</td>
<td>5x19</td>
<td>4x36 WS</td>
<td>5x26</td>
</tr>
<tr>
<td>Min. Breaking Load (actual)</td>
<td>64.0 kN (6,530 kg)</td>
<td>67.15 kN (6,850 kg)</td>
<td>66.8 kN (6,816 kg)</td>
</tr>
<tr>
<td>Treatment</td>
<td>Galvanized</td>
<td>Galvanized</td>
<td>Galvanized</td>
</tr>
<tr>
<td>Applicable Model</td>
<td>210-1500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caution</td>
<td>Variety specified by us. This wire rope does not meet CAN/CSA-Z271-10, so it cannot be used in Canada.</td>
<td>Variety specified by us.</td>
<td></td>
</tr>
</tbody>
</table>
2. 5 Manufacturer Recommended Power Cable

**NOTE**
Due to the various possible suspended platform loading situations and electric voltage sources, it is not possible to specify the length of power cable exactly. In case the BISOMAC Traction Hoist has difficulties starting up due to low voltage, take counter measures against voltage drop by boosting the power supply voltage or using a thicker gauge cable such as 8/3.

<table>
<thead>
<tr>
<th>Recommended Type</th>
<th>SOOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core and Size</td>
<td>3 cores 10 AWG</td>
</tr>
<tr>
<td>Rated Voltage</td>
<td>600 V</td>
</tr>
<tr>
<td>Recommended Length</td>
<td>500 ft (152 m) per platform</td>
</tr>
</tbody>
</table>
3. FUNCTION AND DESCRIPTION OF EACH COMPONENT

3.1 BISOMAC TRACTION HOIST
<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Electric Motor</td>
<td>BISOMAC is powered by electricity through gear drive.</td>
</tr>
<tr>
<td>B Gear Box</td>
<td>Decelerate motor’s rotation for lifting appointed suspension load and speed.</td>
</tr>
<tr>
<td>C Electromagnetic Brake</td>
<td>Electromagnetic Brake is released when the Operation Button is pressed. The BISOMAC stops when the Operation Button is released or the main power is disconnected.</td>
</tr>
<tr>
<td>D Control Box</td>
<td>Electric components are assembled to control the BISOMAC lifting.</td>
</tr>
<tr>
<td>E Fluid Refill Hole</td>
<td>Use when replacing oil.</td>
</tr>
<tr>
<td>F Suspension Wire Rope Inlet</td>
<td>For inserting main suspension wire rope.</td>
</tr>
<tr>
<td>G Carrying Handles</td>
<td>Use when carrying BISOMAC.</td>
</tr>
<tr>
<td>H Serial Number</td>
<td>BISOMAC Serial Number.</td>
</tr>
<tr>
<td>I Fluid Drain Hole</td>
<td>Use when replacing oil.</td>
</tr>
<tr>
<td>J Emergency Descent Lever</td>
<td>This allows the platform to be lowered at regular speed when electrical power to the BISOMAC is lost.</td>
</tr>
<tr>
<td>K Protection Cover</td>
<td>Does not allow water and dirt to get into Electromagnetic Brake.</td>
</tr>
<tr>
<td>L Water-proof Cap Bolt</td>
<td>Cap bolt with sealing to avoid water getting into the Electromagnetic Brake.</td>
</tr>
<tr>
<td>M Lever Stopper</td>
<td>Lock automatically to prevent misoperation and malfunction of Emergency Descent Lever.</td>
</tr>
<tr>
<td>N Shackle for Transportation</td>
<td>Only use at transportation of the BISOMAC. CAUTION: Max lifting load is 165bs (75g).</td>
</tr>
<tr>
<td>O Guard Plate for Brake Leads</td>
<td>Protect Brake Leads from damages.</td>
</tr>
<tr>
<td>P Oil Level Gauge Plug</td>
<td>Use when replacing oil.</td>
</tr>
<tr>
<td>Q Hour Meter</td>
<td>Shows the BISOMAC’s integrated operating hours.</td>
</tr>
<tr>
<td>R AC Power Plug</td>
<td>This plug is for connecting the BISOMAC to the worksite power supply.</td>
</tr>
<tr>
<td>S Fan Cover</td>
<td>Protects operator from being struck by the fan and prevents damage to the fan and motor</td>
</tr>
<tr>
<td>U Power Indication &amp; Operation Button</td>
<td>The Power Indication is lit when connecting power. Controls the vertical motion of the BISOMAC. Operation Button disengages when released.</td>
</tr>
<tr>
<td>V Emergency Stop Button</td>
<td>This Button is for emergency stop. Press this Button in case the BISOMAC does not stop even releasing the Operation Button.</td>
</tr>
<tr>
<td>Y Cable Guard</td>
<td>Protection Metal for Cable and Connector.</td>
</tr>
<tr>
<td>OP Inlet for Pendant Switch (Optional)</td>
<td>Allow using Up/Down by remote control pendant switch.</td>
</tr>
<tr>
<td></td>
<td>NOTE: Pendant switch is optional.</td>
</tr>
<tr>
<td></td>
<td>Please contact local authorized the BISOMAC distributor.</td>
</tr>
<tr>
<td></td>
<td>NOTE for Ver II: When Pendant Switch is in use, you cannot operate with the Operation Button on the BISOMAC.</td>
</tr>
</tbody>
</table>
3.2 BISOLOCK

BISOLOCK engages wire rope when platform suddenly falls. Once BISOLOCK activates, the platform would not descend due to electric interlock. You can confirm the activation visually by the indicator lamp on the hoist. During the activation, you can ascend but not descend. The indicator lamp on the BISOLOCK is lit, when pressing “Down” Button.

**WARNING**

When platform suddenly falls and the BISOLOCK activates, only trained and authorized personnel are allowed to reset this device. Contact the local authorized BISOMAC distributor and wait for rescue of the operators on the platform. Improperly resetting the device may result in the platform falling and tilting, allowing persons or things to fall and possibly resulting in serious injury, death or damage.

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>BISOLOCK Bracket</td>
</tr>
<tr>
<td>B</td>
<td>BISOLOCK Bracket and BISOLOCK Special Bolt (Q’ty: 4 pcs)</td>
</tr>
<tr>
<td>C</td>
<td>Reset Lever</td>
</tr>
<tr>
<td>D</td>
<td>Governor Inspection Window</td>
</tr>
<tr>
<td>F</td>
<td>Manual Trip Button</td>
</tr>
<tr>
<td>F</td>
<td>Overspeed Indicator</td>
</tr>
</tbody>
</table>
3.2 Stirrup Adapter

Use the Stirrup Adapter to connect BISOMAC to Stirrup. The Stirrup Adapter equips Guide Roller to support wire rope discharging from BISOMAC.

<table>
<thead>
<tr>
<th>FUNCTION</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Bolt for Stirrup Adapter Bolt to connect Stirrup Adapter to BISOMAC. (Q'ty: 1 pcs)</td>
</tr>
<tr>
<td>B</td>
<td>Bolt for Stirrup Bolt to connect Stirrup Adapter to Stirrup. (Q'ty: 2 pcs)</td>
</tr>
<tr>
<td>C</td>
<td>Guide Roller Guide Roller to support load of suspension wire rope discharging from BISOMAC.</td>
</tr>
</tbody>
</table>
4. WORK ENVIRONMENT

Many work environments contain contaminants that could adversely affect the performance of the BISOMAC and the Safety devices. Perform the daily tests described in Section 7 to ensure that the BISOMAC is operating properly. If contaminants such as paint, epoxy, cement, corrosive chemicals or sand blasting is present at the work site, use the protective cover for BISOMAC and the safety devices in accordance with instructions and precautions below on this page.

The protective cover may obstruct some or all of the safety warnings and instruction labels on the BISOMAC and the safety devices. Before operating the BISOMAC and the safety devices equipped with the protective cover, the operator must remove the protective cover and read and understand all of the labels on the BISOMAC. Each new operator must fully understand all warning and instruction labels before operating the BISOMAC.

**WARNING**

ALWAYS test and inspect the BISOMAC on a daily basis especially in work environments contains contaminants. Maintain hoist (see Maintenance Manual) after completing work at each work site to remove dusts and foreign objects inside of the hoist. Improper maintenance may result in the platform falling or tilting, allowing persons or things to fall or tilt and possibly resulting in serious injury, death or damage.

**WARNING**

NEVER use the BISOMAC in an explosive atmosphere, under water, or in a marine environment. Especially, use in explosive or wet atmospheres could result in serious injury or death from fire, explosions, or electric shock.

NOTE: An explosive atmosphere is one in which flammable gases or vapors or small particles are or may be present in the air in quantities sufficient to produce an explosive or ignitable mixture.

**CAUTION**

Prolonged use of the BISOMAC with the protective cover in place may result in the motor overheating due to restricted air supply. This can cause the BISOMAC to stop moving. When using the protective cover, be sure that the cooling fan has an unobstructed air supply to the motor and the motor is not overheated.

NOTE: Make sure to use the protective cover for BISOMAC and the safety devices, if contaminants such as paint, epoxy, cement, corrosive chemicals or sand blasting are present at the work site.
NOTE: In an environment temperature below the freezing point, components of the hoist might be impaired with water drops or moisture frozen. Also, BISOMAC may not start well with the gear box oil hardened. Please take countermeasures not to have the inside of the hoist frozen after work.

5. SET UP INSTRUCTIONS

This section describes procedure of the BISOMAC for safety operation. Before attempting set up, read and understand Steps 1 - 5 of this section which describes the installation procedures of the BISOMAC and the safety devices.

**WARNING**

**WARNING**

DO NOT allow anyone under suspended platform. If necessary, provide protection below the suspended platform to prevent potential serious injury or death to passers-by from falling objects.

**WARNING**

DO NOT use different types of hoists in the same platform. Otherwise, an operation error may occur from the difference in the hoists' performance (ascending and descending speed, etc.) and the difference of the operation method and the safety unit. This may result in the platform falling or tilting, allowing persons or things to fall or tilt and possibly resulting in serious injury, death or damage.  

**WARNING**

When attaching the BISOMAC to the platform, it is necessary to plan how to attach safety devices in advance, otherwise, the safety devices may not activate. Failure to activate may cause serious injury, death or damage.

**WARNING**

Attach Ground Fault Circuit Interrupter to power source and ensure that is properly grounded. Failure to do so increases the risk of electric shock or electrocution.

**WARNING**

DO NOT use damaged or cracked power cable and control cables. Doing so could result in electrocution or death.
**WARNING**

When connecting the plug to the Pendant Switch Inlet or the Safety Devises to BISOMAC, verify that inner side of the plug is dry and there is no deposit of water. Due to malfunction of hoist, platform may fall down or topple the operator, and there is a risk of injury or death of the operator or the passerby.

**CAUTION**

Use protective cover over the BISOMAC. Otherwise the BISOMAC get dirty and may malfunction.

**CAUTION**

Replace rubber cover of the Power Indicator and the Operation Button if they get damaged. Otherwise, the button and indicator get dirty and may malfunction.

**CAUTION: CONNECTING POWER**

**CAUTION**

The Voltage supplied to the BISOMAC should not exceed ±10% rated voltage (See Section 2.1) while lifting. If the voltage is not in the proper range, the BISOMAC may not operate or the motor may overheat and malfunction or create a burn hazard. Note: The rated voltage range shown above is permitted to only temporary operation. It is not permitted to continuous operation of the BISOMAC.
**WARNING: MAIN WIRE ROPE AND SAFETY WIRE ROPE**

**WARNING**
The BISOMAC and BISOLOCK operation requires the use of authorized wire rope and the strict adherence to the operation methods and the instructions. If using a wire rope that is not required, the wire rope will have reduced strength and will be served. This may cause the platform to fall or tilt, resulting in falls and serious injury or death.

**WARNING**
DO NOT expose the wire rope to fire, temperatures above 200°F (93°C), electrical current, or corrosive atmospheres and chemicals. Doing so will reduce the rope’s strength and possibly allow the rope to break. This could result in platform falling or tilting, possibly causing serious injury, death or damage.
- Discard the wire rope if any damage is evident after completing the project.
- If there is anything suspicious, replace with a new wire rope.
- Discard wire rope that has been exposed to any of these conditions.

**WARNING**
The suspension wire rope should be long enough (lifting height plus at least 6.56 ft. / 2 meter) to cover the height where the platform is placed on the ground or on the specified area. If the wire rope cannot cover the height where the platform can be placed on a stable area, the wire rope may slip out of the BISOMAC. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING**
DO NOT operate the BISOMAC with a wire rope having a kink or deformation. Doing so will damage the hoist inside and interfere with the up and down movement of the BISOMAC. Also, this may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING**
When fixing the suspension wire rope and the safety wire rope to the building material, be sure that these wire ropes are not contacting any sharp edge. Otherwise, if the wire rope becomes heavily loaded and severed by a sharp edge, this may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.
**WARNING**

The wire rope should be able to go through the inside of the BISOMAC freely. Inconsistent winding speed suggests the wire rope or the BISOMAC may be damaged. Stop operation at once and replace the wire rope or the BISOMAC. If it is used continuously, the wire rope may be severed or the BISOMAC may stop. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING**

DO NOT fasten or apply load to the tail end of the suspension wire rope discharged from the BISOMAC. Otherwise, the internal parts of the BISOMAC will become extremely worn and the wire rope may be damaged or severed. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**CAUTION**

DO NOT put your hand near the wire rope inlet when self-reveeing the wire rope and moving the platform up and down. Otherwise, your hand may be caught in the opening along with the wire rope, causing serious injury.

**CAUTION: BISOMAC INSTALLATIONS**

**CAUTION**

DO NOT throw or drop the BISOMAC. The BISOMAC may become damaged and cannot be used and may result in serious injury or property damage.

**CAUTION**

DO NOT pull or step the cables of the safety device. Lead the cables and connector to break, BISOMAC and Safety Devices cannot be used.
**STEP1**  
Installation of Safety Devices to the Hoist

Install the BISOLOCK and Stirrup Adapter to BISOMAC. See instructions below.

---

**A. BISOLOCK provided with:**
- BISOLOCK Bracket: 1 pc
- BISOLOCK Special Bolts: 4 pcs
- M12 Washers: 4 pcs
- M12 Nylon Nuts: 4 pcs

**B. Stirrup Adapter provided with:**
- Special Bolts: 1 pcs
- M12 Washers: 2 pcs
- M12 Nylon Nuts: 2 pcs
1. Attach the BISOLOCK Bracket to the BISOMAC with tightening 2 Bolts, 2 Washers and 2 Nylon Nuts.

2. Insert BISOLOCK Bracket into the BISOLOCK from the top as shown and tighten with 2 BISOLOCK Special Bolts, 2 Washers, and 2 Nylon Nuts. Install it so that the Electromagnetic Brake and the Reset Lever will face the same side. Use Torque Wrench to tighten the Bolts. (See Fig.1)

   **Torque Standard: 76 N·m (770 kgf·cm)**

3. Attach the Stirrup Adapter with the BISOMAC from the bottom as shown and tighten with a Special Bolt provided, 2 Washers and 2 Nylon Nuts. Use Torque Wrench to tighten the Bolts.

   **Torque Standard: 76 N·m (770 kgf·cm)**

4. Connect the Plug of the BISOLOCK and BISOLOAD to the BISOMAC as shown (See Fig.2).

   **Fig. 2**

   ![Diagram of BISOLOCK and BISOMAC connection](image)
5. Insert the white mark (yellow arrow part) of the connector at the motor side and turn it counterclockwise to fix the connector. (See Fig.3)

6. When removing the connector, pull it downward while turning it clockwise. (See Fig.3)

**Fig. 3**

---

**STEP 2  Connection of Power Supply**

**WARNING**

DO NOT pull or step the cables of the safety device and AC power plug. Lead the cables and connector to break and it could result in electrocution or death.

**CAUTION**

Use electric power source and power cable suitable for BISOMAC. When electric power source not suitable to specifications is used, it may heat up and damage the cable etc., and equipment may no longer operate normally.

1. Connect the AC Power Plug of the BISOMAC to power distribution board. Please check the types of connector.

   The types of female connector and the cover are shown below.

   - 1Phase : HBL2323 (Maker: HUBBEL)
   - Cover   : HBL6032 (Maker: HUBBEL)
2. Necessary power per units is shown below.

<table>
<thead>
<tr>
<th>Model</th>
<th>Ampere (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>210-1000L</td>
<td>8</td>
</tr>
<tr>
<td>210-1500L</td>
<td>13</td>
</tr>
<tr>
<td>210-1508L</td>
<td>13</td>
</tr>
</tbody>
</table>

If pair of hoists is used on the same platform, install “Y” electric supply yoke in the power line to provide power to each hoist.

3. Ensure that the Emergency Stop Button of the BISOMAC and the interlock of the Safety Devices are reset.

   How to Confirm;
   - Emergency Stop Button lump is not lit.
   - BISOLOCK reset lever is the vertical position.

4. Ensure that current capacity and size of circuit fuse of main switch is adequate, refer to specification in section 2.

5. Check if connector has any sign of deterioration etc.
**STEP 3 Main Wire Rope Reeving**

1. Insert the bullet end of the wire rope approximately 16 in. (40 cm) into the suspension wire rope inlet of the BISOMAC.

2. Press the "UP" Button while maintaining downward pressure on the wire rope until self-reeving starts.

3. Make sure the wire rope can freely exit the BISOMAC and is not blocked by any parts.

4. Install the suspension wire rope so that rope-to-rope distance of platform side and rigging side become equal.

5. To avoid run off the suspension wire rope from the BISOMAC, make the loop on the end of the suspension wire rope and fix it using the clamp as shown in the illustration.

*Fig. 4*
STEP 4 Mounting BISOMAC to the platform

Press the “UP” Button to lift the BISOMAC from ground so that the hole of the Stirrup Adapter and the hole of stirrup are lined up, and then attach the hoist to the stirrup as shown in below with 2 Special Bolts, 4 Washers and 4 Nylon (provided by Nihon Bisoh). Position of the Rope End should be outside of the platform as shown in Fig.4¥5. Use Torque Wrench to tighten the Bolts.

Torque Standard: 76 N·m (770 kgf·cm)

STEP 5 Perform Daily Inspection

Follow Daily Tests and Inspections procedures in Section 7.
6. OPERATION / HANDLING METHODS

This section describes the following methods to safely handle and operate of the BISOMAC.

1. Explanation of operation and storage of the BISOMAC.
2. Explanation of operation methods of the BISOMAC.

⚠️ WARNING

Each BISOMAC operator has to understand this operator’s manual and the warning label before using. If the operator operates the BISOMAC improperly, this may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

⚠️ WARNING

DO NOT exceed the maximum load of the BISOMAC. The rigging portion may fall, resulting in potential of death or injury to operators or passers-by.

⚠️ CAUTION

DO NOT apply excess load on the shackle for transportation. Applying load of 165 lbs (75 kg) above may damage the bow shackle, because of which BISOMAC may fall down and cause injury and damage the surrounding objects.

⚠️ WARNING: CARRYING

⚠️ CAUTION

The Carrying Handle is designed for carrying. Using for other purpose may cause injury or damage the surrounding objects.

⚠️ CAUTION

The Carrying Handle must be used by hand. If not, BISOMAC may fall down because of the serious damage of handle while moving, which may cause injury or damage the surrounding objects.

⚠️ CAUTION: STORAGE

⚠️ CAUTION

When not in use, remove Stirrup Adopter from the BISOMAC. (Section 5, step 1) Please store with care. Otherwise BISOMAC may fall down and cause injury, damage BISOMAC itself or surroundings.
NOTE: DO NOT stack up BISOMAC because it may damage BISOMAC making it unusable.

**WARNING: REMOTE CONTROL PENDANT SWITCH**

⚠️ WARNING

Make the remote control cable length reachable from BISOMAC.
If you are operating at a location away from the BISOMAC, you cannot press the emergency stop button on the BISOMAC in an emergency, and this may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

⚠️ WARNING

When remote control pendant switch is not in use, make sure to cover the inlet by water proof cap.
BISOMAC malfunction may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING: LIFTING AND EMERGENCY STOP**

⚠️ WARNING

DO NOT have the Operation Button continuously depressed. Otherwise, the BISOMAC cannot stop. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

⚠️ WARNING

Always allow the BISOMAC to come to a full stop before changing the direction of travel. Failure to do so may result in control circuit failure, or may prevent the BISOMAC from stopping. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

⚠️ WARNING

DO NOT use the BISOMAC if the Emergency Stop Button does not operate. Failure to do so may result in control circuit failure, or may not prevent the BISOMAC from stopping. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.
**WARNING**

Manually operate the emergency stop button and the raising/lowering button. Operating the buttons using tools etc. may damage the switch cover and the switch. Because of this, water may seep in and BISOMAC may not stop operating. Platform may tilt and operator or loaded objects may fall down resulting in injury or death of the operator or the passerby.

**WARNING**

Use the Emergency Descent Lever only in the event of loss of electric power. Put the Emergency Descent Lever through the hole of the Lever Stopper and attach it with screw after using. Otherwise, the BISOMAC may not stop, and this may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING**

DO NOT use the Emergency Descent Lever when operating the Operation Button. Otherwise, the BISOMAC may not stop, and this may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING**

Confirm that the Emergency Descent Lever is locked by the Lever Stopper and in the vertical position before operating the BISOMAC up and down. The brake may not function properly, causing the platform to continue to descend. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING**

Always operate the Emergency Descent Lever by hand. Otherwise, the BISOMAC cannot be stopped instantly. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.
**WARNING**

Make sure Emergency Descent Lever is locked automatically by lever stopper after use. (Fig.6) Otherwise, BISOMAC cannot be stopped instantly. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**CAUTION**

Be sure to remove the AC Power Plug of the BISOMAC from power source before using the Emergency Descent Lever. Otherwise, sudden movement may be induced when the power is regained. This may cause serious injury, death or damage to operators or passers-by.

**CAUTION**

Pull the Emergency Descent Lever as far as it go toward. If failed to do so, it may result in serious burns, overheating of the BISOMAC and premature brake wear. If this occurs, the brake may become not repairable.

NOTE: DO NOT use the BISOMAC if the platform does not descend using the Emergency Descent Lever. Otherwise, the platform may not descent and it may not be possible to rescue operators in the event of a power failure. DO NOT use the BISOMAC until it is repaired and retested.

**WARNING: BISOLOCK**

**CAUTION**

Ensure to manually operate the Manual Trip Button. If not, it could make the Manual Trip Button break and BISOLOCK may malfunction.

**CAUTION**

DO NOT reset BISOLOCK forcibly. The pin inside the reset lever to brake and BISOLOCK may not function properly.
6.1 Carrying BISOMAC Traction Hoist
For safety transportation, separate the BISOMAC, BISOLOCK and Stirrup Adapter to section 5, step 1.

BISOMAC self-weight: 108 lbs (49 kg)
BISOLOCK self-weight: 11 lbs (5 kg)
BISOLOCK Bracket self-weight: 2 lbs (1 kg)
Stirrup Adapter self-weight: 2 lbs (1 kg)

6.2 BISOMAC Traction Hoist ‘s Operation and How to Use

6.2.1 Operation and Use of Emergency Stop
• BISOMAC ascends by pressing “Up” Button
• BISOMAC descends by pressing “Down” Button.
• BISOMAC stops by pressing “Emergency Stop Button” and will not ascend or descend.

6.2.2 Emergency Descent Lever
• In the event of loss of electric power, the BISOMAC may be lowered at regular speed using this Emergency Descent Lever.
• The procedure is shown as below.

A) Disconnect the AC Power Plug of the BISOMAC from Power source.
B) Loosed the screw and unlock the lever stopper. (Fig.6)
C) Release the Electromagnetic Brake by gently pulling the Emergency Descent Lever as far as it will go toward the arrow as shown. The BISOMAC safely lowers at regular speed. (Fig.6)
D) Release your hands from the Emergency Descent Lever, then BISOMAC will stop.

NOTE: Do not apply excessive force to the Emergency Descent Lever. Applying a force of about 100 kg, it will damage the Pin and it will be impossible to descend in case of emergency. (Fig. 7) Please refer to Maintenance manual when it is needed to be fixed.

Fig. 6
Fig. 7
6.2.3 How to Reset BISOLOCK

**WARNING**

**DO NOT** reset the **BISOLOCK** until the safety is confirmed.
This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

Please follow the following instructions how to Reset BISOLOCK.

A) Push “UP” button and reel in wire rope approx. 2 in (5 cm).
B) Push the Reset Lever downward to reset the BISOLOCK. (Fig.8)
C) If both of the indicator lamps is not lit, BISOLOCK is successfully reset. (Fig.8)

![Fig. 8](image-url)
7. DAILY TESTS AND INSPECTIONS

This section describes necessary test procedure before and after installation of the BISOMAC.

- Read and understand Steps 7.1 to 7.5 of this section describing the inspection and installation procedures of the BISOMAC before using.
- Follow each device’s maintenance manuals if the daily tests and inspections are not described in this manual.

**WARNING**

DO NOT allow anyone under suspended platform. If necessary, provide protection below the suspended platform to prevent potential of death or injury to passers-by from falling objects.

**WARNING**

NEVER perform any disassembly, maintenance, repair, or part replacement of the BISOMAC when it is suspended in air or is under load. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING**

ALWAYS test and inspect the BISOMAC on a daily basis, otherwise the BISOMAC may malfunction. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING**

Operator MUST carry out the DAILY TESTS AND INSPECTIONS in this manual to confirm that equipment is in a normal and safe operating condition. If not, it may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING**

Test and inspect the BISOMAC on a daily basis especially in work environments that contain contaminants. (refer to section 4) Maintain hoist after completing work at each work site to remove dusts and foreign objects inside of hoist. Failure to do so may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.
**WARNING: TEST PROCEDURE OF RIGGING METAL**

⚠️ **WARNING**

If the Rigging is in an abnormal condition, STOP using platform. If the wire rope runs out from rigging or wire rope is cut, this may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING: TEST PROCEDURE OF WIRE ROPE**

⚠️ **WARNING**

The wire rope will wear out with repeated operation. Therefore, it must be regularly inspected to be sure it is in good condition. If you use a wire rope that is deformed or damaged, it will have reduced strength and may break. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING: TEST PROCEDURE OF LIFTING PLATFORM AND EMERGENCY STOP FUNCTION**

⚠️ **WARNING**

If you hear any strange noises such as grinding during operation or if the BISOMAC does not appear to work normally, STOP it immediately. DO NOT continue to use the BISOMAC until it is replaced. It is possible that parts inside the BISOMAC have been damaged. Continuing to use the BISOMAC may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

⚠️ **WARNING**

STOP the BISOMAC immediately, when the BISOMAC is suspended in the air and the motor is running but the wire rope is not moving through the BISOMAC. Damaged wire rope may be jammed inside the BISOMAC. Any attempt to move the BISOMAC up or down can damage the equipment and/or sever the wire rope, making the BISOMAC unable to sustain a load. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.
**WARNING**

DO NOT use the BISOMAC if the Indication light is not visible when the Emergency Stop Button is pressed. Otherwise, the Emergency Stop device may not be operating and this may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**CAUTION**

When oil is leaking from BISOMAC, stop using BISOMAC and replace with a defect-free product. Reduction in the amount of oil increases the temperature of the Gear Reducer which may cause burn injury. Besides, operating it at high temperature may emit smoke from Gear Reducer and it may not be possible to ascent or descent the equipment.

**WARNING**

If the BISOMAC has a defect, replace it with one that has passed the pre-shipment inspection by certified personnel. BISOMAC, which has not passed the pre-shipment inspection, may malfunction or not perform normally. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

**WARNING**

DO NOT use the BISOMAC if BISOLOCK does not engage the wire rope. Replace it with a properly operating BISOLOCK, failure to do so may cause the suspension wire rope to be cut, the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.
7.1 Test Procedure for Rigging

Inspect all components of the suspended platform, especially the components supporting loads, to be sure there are no signs of damage or excessive wear and that all fasteners (nuts, bolts, clamps, wire-clip, shackle, etc.) are properly and securely tightened.

7.2 Test Procedure for Wire Rope

7.2.1 Wire Rope and profile and dimension

- Wire rope MUST be taken out of service when ANY of the following conditions apply, refer to Picture.2.

![Picture. 2]
A. Loose, kinked, crushed, bird caged wire rope, waviness (more than 4/3d) or any damage resulting in distortion of the rope structure.

B. More than 10% of single wire is broken in one lay. (Fig.9)

Example: Wire Rope construction 6 x 19

\[
6 \times 19 = 114 \text{ wires} \times 10\% = 11 \text{ wires}
\]

C. In case the average diameter of wire rope is;

- 5/16 inch (8 mm)
  - Dropped below \( \phi 0.307 \text{ inch. (7.8 mm)} \)
  - Exceeded \( \phi 0.331 \text{ inch. (8.4 mm)} \)

- 3/8 inch (9 mm)
  - Dropped below \( \phi 0.346 \text{ inch. (8.8 mm)} \)
  - Exceeded \( \phi 0.374 \text{ inch. (9.5 mm)} \)

D. Pitting on wire surfaces due to rusting corrosion.

E. Evidence of exposure to temperatures above 200° F (93° C).

- With the load applied on the wire rope, measure the average value by taking measurement of diameter of circumcircle at two diagonally opposite places. Take measurement at few places in the length direction of rope.

NOTE: DO NOT use wire rope that has been worn, kinked, bird caged or damaged. Replace it with new wire rope.
7.2.2 Preparation of the end of the wire rope

- The end of the wire rope must be prepared for insertion into the BISOMAC, refer to Picture.3.

NOTE: Improperly prepared bullet can cause the wire rope to jam in the BISOMAC, and the wire may get stuck in the hoist.

- The end of the wire rope treatment is shown as below.

<table>
<thead>
<tr>
<th></th>
<th>0.315 in. (8 mm)</th>
<th>0.354 in. (9 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A.</strong> Wire rope diameter</td>
<td>0.315 in. (8 mm) to 0.331 in. (8.4 mm)</td>
<td>0.354 in. (9 mm) to 0.374 in. (9.5 mm)</td>
</tr>
<tr>
<td><strong>B.</strong> Braze distance</td>
<td>Within 0.197 in. (5 mm)</td>
<td>Within 0.394 in. (10 mm)</td>
</tr>
<tr>
<td><strong>R.</strong> Top Radius</td>
<td>R 0.118 in. (3 mm)</td>
<td>R 0.197 in. (5 mm)</td>
</tr>
</tbody>
</table>

**Picture.3**
7.3 Test and Inspection of BISOMAC Traction Hoist

Preliminary inspection items

- Check that none of the bolts/nuts and Operator’s Manual Cap are loose.
- Check the visual appearance of the Traction Hoist (Include Cables and Connectors) that there is no damaged place such as crack or deformation.
- Check that the emergency stop button cover and ascent/descent button cover are not damaged such as crack.
- Check if BISOMAC are installed properly in the platform.
- Make sure the BISOMAC is connected to the stirrup properly and the AC Power Plug is connected to power source properly. And check circuit breaker.

7.3.1 Test Procedures for Lifting and Use of the Emergency Stop

When operated by BISOMAC main switch
1. Press the Operation Button of the BISOMAC to raise the platform about 40 in. (100 cm) off the ground and then lower it to its original position. Repeat this procedure several times. Check that there is not abnormal vibration such as the BISOMAC is shaking.
2. Check that hour meter is working normally.
3. Press the Emergency Stop Button to disconnect the power to the BISOMAC.
4. Make sure that the Indication light for the Emergency Stop Button is lit.
5. Press the Operation Button to confirm that the BISOMAC will not operate.
6. Reset the Emergency Stop Button and confirm that the BISOMAC will operate.

When operated by REMOTE CONTROL PENDANT SWITCH.
1. Press the Operation Button of the PENDANT SWITCH to raise the platform about 40 in. (100 cm) off the ground and then lower it to its original position. Repeat this procedure several times. Check that there is not abnormal vibration such as the BISOMAC is shaking.
2. Check that hour meter is working normally.
3. Press the Emergency Stop Button of the PENDANT SWITCH and shutdown the power supply of BISOMAC.
4. Verify that the red color display lamp of the Emergency Stop Button of the main body lights up.
5. Press the Operation Button of the PENDANT SWITCH and verify that BISOMAC doesn’t operate.
6. Press the Operation Button of the main body and verify that BISOMAC doesn’t operate.
7. Reset the Emergency Stop Button of the PENDANT SWITCH, and verify that the platform moves up and down once again.
8. Press the Emergency Stop Button of the main body and shutdown the power supply of BISOMAC.
9. Verify that the red color display lamp of the Emergency Stop Button of the main body lights up.
10. Press the Operation Button of the PENDANT SWITCH and verify that BISOMAC doesn't operate.
11. Press the Operation Button of the main body and verify that BISOMAC doesn't operate.
12. Reset the Emergency Stop Button of the main body, and verify that the platform moves up and down once again.

7.3.2 Test Procedures for Controlled Descent Device

**CAUTION**

Be sure to remove the AC Power Plug of the BISOMAC from power source when using the Emergency Descent Lever. Otherwise, sudden movement may be induced when the power is regained. This may cause serious injury, death or damage to operators or passers-by.

**CAUTION**

Pull the Emergency Descent Lever as far as it go toward. If failed to do so, it may result in serious burns, overheating of the BISOMAC and premature brake wear. If this occurs, the brake may become not repairable.

1. Raise the platform about 40 in. (100 cm) off the ground.
2. Disconnect the AC Power Plug of the BISOMAC from power source.
3. Release the Lever Stopper.
4. Release the Electromagnetic Brake by gently pulling the Emergency Descent Lever as far as it will go toward the arrow. The BISOMAC should safely lower at regular speed.
5. Confirm that the platform slowly descend at a controlled speed.

**NOTE:** If the descent speed looks too fast, contact local BISOMAC distributor.
7.3.3 Test Procedures for BISOLOCK

**CAUTION**

Ensure to manually operate the Manual Trip Button.
If not, it could make the Manual Trip Button break and BISOLOCK may malfunction.

Perform the following procedure to confirm of the BISOLOCK is operating normally.

1. Insert about 12 in. (30 cm) of wire rope into the BISOLOCK inlet.
2. Pull up the wire rope quickly.
3. Make sure that the wire rope is engaged.
4. Make sure the Overspeed Indicator lamp is lit when pressing the “Down” Button.
5. Push down the Reset Lever to reset the BISOLOCK.
6. Make sure the Overspeed Indicator lamp is not lit when pressing the “Down” Button.

Perform the following procedures to make sure the BISOLOCK holds loads normally.

1. Raise the platform about 20 in. (50 cm) off the ground.
2. Press the Manual Trip Button to activate the BISOLOCK. The Reset Lever turns anticlockwise and the Overspeed Indicator lamp is visualized.
3. Release the Electromagnetic Brake by pulling the Emergency Descent Lever to lower the platform.
4. The BISOLOCK engages the wire rope and the platform stop descending.
5. Press “Down” Button to confirm the platforms will not descent.
6. Confirm that the Overspeed Indicator lamp is lit when pressing “Down” Button.
7. Press down the Reset Lever while pressing “UP” Button to reset the BISOLOCK.
8. Push Operation Button to raise platform and confirm that the Governor is rotating.
   Perform same procedure to the other side of the BISOLOCK.

**NOTE:** If the BISOLOCK does not engage the wire rope, contact the BISOMAC local distributor and replace it with a properly functioning BISOLOCK.
8. PERIODIC INSPECTIONS

The BISOMAC has to conduct the following periodic inspections if the BISOMAC experiences the following conditions. The periodic inspections have to be performed by certified personnel.

The following time periods should be used to determine to perform periodic inspections. However, depending on job and environmental conditions, periodic inspections may need to be done sooner.

1. Unit is more than 1 year old after purchasing
2. Unit over 1 year after previous periodic inspection
3. Unit operation hour is over 100 hours since last periodic inspection
4. When BISOMAC used in a bad work environment, such as dirt, dust, etc.

NOTE: Follow the Traction Hoist Maintenance Manual concerning periodic inspections.

![WARNING]

**Only trained and certified personnel may do repairs BISOMAC components.** Otherwise, the BISOMAC may malfunction or not perform normally. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

![WARNING]

**DO NOT replace any BISOMAC parts with ones that are not approved.** Such replacement may cause the BISOMAC to malfunction or not perform adequately. This may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.
9. TROUBLESHOOTING AT JOB SITE

PROBLEM FROM MISHANDLING

The following information is intended to help identify faults that can occur and recommended corrections.

⚠️ WARNING

If the problems (Case 1 – Case 8) cannot be solved by performing the corrective measures below, replace the hoist or contact local authorized BISOMAC distributor. All repairs and solution of these problems must be performed by trained and certified service personnel, otherwise, this may cause the platform to fall or tilt, and consequently operators or objects might fall, resulting in serious injury, death or damage to operators or passers-by.

### CASE 1

*Press “UP” or “Down” Buttons but BISOMAC will not Operate.*

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Main power is not connected.</td>
<td>Confirm the main power and the AC Power Plug connections are proper.</td>
</tr>
<tr>
<td>2 Emergency Stop Button is pushed.</td>
<td>Check the Power Indication lamp (RED) and reset the Emergency Stop Button.</td>
</tr>
<tr>
<td>3 Overload protection feature is activated due to overload.</td>
<td>Unload the weight in platform.</td>
</tr>
<tr>
<td>4 Reversed-Phase Detection Indicator is lit. Only for 3Phase model.</td>
<td>Check the phase of power supply and reconnect.</td>
</tr>
</tbody>
</table>

### CASE 2

*Press “UP” Button, but BISOMAC will not Ascent. Or chattering.*

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Voltage is too low.</td>
<td>Supply power within allowable power of BISOMAC, see Section 2.1.</td>
</tr>
<tr>
<td>4 Power Cable is too long or size is too small.</td>
<td>Shorten power cable or use larger size.</td>
</tr>
</tbody>
</table>
### CASE 3

*Motor runs but Hoist will not self-reeve*

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Inadequate bullet on the wire rope.</td>
<td>Make sure the proper wire rope is used, see Section 7.2.2.</td>
</tr>
<tr>
<td>2 Wire rope is worn or damaged.</td>
<td>Stop operation of the BISOMAC immediately and replace wire rope.</td>
</tr>
<tr>
<td>3 The exit of wire rope is blocked.</td>
<td>Remove obstruction which caused blockage.</td>
</tr>
</tbody>
</table>

### CASE 4

*Hoist self-reeves, but will not lift platform*

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Inadequate wire rope is used.</td>
<td>Make sure the proper wire rope is used, see Section 2.4.</td>
</tr>
<tr>
<td>2 Wire rope is worn or damaged.</td>
<td>Replace wire rope.</td>
</tr>
</tbody>
</table>

### CASE 5

*BISOMAC ascending speed is too low.*

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Power voltage is too low.</td>
<td>Check that voltage and replace it with correct power cable, see Section 2.1. Supply proper voltage, see Section 2.1.</td>
</tr>
<tr>
<td>2 Wire rope is worn or damaged.</td>
<td>Replace wire rope.</td>
</tr>
</tbody>
</table>
### CASE 6

**BISOMAC or safety devices makes unusual noise**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Insufficient oil charge to the gear box.</td>
<td>Replace it with a properly functioning BISOMAC.</td>
</tr>
<tr>
<td>2 Gear box is broken.</td>
<td></td>
</tr>
<tr>
<td>3 There will be problems in the each device inside.</td>
<td></td>
</tr>
<tr>
<td>4 Foreign materials became deposited in the each device inside.</td>
<td></td>
</tr>
<tr>
<td>5 Each device’s bolts and nuts are loosened.</td>
<td>Check them and tighten properly.</td>
</tr>
<tr>
<td>6 Wire rope is not appropriate for BISOMAC.</td>
<td>Check manufacturer specified wire rope is used, see Section 2.4.</td>
</tr>
</tbody>
</table>

### CASE 7

**BISOMAC is too hot**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Voltage of input power is too high</td>
<td>The supply voltage should not exceed +10 %, see Section 2.1.</td>
</tr>
<tr>
<td>2 Air supply to Motor is in bad condition.</td>
<td>Improve air ventilation on fan cover of BISOMAC.</td>
</tr>
<tr>
<td>3 Frequency use of BISOMAC.</td>
<td>Strict observance of BISOMAC operation hours, see Section 6.</td>
</tr>
<tr>
<td>4 Beyond BISOMAC lifting capacity.</td>
<td>Check the weight of platform and the load on it is right. If any problems found, adjust it to proper load.</td>
</tr>
</tbody>
</table>
### CASE 8

*Press “Down” Button, but*  
**BISOMAC will not descend.**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Connector of BISOLOCK is unplugged.</td>
<td>Connect Connector of BISOLOCK properly.</td>
</tr>
<tr>
<td>2 BISOLOCK may be activated.</td>
<td>Reset BISOLOCK.</td>
</tr>
<tr>
<td></td>
<td>HOW TO RESET</td>
</tr>
<tr>
<td></td>
<td>A) Lift the hoist by about 4 in. (10 cm).</td>
</tr>
<tr>
<td></td>
<td>B) Lower the Reset Lever of BISOLOCK.</td>
</tr>
<tr>
<td></td>
<td>NOTE:</td>
</tr>
<tr>
<td></td>
<td>DO NOT reset forcefully. When the pin inside the lever of BISOLOCK is</td>
</tr>
<tr>
<td></td>
<td>damaged, you may not be able to reset BISOLOCK.</td>
</tr>
</tbody>
</table>
CODE OF SAFE PRACTICES
FOR
ADJUSTABLE SUSPENDED SCAFFOLDS
CO-DEVELOPED BY SCAFFOLDING, SHORING and FORMING INSTITUTE (SSFI)
and SCAFFOLD & ACCESS INDUSTRY ASSOCIATION, INC. (SAIA)

It shall be the responsibility of all users to read and comply with the following common sense guidelines which are designed to promote safety in the erecting, dismantling and use of adjustable suspended scaffolds. These guidelines do not purport to be all-inclusive nor to supplant or replace other additional safety and precautionary measures. If these guidelines conflict with any local, provincial, state, federal or other government regulations, the regulations shall supersede these guidelines and it shall be the responsibility of each user to comply therewith.

I. GENERAL GUIDELINES
A. POST THESE SAFE PRACTICES in a conspicuous place. Be sure that all persons who erect, use, relocate or dismantle adjustable suspended scaffold systems are fully aware of them. Use them in tool box safety meetings.
B. FOLLOW ALL EQUIPMENT MANUFACTURER’S RECOMMENDATIONS as well as all local, provincial, state and federal codes, ordinances and regulations relating to adjustable suspended scaffold systems.
C. SURVEY THE JOB SITE. A competent person shall survey the job site for hazards such as exposed electrical wires, obstructions and unguarded roof edges or openings.
D. INSPECT ALL EQUIPMENT BEFORE EACH USE. Never use any equipment that is damaged or defective in any way. Mark it or tag it as damaged or defective and remove it from the jobsite.
E. ERECT AND DISMANTLE ADJUSTABLE SUSPENDED SCAFFOLD EQUIPMENT in accordance with the design and/or manufacturer’s recommendations.
F. DO NOT ERECT, DISMANTLE OR ALTER ADJUSTABLE SUSPENDED SCAFFOLD SYSTEMS except under the supervision of a competent person.
G. DO NOT ABUSE OR MISUSE ADJUSTABLE SUSPENDED SCAFFOLD EQUIPMENT. Never overload any equipment.
H. ERECTED ADJUSTABLE SUSPENDED SCAFFOLDS ARE TO BE INSPECTED REGULARLY by the user to be sure that they are maintained in a safe condition. Stop work and report any unsafe condition to your supervisor.
I. NEVER TAKE CHANCES! IF IN DOUBT REGARDING THE SAFETY OR USE OF ADJUSTABLE SUSPENDED SCAFFOLDS, CONSULT A QUALIFIED PERSON.
J. NEVER USE ADJUSTABLE SUSPENDED SCAFFOLD EQUIPMENT FOR PURPOSES FOR WHICH IT WAS NOT INTENDED.
K. A COMPETENT PERSON SHALL CONSIDER STOPPING WORK WHEN WIND SPEED EXCEEDS 25 MPH FOR TWO-POINT ADJUSTABLE SUSPENDED SCAFFOLDS OR 20 MPH FOR SINGLE-POINT SUSPENSION. If materials on a platform create a sail effect, stopping work at lower wind speeds must be considered.
L. **ADJUSTABLE SUSPENDED SCAFFOLD SYSTEMS** are to be installed and used in accordance with the manufacturer’s recommended procedures.

M. **ADJUSTABLE SUSPENDED PLATFORMS MUST NEVER BE OPERATED NEAR LIVE POWER LINES** unless proper precautions are taken. Contact the power service provider for advice.

N. **ALWAYS UTILIZE FALL ARREST EQUIPMENT** when working on adjustable suspended scaffolds or when working near unguarded edges.

O. **DO NOT WORK FROM, INSTALL OR MOVE ADJUSTABLE SUSPENDED SCAFFOLDS** if you are sick or impaired in any way.

P. **DO NOT WORK ON ADJUSTABLE SUSPENDED SCAFFOLDS** when under the influence of alcohol or drugs.

Q. **DEBRIS SHOULD NOT BE STORED OR ALLOWED TO ACCUMULATE ON A PLATFORM.**

R. **INDEPENDENT ADJUSTABLE SUSPENDED SCAFFOLDS ARE TO BE POSITIONED SO AS TO AVOID OVERLAPPING OR POSSIBLE INTERFERENCE FROM ANOTHER SCAFFOLD.**

II. **GUIDELINES FOR ERECTION AND USE OF ADJUSTABLE SUSPENDED SCAFFOLD SYSTEMS**

A. **RIGGING:**
   1. **UTILIZE FALL PROTECTION EQUIPMENT** when rigging near unguarded edges.
   2. **SUPPORTING DEVICES** must be capable of supporting the hoist rated load with a safety factor of four.
   3. **ALL OVERHEAD RIGGING** must be secured from unwanted movement in any direction.
   4. **COUNTERWEIGHTS USED WITH OUTRIGGER BEAMS** must be of a non-flowable material and must be secured to the beam to prevent accidental displacement.
   5. **OUTRIGGER BEAMS THAT DO NOT USE COUNTERWEIGHTS** must be installed and secured to the roof structure with bolts or other direct connections. Direct connections shall be evaluated by a competent person.
   6. **TIE BACK ALL TRANSPORTABLE RIGGING DEVICES.** Tieback shall be equivalent in strength to the suspension ropes.
   7. **INSTALL TIEBACKS AT RIGHT ANGLES TO THE FACE OF THE BUILDING** and secure them without slack, to a suitable anchor capable of supporting the hoist rated load with a safety factor of four.
   8. **IN THE EVENT THAT TIEBACKS CANNOT BE INSTALLED AT RIGHT ANGLES,** two tiebacks at opposing angles must be used to prevent movement.
   9. **RIG AND USE HOISTING MACHINES DIRECTLY UNDER THEIR SUSPENSION POINTS** to prevent movement or side loading.

B. **WIRE ROPE AND HARDWARE:**
   1. **USE ONLY WIRE ROPE AND ATTACHMENTS** specified by the hoisting machine manufacturer.
   2. **HANDLE WIRE ROPE WITH CARE.** Always use gloves.
   3. **COIL AND UNCOIL WIRE ROPE** in accordance with manufacturer’s instructions in order to avoid kinking or damage.
4. **ASSURE THAT THE WIRE ROPE IS LONG ENOUGH** to reach to the lowest possible landing.
5. **CLEAN AND LUBRICATE WIRE ROPE** in accordance with the wire rope manufacturer’s instructions.
6. **INSPECT WIRE ROPE IN ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS. DO NOT USE WIRE ROPE THAT IS KINKED, BIRDCAGED, CORRODED, UNDERSIZED, OR DAMAGED IN ANY WAY.** Do not expose wire rope to fire, undue heat, corrosive atmosphere, electricity, chemicals or damage.
7. **WIRE ROPE SUSED WITH TRACTION HOISTS MUST HAVE PREPARED ENDS.** Follow hoist manufacturer’s recommendations.
8. **USE THIMBLES AT ALL WIRE ROPE SUSPENSION TERMINATIONS.**
9. **USE J-BOLT WIRE ROPE CLAMPS OR SWEDGE FITTINGS. DO NOT USE U-BOLT CLAMPS.**
10. **TIGHTEN THE J-BOLT WIRE ROPE CLAMPS** in accordance with the manufacturer’s instructions.

**C. POWER SUPPLY FOR MOTORIZED EQUIPMENT:**
1. **USE PROPERLY GROUNDED ELECTRICAL POWER CORDS.** Protect them with circuit breakers.
2. **USE POWER CORDS AND AIR HOSES OF THE PROPER SIZE THAT ARE LONG ENOUGH** for the application.
3. **POWER CORD and AIR HOSE CONNECTIONS MUST BE RESTRAINED** to prevent separation.
4. **USE STRAIN RELIEF DEVICES TO ATTACH POWER CORDS AND AIR SUPPLY HOSES TO THE PLATFORM,** to prevent them from separation.
5. **PROTECT POWER CORDS AND AIR HOSES FROM SHARP EDGES.**
6. **USE GROUND FAULT CIRCUIT INTERRUPTER (GFCI) WITH POWER TOOLS.**

**D. FALL ARREST EQUIPMENT:**
1. **EACH PERSON ON AN ADJUSTABLE SUSPENDED SCAFFOLD** must be attached to an independent fall arrest system.
2. **EACH VERTICAL LIFELINE SHALL BE ATTACHED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS** to a separate anchorage capable of supporting a minimum of 5000 pounds (2267 kg) or an anchorage designed by a qualified person.
3. **DO NOT WRAP LIFELINES AROUND STRUCTURAL MEMBERS** unless lifelines are protected and a suitable anchorage connection is used.
4. **PROTECT LIFELINES AT SHARP CORNERS AND EDGES** to prevent chafing.
5. **RIG FALL ARREST SYSTEMS** to minimize free fall.
6. **INSTALL VERTICAL LIFELINES SO THEY HANG FREELY.**
7. **USE LIFELINES** that are compatible with the rope grab.
8. **INSTALL ROPE GRAB IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.** Rope grab must be properly oriented.
9. **KEEP ROPE GRAB POSITIONED ABOVE YOUR HEAD.**
10. **UTILIZE FULL BODY HARNESS** of the proper size and fit.
11. **UTILIZE SHOCK ABSORBING LANYARD** attached to the D-ring at the center of your back between the shoulder blades.
12. **INSPECT FALL PROTECTION ANCHORAGE / EQUIPMENT BEFORE EACH USE.** Consult the fall protection supplier for inspection procedures.

13. **WHEN A SECONDARY WIRE ROPE SYSTEM IS USED** instead of a vertical lifeline, attach the lanyard to a horizontal lifeline or an approved platform anchor.

E. **DURING USE:**
   1. **USE ALL EQUIPMENT AND ALL DEVICES** in accordance with the manufacturer’s instructions.
   2. **DO NOT OVERLOAD OR MODIFY EQUIPMENT.**
   3. **INSPECT ALL EQUIPMENT INCLUDING HOISTS, PLATFORM, AND RIGGING** before each use.
   4. **INSPECT WIRE ROPE BEFORE AND DURING USE.**
   5. **USE CARE TO PREVENT DAMAGE TO EQUIPMENT.**
   6. **CLEAN AND SERVICE EQUIPMENT REGULARLY.** Follow manufacturers’ recommendations.
   7. **ALWAYS MAINTAIN AT LEAST (4) FOUR WRAPS OF WIRE ROPE ON DRUM TYPE HOISTS.**
   8. **DO NOT CONNECT PLATFORMS** unless the installation was designed for that purpose.
   9. **DO NOT MOVE ADJUSTABLE SUSPENDED SCAFFOLDS HORIZONTALLY** unless safe work practices are followed.
   10. **WHEN RIGGING FOR ANOTHER DROP** assure sufficient wire rope is available before moving the suspended platform horizontally to the next location.

F. **WELDING FROM SUSPENDED SCAFFOLDS REQUIRES SPECIAL TRAINING:**
   1. **ASSURE PLATFORM IS GROUNDED TO THE STRUCTURE** using a grounding conductor.
   2. **INSULATE WIRE ROPE ABOVE AND BELOW THE PLATFORM.**
   3. **INSULATE WIRE ROPE AT SUSPENSION POINT AND ASSURE WIRE ROPE DOES NOT CONTACT THE STRUCTURE ALONG ITS ENTIRE LENGTH.**
   4. **PREVENT THE WIRE ROPE END FROM BECOMING GROUNDED.**
   5. **INSULATE EACH HOIST WITH A PROTECTIVE COVER.**
   6. **INSULATE TIE BACK WIRE ROPES AT THE CONNECTION POINTS.**

Since field conditions vary and are beyond the control of the SSFI and the SAIA, safe and proper use of adjustable suspended scaffolding is the sole responsibility of the user.
## Revision History

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Revised Section</th>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>July. 2010</td>
<td>1st revision</td>
<td>Drawing</td>
<td>Electric Circuit revised / Brake Label revised</td>
</tr>
<tr>
<td>Nov. 2011</td>
<td>2nd revision</td>
<td>Drawing</td>
<td>Electric Circuit revised</td>
</tr>
<tr>
<td>Mar. 2013</td>
<td>3rd revision</td>
<td>Labels</td>
<td>Add QR code and Gear Label</td>
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<td>Dec. 2013</td>
<td>4th revision</td>
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<td>June. 2014</td>
<td>5th revision</td>
<td>1.3</td>
<td>Power Voltage Label revised</td>
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<td>Add Plug mark and Plug Connection Label</td>
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<td>5</td>
<td>Add 3 items on Warning Installation</td>
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<td>7.3</td>
<td>Add “Testing procedure when remote control pendant switch is connected”</td>
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<td>2. Minor change on some Warning, Caution and Note.</td>
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<td>Feb 2018</td>
<td>7th revision</td>
<td>/</td>
<td>1. Integrate all BISOMAC210 1Phase model into one manual.</td>
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<td>July 2018</td>
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<td>2.1</td>
<td>1. Add note about noise.</td>
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<td>Feb 2019</td>
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<td>1. Add precautions prior to use.</td>
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<td>2. Add minimum load capacity on the specification.</td>
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