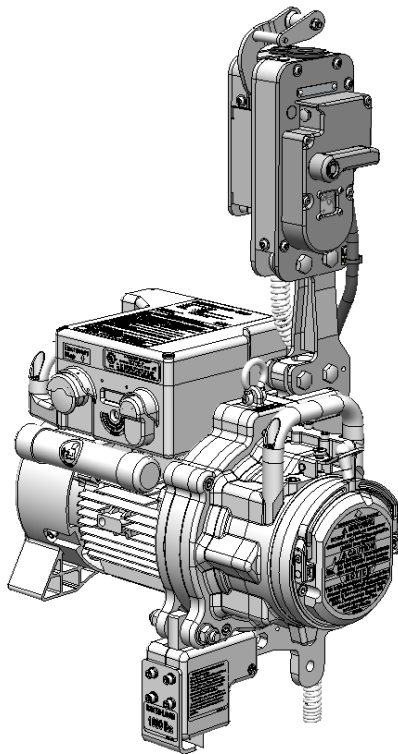

Dual Safety Device (BISOLOCK-DL)

5/16 inch (8mm)

Operator's Manual



WARNING

Read manual before operating this Hoist. Failure to follow the safety precautions and instructions in this manual could result in serious injury, death or damage to the Hoist.

NIHON BISOH CO., LTD.

 **WARNING**

- All operators must read and understand this manual before operating this equipment. Failure to follow the safety precaution and instruction in this manual could result in serious injury, death or property damage.
- 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 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.
- The safety matter concerning the design and the handling of the entire system is according to the standard provided in American National Standard ANSI.

MANUFACTURER: NIHON BISOH CO., LTD.

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0. READ BEFORE USING FALL ARREST DEVICE (DUAL SAFETY DEVICE)

This Operator's Manual had been prepared for the safe and proper operation of the **Fall Arrest Device** (referred to as "**Dual Safety Device**"). To understand the usage of the Dual Safety Device, please refer to the following explanation and system compositions. Follow the Electric Traction Hoist Operator's manual of another sheet about the BISOMAC210 traction hoist operation. It is operator's responsibility to be sure that this Device is used safely and properly.

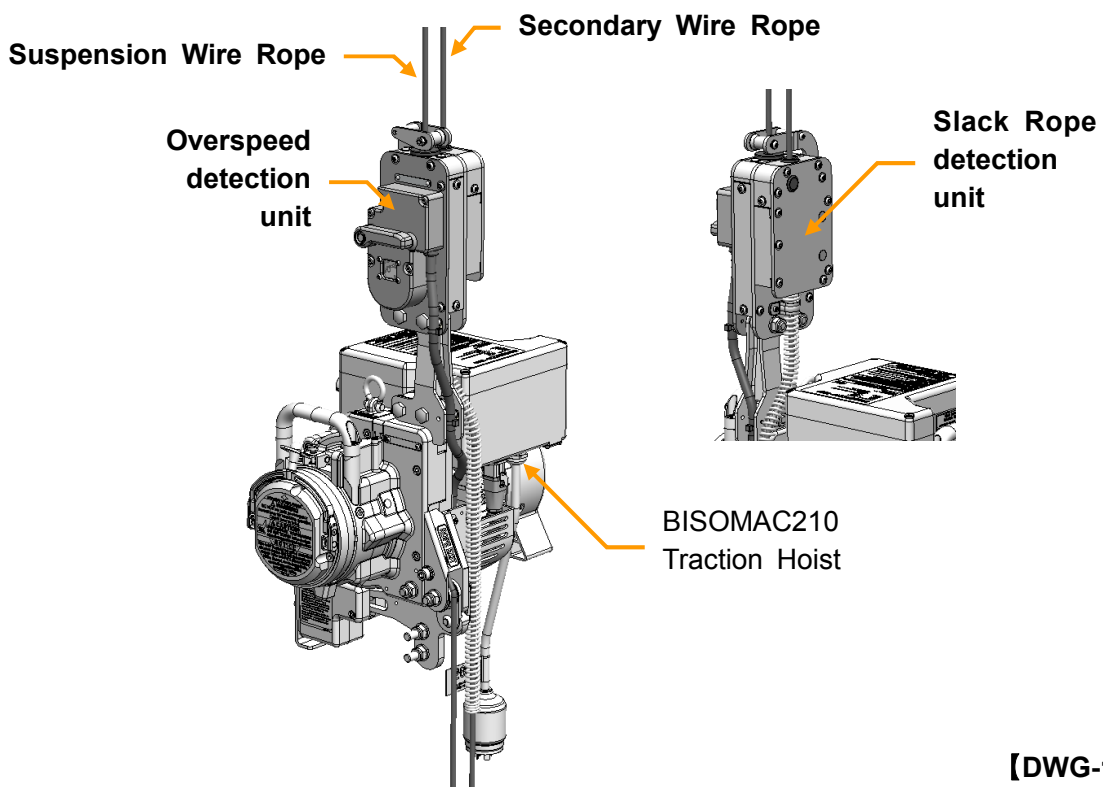
1) Dual Safety Device

The Dual Safety Device is a product that integrated Overspeed detection unit and Slack Rope detection unit.

1. The Overspeed detection unit is designed to engage suspension wire rope when platform descends abnormal speed. Once Overspeed detection unit activates, the platform would not descend due to electrical interlock.
2. The Slack Rope detection unit is designed to engage secondary wire rope when this unit detects suspension wire rope's slack. This unit also designed to engage secondary wire rope when traction hoist would not able to hold suspension load.

Please see the composition of the entire system that shows in the following to understand the use of the Dual Safety Device.

[BISOMAC210 Traction Hoist with Safety Devices]



[DWG-1]

2) Precautions prior to use

- a) Before using the equipment, operators must carry out the Daily Tests and Inspections and make sure that the equipment is in normal working condition.

3) Precautions during use

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

NOTE: Refer “BISOMAC210 Traction Hoist Operator’s manual” about cautions and notes that have not been described to this manual.

1. FOR SAFE USE

1.1 General

This Operator's Manual is applicable to the Dual Safety Device (BISOLOCK-DL) manufactured by Nihon Bisoh Co., Ltd. This Operator's Manual (referred to as "Manual") had been prepared for safe and proper operation of the Dual Safety Device.

1. Read and understand this manual fully before using the Dual Safety Device.
2. This Dual Safety Device is designed to prevent platform's fall.
3. Only trained and authorized operator must handle, maintain, inspect and repair of the Dual Safety Device.
4. Daily Tests and Inspections described in this manual (refer to section 8) must be performed at the start of each work shift.
5. Use Section 10 troubleshooting guide in this manual to solve problems that may develop with the Dual Safety Device. Understand the problem before attempting to solve it.

It is very important that anyone using the Dual Safety Device determine for themselves whether the Dual Safety Device is safe. You must be familiar with the operating characteristics of the Dual Safety Device. You must understand how the Dual Safety Device will interact with other equipments 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 Dual Safety Device.



WARNING



DO NOT reset the Dual Safety Device when platform suddenly falls and the Dual Safety Device activates. DO NOT use the Dual Safety Device until the reason for activation has been identified and corrected by trained and authorized personnel. Contact the local authorized 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.

1.2 Maintenance

Handling, maintenance, inspections and repairs of the following products must be performed by trained and authorized personnel only.

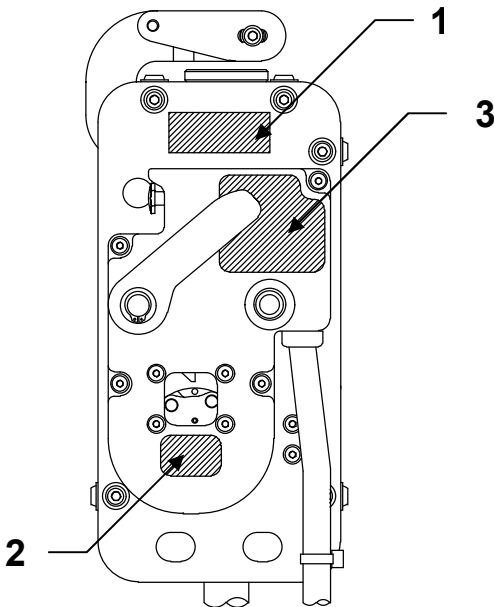



1.3 Categories of Safety Instructions

In this operator's manual, the safety instructions are classified according to risk levels.

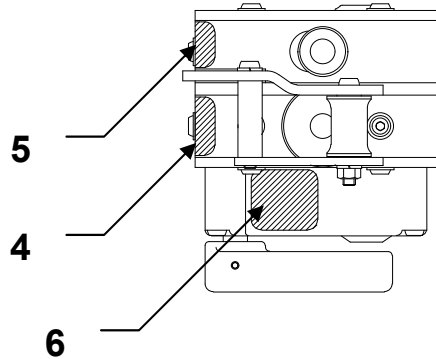
Simple	Code word	Meaning
	WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to show potential damage to property.
	NOTE	Indicates a potentially hazardous situation which, if not avoided, could result in damage of the Dual Safety Device.




1.4 Warning Labels

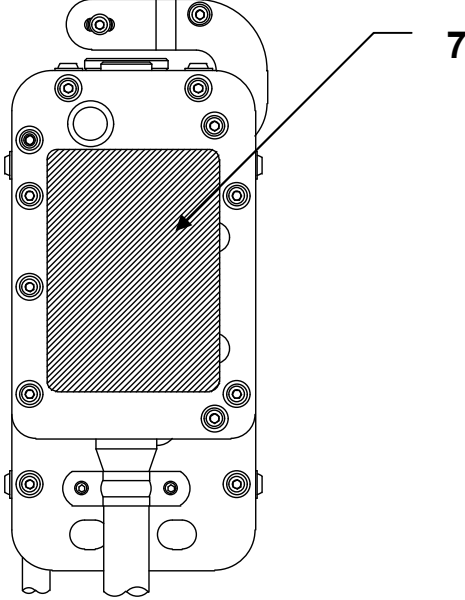
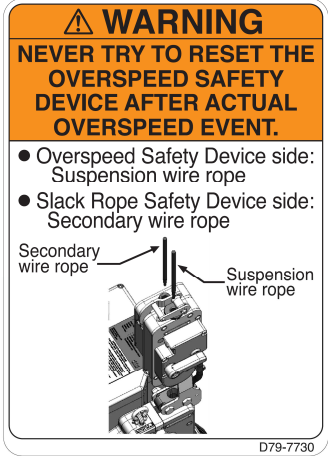
The operator must check that the following labels are attached properly and legible.

[Right Side]		
		
Description	Message / <Location>	Label
1. Instruction of inability of lifting	- Instruction to inability of lifting <Side Plate 1>	
2. Governor Inspection Window	- Instruction of Governor Rotation <Governor Cover>	
3. Overspeed Indicator & Reset	- Instruction of Overspeed detection Unit - Reset Lever Direction <Governor Cover>	

[TOP SIDE]



Description	Message / <Location>	Label
4. Suspension Wire Rope Diameter	- Instruction of Wire Rope Diameter <Side Cover 1>	
5. Secondary Wire Rope Diameter	- Instruction of Wire Rope Diameter <Side Cover 3>	
6. Instruction of Manual Trip Button	- Instruction of Manual Trip Button <Governor Cover>	

<p>【LEFT SIDE】</p> 		
Description	Message / <Location>	Label
<p>7. Fall Arrest</p>	<p>- Instruction of Slack Rope unit <Side Cover 3></p>	

2. SPECIFICATIONS

2.1 Dual Safety Device (BISOLOCK-DL)

Wire Rope Diameter	5/16 in. (8mm) – refer 2.2 for wire rope construction	
Rated Load	1000 lbs (450 kg)	
Dimension	11.7in.(299mm) 【high】 x4.7in.(120mm) 【width】 x5.6in.(143mm) 【length】	
Self Weight	18.7 lbs (8.5kg)	
Overspeed detection Unit	Activation Speed	98.4 ft/min (30 m/min)
	Control Feature	NO descending while this device is activated.
	Use Voltage	208 V
Usable conditions	Temperature range	14° F (-10° C) and 104° F (+40° C)
	Humidity	less than 75 %
	Contaminants	Degree of protection IP54
	Pressure	Atmospheric pressure
Special mention		

2.2 WIRE ROPE (Nihon Bisoh specifies wire rope)

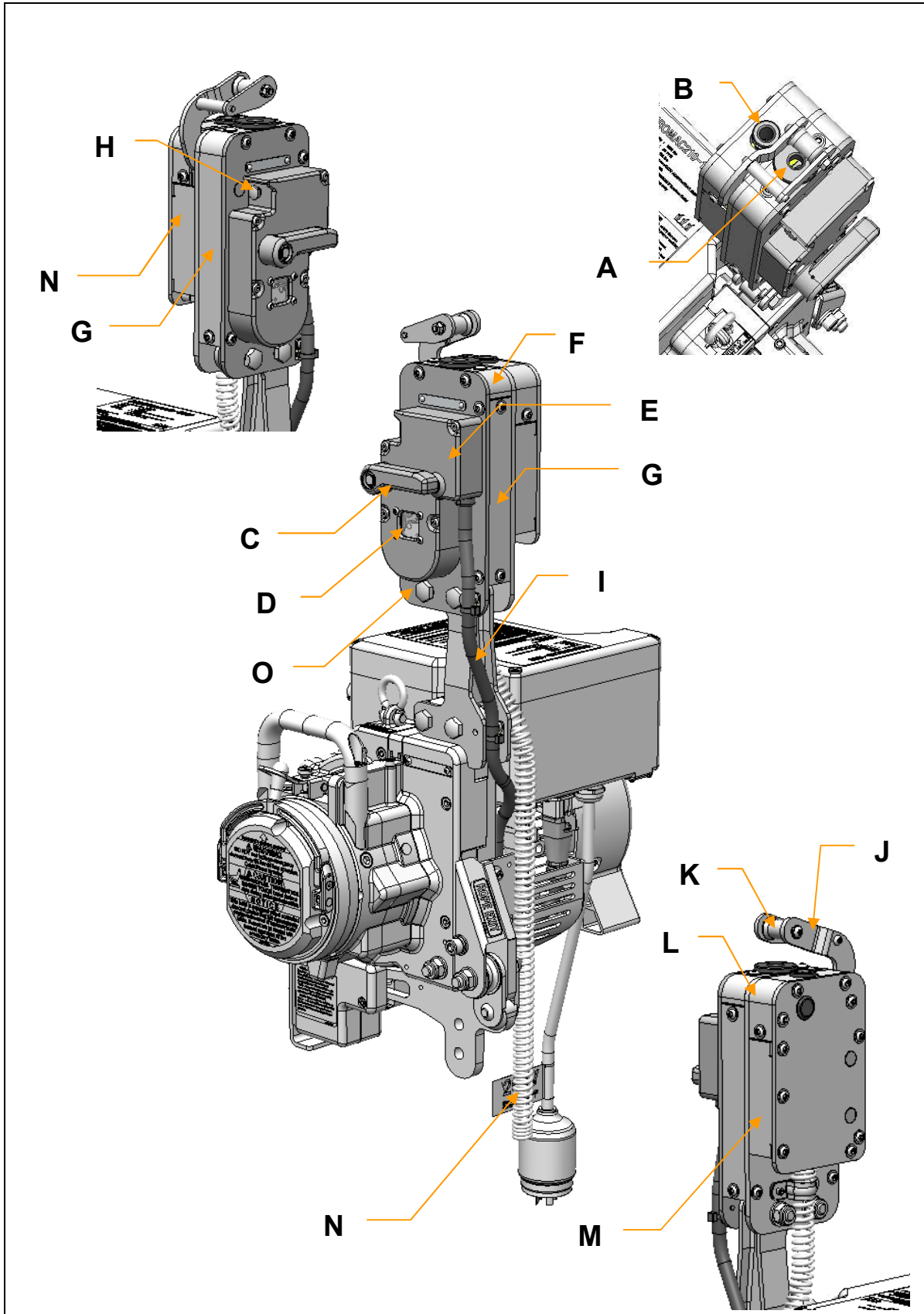
	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5
Construction	5x26	4x39	4x40	6x19IWRC	4x26
Diameter	8.4 mm (5/16 in.)	8.0 mm (5/16 in.)	8.0 mm (5/16 in.)	8.2 mm (5/16 in.)	8.3 mm (5/16 in.)
Min. Breaking Load (actual)	51.5 kN (5,253 kg)	39.2 kN (3,998 kg)	43.0 kN (4,386 kg)	40.5 kN (4,131 kg)	45.0 kN (4,590 kg)
Treatment	Galvanized	Galvanized	Galvanized	Galvanized	Galvanized
Caution	Use only wire rope that Nihon Bisoh specifies.				

**WARNING**

BISOMAC210 operation requires the use of wire rope recommended by Nihon Bisoh. Using any other wire rope could cause the platform to fall or tilt, possibly resulting in falls and serious injury or death.

Note: Refer to "BISOMAC210 Electric Traction Hoist Operator's Manual" for "Test procedure for Wire Rope".

3. FUNCTION AND DESCRIPTION OF EACH COMPONENT



	FUNCTION	DESCRIPTION
A	Guide Inlet for suspension wire rope	For inserting suspension wire rope.
B	Guide Inlet for secondary wire rope	For inserting secondary wire rope.
C	Reset Lever	Use for resetting the Overspeed detection unit from suspension wire rope. Special Note: When huge power applies to Device such as shock load, attempt to reset forcibly, the Safety Pin in the Lever will damage and will not allow resetting the Lever.
D	Governor Inspection Window	Confirm Rotating of Governor
E	Overspeed Indicator	In case of activation of the Overspeed detection unit, the Indicator is lit when pressing "Down" Button.
F	Upper Cover of Overspeed	The inside can be cleaned without taking the unit apart by removing the cover.
G	Side Cover of Overspeed	The inside can be cleaned without taking the unit apart by removing the cover.
H	Manual Trip Button	This Trip Button is for manual activation of the Overspeed detection unit.
I	Overspeed Inter-lock cable	In case of activation of the Overspeed detection unit, the platform stops descending.
J	Slack Detection Lever	Lever that detects suspension wire rope's slack.
K	Slack Detection Roller	Roller that guides suspension wire rope
L	Upper Cover of Slack Rope	- Remove the cover when adjusting activation angle of Slack Rope detection unit. - The inside can be cleaned without taking the unit apart by removing the cover.
M	Side Cover of Slack Rope	The inside can be cleaned without taking the unit apart by removing the cover.
N	Exit Tube	Tube that guides for rope end side of secondary wire rope.
O	Special Bolt of Dual Safety Device	Use to attach Dual Safety Device to BISOMAC210

4. WORK ENVIRONMENT

Many work environments contain contaminants that could adversely affect the performance of the Dual Safety Device. Perform the daily tests described in Section 8 to ensure that the Dual Safety Device is operating properly.

The protective cover may obstruct some or all of the safety warnings and instruction labels on the Dual Safety Device. Before operating the Dual Safety Device equipped with the protective cover, the operator must remove the protective cover and read and understand all of the labels on the Dual Safety Device.

WARNING

1. ALWAYS test and inspect (Section 8) the Dual Safety Device 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 device. Improper maintenance may result in the platform falling and tilting, allowing persons or things to fall and possibly resulting in serious injury, death or damage.
2. NEVER use the Dual Safety Device 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.

Note: Use the protection cover of the Dual Safety Device, when dyed goods such as paints, epoxy resin, cements, and solvents is put on the working environment that uses Dual Safety Device or sand blasting finish etc. are used, otherwise the Dual Safety Device may malfunction.

Note: Take measurement when Dual Safety Device is exposed to work environment such as paint, freezing temperatures or where water or moisture can enter; to keep the Dual Safety Device from the freezing, otherwise the Dual Safety Device may malfunction.

5. SET UP INSTRUCTIONS

This section describes procedure of the Dual Safety Device for safety operation. Before attempting set up, read and understand Steps 1 - 2 of this section which describes the installation procedures of the Dual Safety Device.

(Warning: Installation)

WARNING

1. DO NOT reset the Dual Safety Device when platform suddenly falls and the Dual Safety Device activates. DO NOT use the Dual Safety Device until the reason for activation has been identified and corrected by trained and authorized personnel. 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.
2. 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.
3. When attaching the Dual Safety Device and BISOMAC210 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: Suspension Wire Rope)

WARNING

1. The BISOMAC210 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.
2. 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.
 - Replace with new wire rope if the wire rope has a doubt.
 - Discard the wire rope that has been contacted to any of corrosive.
3. Operating the BISOMAC210 with a wire rope having a kink or deformation may interfere with the up and down movement of the BISOMAC210 and cause damage to the hoist and possibly sever the wire rope. 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.
4. When fixing the suspension wire rope and the secondary 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.

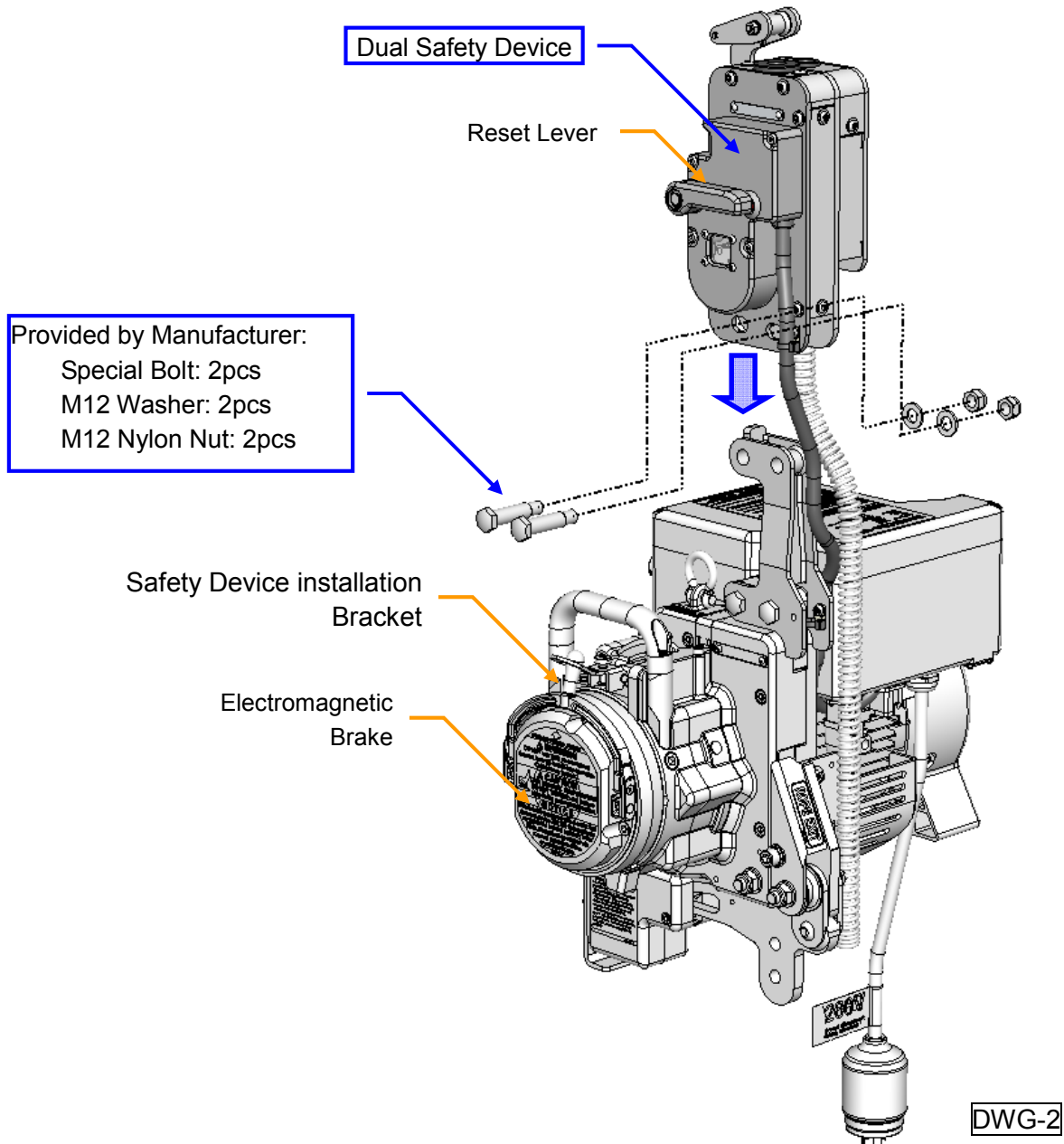
(Caution: Dual Safety Device Installation)

 **CAUTION**

1. DO NOT throw or drop the Dual Safety Device. The Dual Safety Device may become damaged and cannot be used and may result in serious injury or property damage.
2. 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.

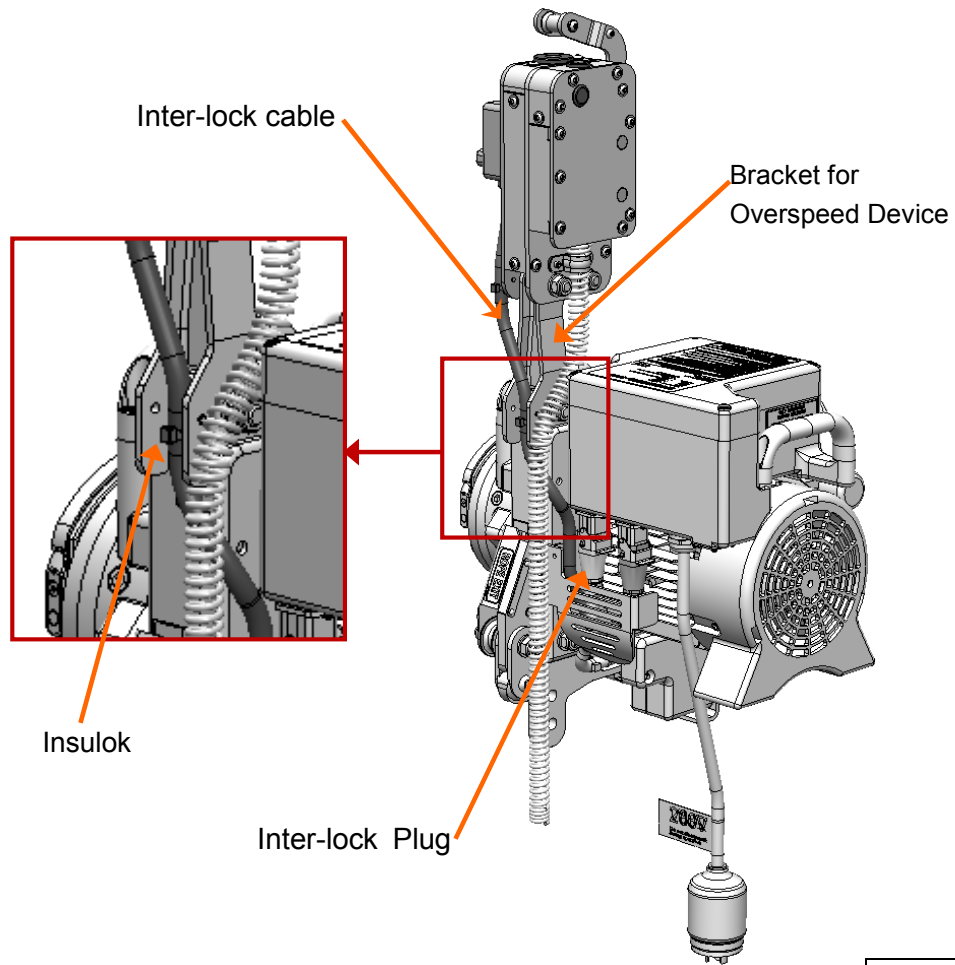
STEP1 Installation of Dual Safety Device to the Hoist

Install the Dual Safety Device to Hoist using the instructions below.



1. Attach the Dual Safety Device to the Safety Device Installation Bracket with tightening 2 Special Bolts, 2 Washers and 2 Nylon Nuts provided by manufacturer. Install it so that the Electromagnetic Brake and the Reset Lever will be on the same side. Use Torque Wrench to tighten the Bolts. Refer DWG-2.

Torque Standard: 76 N·m (770 kgf·cm)



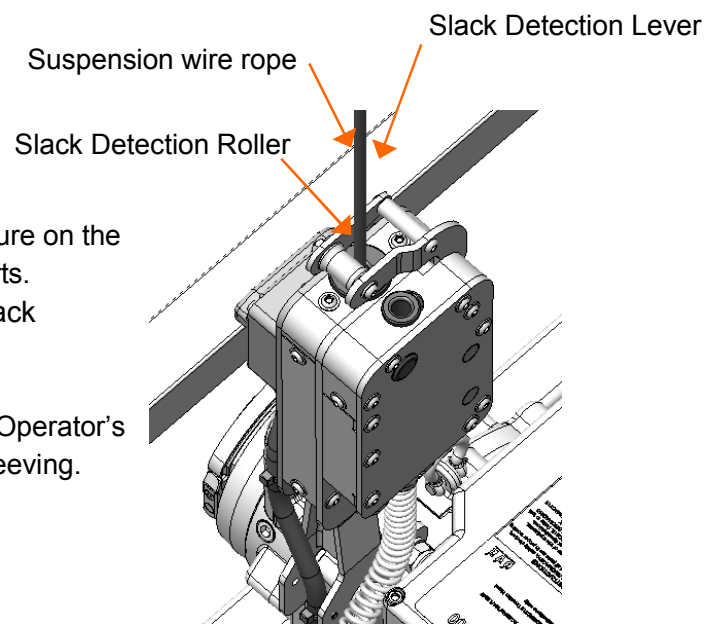
DWG-3

2. Connect the Plug of the Overspeed detection unit to the Hoist as shown in DWG-3.
3. Fix Inter-lock cable to Safety Device installation Bracket with Insulok as shown in DWG-3.

STEP2 Installation Wire Ropes

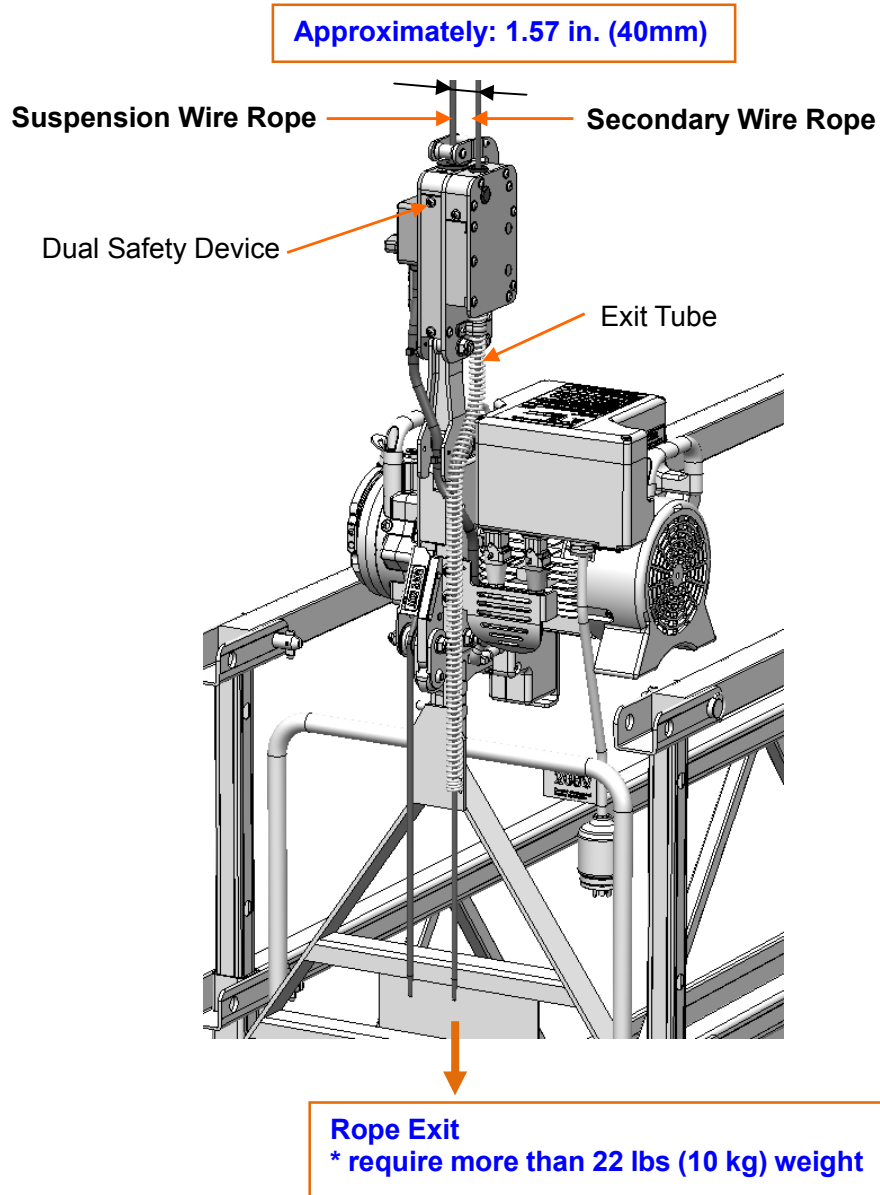
1. Insert the bullet end of the suspension wire rope into the Overspeed detection unit inlet while maintaining downward pressure on the Slack Detection Lever, until self-reeving starts. Insert the suspension wire rope inside of Slack Detection Roller as shown in DWG-4

Refer BISOMAC210 Electric Traction Hoist Operator's manual for Hoist installation and wire rope reeving.



-4)

2. Insert the bullet end of the secondary wire rope into the Slack detection unit inlet.
 - Maintain downward pressure on the Slack Detection Lever if the wire rope is difficult to insert.



(DWG-5)

3. Make sure the secondary wire moves smoothly without resistance in the exit tube.
4. Install counterweight more than 22lbs (10kg) to end of the secondary wire rope to protect lift up of the secondary wire rope.
5. Install the suspension wire rope and the secondary wire rope with the range of distance 1.57 in (40mm).

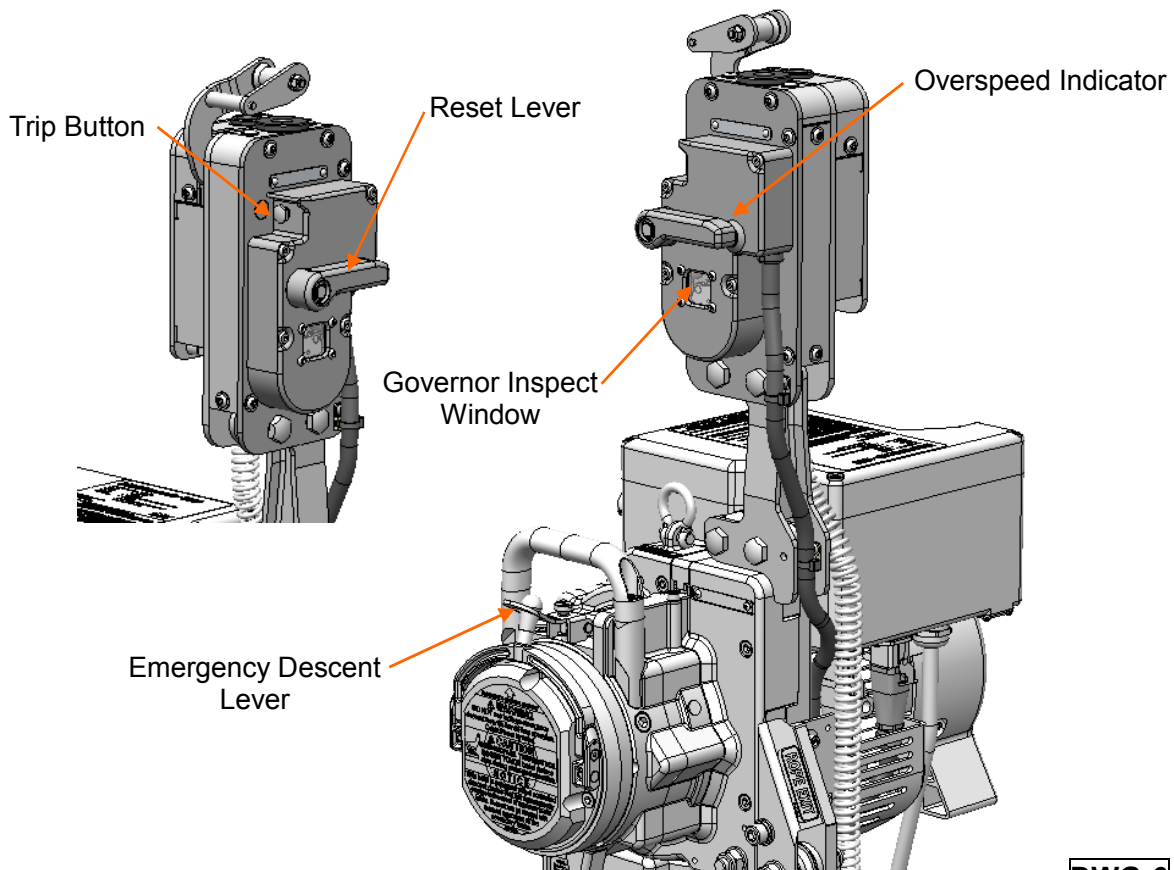
6. OPERATION / HANDLING METHODS

This section describes the following methods to safely handle and operate of the Dual Safety Device.



WARNING

DO NOT reset the Dual Safety Device when platform suddenly falls and the Dual Safety Device activates. DO NOT use the Dual Safety Device until the reason for activation has been identified and corrected by trained and authorized personnel. Contact the local authorized 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.



DWG-6

A. Overspeed detection unit - Operation / Handling Methods (refer DGW-6)

The Overspeed detection unit may be activated and engaged Suspension Wire Rope by the followings:

1. Abnormal platform descending speed
2. Shock loads or vibration to the unit
3. Activating Manual Trip Button
 - The Overspeed detection unit engages the suspension wire rope and the traction hoist stop descending operation.
 - The Overspeed Indicator is lit when pressing down button of the traction hoist.

<How to Reset the Overspeed detection unit>

Ascend the platform by BISOMAC210 while pushing down the Reset Lever of Overspeed detection unit (activated side) to reset.

NOTE: When huge power applies to the Reset Lever to reset, the Safety Pin in the Lever will damage and will not allow resetting the Lever.

B. Slack Rope detection unit - Operation / Handling Methods

The Slack Rope detection unit may be activated and engaged Secondary Wire Rope by the followings:

1. Suspension wire rope's slacking
2. Loss holding power of suspension wire rope
 - The Slack Rope detection unit is activated only platform descending operation.

<How to Reset the Slack Rope detection unit>

Ascend the platform by BISOMAC210 to reset Slack Rope detection unit (activated side).

- This device can be reset by raising the platform. It is not possible to reset it in the direction of the descent.

7. Pre-shipment OPERATION CONFIRMATION & TEST PROCEDURE

This section describes necessary operation confirmation & test procedure for safe operation of Dual Safety Device prior to shipment to job site.

- Read and understand this section describing the operation confirmation & test procedure of the Dual Safety Device before attempting use.
- Follow each devices maintenance manuals if the daily tests and inspections are not described in this manual.



WARNING

1. ALWAYS test and inspect the Dual Safety Device with platform prior to delivery at job site, otherwise the Dual Safety Device 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.
2. Only trained and certified personnel may adjust the Dual Safety Device.

A. Test procedures for Overspeed detection unit (refer **DWG-6**)

Perform the following procedure to confirm of the Overspeed detection unit is operating normally.

1. Insert about 12 in. (30 cm) of suspension wire rope into the Overspeed inlet.
2. Pull up the suspension wire rope quickly.
The Reset Lever turns anticlockwise itself and the Overspeed Indicator is visualized.
3. Make sure that the suspension wire rope is engaged.
4. Make sure the Overspeed Indicator is lit when pressing the "Down" Button.
5. Push down the Reset Lever to reset.
6. Make sure the Overspeed Indicator is not lit when pressing the "Down" Button.

Perform the following procedures to make sure the Overspeed detection unit holds loads normally.

1. Raise the platform about 20 in. (50 cm) off the ground.
2. Press the Manual Trip Button to activate the Overspeed detection unit. The Reset Lever turns anticlockwise itself and the Overspeed Indicator is visualized.
3. Release the Electromagnetic Brake by pulling the Emergency Descent Lever to lower the platform.
4. The Overspeed detection unit engages the wire rope and the platform stop descending.
5. Press "Down" Button to confirm the hoist will not operate.
6. Confirm that the Overspeed Indicator is lit when pressing "Down" Button.
7. Press down the Reset Lever while pressing "UP" Button to reset the Overspeed detection unit.
8. Push Operation Button to raise platform and confirm that the Governor is rotating.

- Perform same procedure to the other side's Overspeed detection unit.

B. Test procedures for Slack Rope detection unit

(Caution: Slack Rope detection unit Operation Check)



Ensure that there is no object under a platform. If the suspension wire rope is slacked because the platform runs onto objects, the platform might be unbalanced and worker is in danger of being hurt.

Perform the following procedure to confirm that the Slack Rope detention unit activates properly.

1. Descend platform on ground and press "Down" button to make suspension wire rope become slack.
2. The Slack detection lever of this unit inclines and engages the secondary wire rope.
3. Make sure that Slack Rope detection unit engages the secondary wire rope.
4. Raise the platform by BISOMAC210 to release engaged the secondary wire rope.

- Perform same procedure to the other side's Slack Rope detection unit.

8. DAILY TESTS AND INSPECTIONS

This section describes necessary daily test procedure for safe operation of Dual Safety Device in job site.

- Read and understand this section describing the inspection and installation procedures of the Dual Safety Device before attempting use.
- Follow each devices maintenance manuals if the daily tests and inspections are not described in this manual.

(Warning: Test Procedure and Inspection of Dual Safety Device)



WARNING

1. 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.
2. Perform the test and inspection of the Dual Safety Device according to this manual in safe height; otherwise 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.
3. ALWAYS test and inspect the Dual Safety Device on a daily basis, otherwise the Dual Safety Device 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.
4. ALWAYS test and inspect the Dual Safety Device on a daily basis especially in work environments that contain contaminants. Maintain the Dual Safety Device 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.
5. Do not neglect inspection and test before using the Dual Safety Device; otherwise the Dual Safety Device would not hold the platform when it is suspended in air. 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.
6. Perform the test and inspection of the Dual Safety Device with platform; otherwise abnormal safety function would not be 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.
7. NEVER perform any disassembly, maintenance, repair, or part replacement on the Dual Safety Device 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.
8. Only trained and certified personnel may replace the parts of the Dual Safety Device. Otherwise, the Dual Safety Device 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.
9. DO NOT replace any Dual Safety Device parts with ones that are not approved. Such replacement may cause the Dual Safety Device 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.

(Warning: Test Procedure of Dual Safety Device)

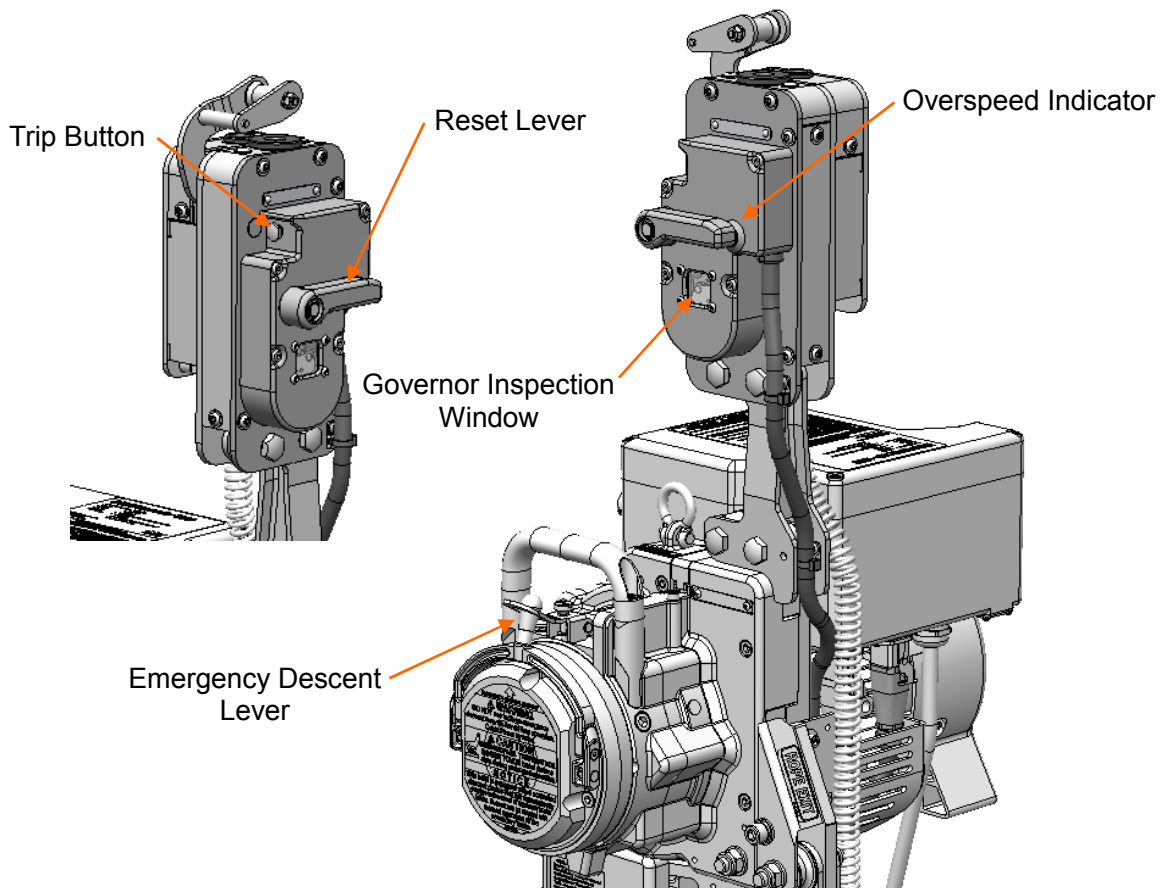
⚠ WARNING

DO NOT use the Dual Safety Device if the Dual Safety Device does not engage the wire rope. Replace it with a properly operating Dual Safety Device, 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.

(Caution: Slack Rope detection unit Operation Check)

⚠ CAUTION

Ensure that there is no object under a platform. If the suspension wire rope is slacked because the platform runs onto objects, the platform might be unbalanced and worker is in danger of being hurt.



DWG-8

A. Test procedures for Overspeed detection unit (refer **DWG-6**)

Perform the following procedure to confirm of the Overspeed detection unit is operating normally.

1. Insert about 12 in. (30 cm) of suspension wire rope into the Overspeed inlet.
2. Pull up the suspension wire rope quickly.
The Reset Lever turns anticlockwise itself and the Overspeed Indicator is visualized.
3. Make sure that the suspension wire rope is engaged.
4. Make sure the Overspeed Indicator is lit when pressing the "Down" Button.
5. Push down the Reset Lever to reset.
6. Make sure the Overspeed Indicator is not lit when pressing the "Down" Button.

Perform the following procedures to make sure the Overspeed detection unit holds loads normally.

1. Raise the platform about 20 in. (50 cm) off the ground.
2. Press the Manual Trip Button to activate the Overspeed detection unit.
The Reset Lever turns anticlockwise itself and the Overspeed Indicator is visualized.
3. Release the Electromagnetic Brake by pulling the Emergency Descent Lever to lower the platform.
4. The Overspeed detection unit engages the wire rope and the platform stop descending.
5. Press "Down" Button to confirm the hoist will not operate.
6. Confirm that the Overspeed Indicator is lit when pressing "Down" Button.
7. Press down the Reset Lever while pressing "UP" Button to reset the Overspeed detection unit.
8. Push Operation Button to raise platform and confirm that the Governor is rotating.

- Perform same procedure to the other side's Overspeed detection unit.

B. Test procedures for Slack Rope detection unit

(Caution: Slack Rope detection unit Operation Check)



Ensure that there is no object under a platform. If the suspension wire rope is slacked because the platform runs onto objects, the platform might be unbalanced and worker is in danger of being hurt.

Perform the following procedure to confirm that the Slack Rope detention unit activates properly.

1. Descend platform on ground and press "Down" button to make suspension wire rope become slack.

2. The Slack detection lever of this unit inclines and engages the secondary wire rope.
3. Make sure that Slack Rope detection unit engages the secondary wire rope.
4. Raise the platform by BISOMAC210 to release engaged the secondary wire rope.

- Perform same procedure to the other side's Slack Rope detection unit.

9. PERIODIC INSPECTIONS

The periodic inspections have to be performed by certified personnel.

The time periods of the periodic inspection should be determined depending on job and environmental conditions.

Follow maintenance manual (see Hoist Maintenance Manual) concerning periodic inspections.

WARNING

1. ALWAYS test and inspect the Dual Safety Device on a daily basis, otherwise the Dual Safety Device 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.
2. ALWAYS test and inspect the Dual Safety Device on a daily basis especially in work environments that contain contaminants. Maintain hoist (see maintenance manual) 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.
3. Only trained and certified personnel may replace the parts of the Dual Safety Device. Otherwise, the Dual Safety Device 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.
4. DO NOT replace any Dual Safety Device parts with ones that are not approved. Such replacement may cause the Dual Safety Device 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.

10. TROUBLESHOOTING AT JOB SITE

(Problem from Mishandling)

The following information is intended to help identify faults that can occur and recommended correction(s).

 **WARNING**

If the problems (case 1 - case 5) cannot be solved by performing the corrective measures below, replace the Dual Safety Device. 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.

<i>CASE (1): Wire rope will not reeve.</i>	
Probable Causes	Solution
<ol style="list-style-type: none"> 1. Dual safety device is not reset. 2. There is dirt or other containment in the device. 3. The tip of wire rope is deformed. 4. Inadequate bullet on the wire rope. 5. Wire rope is not adequate. 	<ol style="list-style-type: none"> 1. Pull down reset lever of the Overspeed device to reset the Device or pull down Slack lever of Slack rope device to reset the device.(see 6) 2. Follow maintenance manual. 3-5. Make sure the proper wire rope is used. (see 2 and BISOMAC210 operator's manual)
<i>CASE (2): Platform will Ascent but not Descent.</i>	
Probable Causes	Solution
<ol style="list-style-type: none"> 1. Inter-lock plug is disconnected. 2. Dual safety device is not reset. 3. Wire rope is not adequate. 	<ol style="list-style-type: none"> 1. Connect inter-lock plug properly. 2. Pull down reset lever of the Overspeed device to reset the Device or pull down Slack lever of Slack rope device to reset the device.(see 6) 3. Make sure the proper wire rope is used. (see 2 and BISOMAC210 operator's manual)
<i>CASE (3): Wire rope jams inside of BISOMAC210.</i>	
Probable Causes	Solution
<ol style="list-style-type: none"> 1. Assembly of the device is not adequate. 2. Wire rope is not adequate. 	<ol style="list-style-type: none"> 1. Assemble the device with adequate parts. (see 0 and 5) 2. Make sure the proper wire rope is used. (see 2 and BISOMAC210 operator's manual)

CASE (4): Device will not engage wire rope.	
Probable Causes	Solution
1. There is dirt or other containment in the device. 2. Wire rope is not adequate.	1. Follow maintenance manual. 2. Make sure the proper wire rope is used. (see 2 and BISOMAC210 operator's manual)
CASE (5): Governor will not rotate.	
Probable Causes	Solution
1. There is dirt or other containment in the device. 2. Wire rope is not adequate.	1. Follow maintenance manual. 2. Make sure the proper wire rope is used. (see 2 and BISOMAC210 operator's manual)

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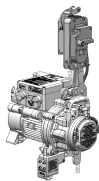
Eliminate the function of detecting "platform inclination" and remain the function of detecting "suspension wire rope's slack".

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