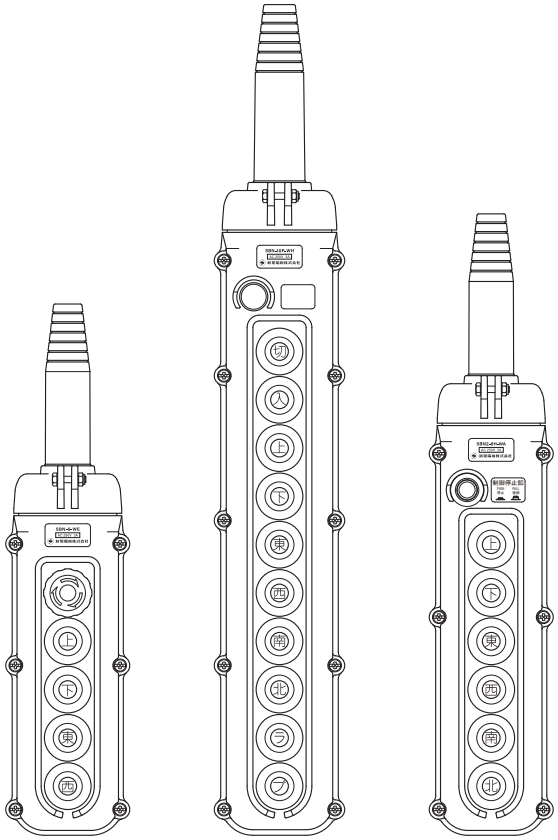
SB-E08

Instruction Manual

Indirect control push button station (contact switch)
Model: SBN/SBN2



- The user, please be sure to read this manual.

SHINKOH ELECTRIC CO.,LTD.

For Japanese Version SB-016 Rev. 10 October 2025

Introduction

Thank you for purchasing the SHINKOH push button station.

This instruction manual provides the information necessary for installation and wiring of the push button station, and for the crane/hoist operations.

Description of this instruction manual is intended for qualified personnel and those with expertise. Before installation and wiring of the push button station and operation of the crane/hoist, be sure to read this manual carefully to understand the contents. Operators should always keep this manual handy so that it can be read whenever required.

For the contents particularly required in terms of safety, refer to JCA Standards, JCAS1001-2004: "Safety Guideline for Cranes Controlled with Pendent Switch" (revised in April 6, 2004).

Safety Precautions

Most of the accidents related to crane/hoist operations controlled with pendent switches are caused by negligence in observing fundamental safety instructions and predicting hazards.

Before installation, operation, control, maintenance and inspection, be sure to read this instruction manual thoroughly to ensure proper use of the equipment. Before using the equipment, be sure to have a thorough knowledge of the equipment, safety information and all other instructions.

In this manual, instructions are classified into the two categories: "DANGER" and "CAUTION".

⚠ DANGER	"DANGER" indicates potentially hazardous conditions that will result in death or serious injury if the equipment is improperly handled.
⚠ CAUTION	"CAUTION" indicates potentially hazardous conditions that may result in medium/slight injury or property damage if the equipment is improperly handled.

Even the conditions categorized as "CAUTION" may result in serious hazard depending on situations.
All instructions provide important information. Be sure to observe them.

Example of the symbols used in this manual

△ indicates hazards to which you must pay attention. Specific instructions are given in the symbol.

○ indicates prohibited actions. Specific actions to be prohibited are given in the symbol or nearby.

● indicates the actions and instructions that you are compelled to conduct and observe. Specific instructions are given in the symbol or nearby.

* After reading this manual, be sure to keep it in place for future reference.

1. Precautions for overall handling of the equipment

⚠ DANGER	
- People who are not familiarized with the contents of the instruction manual must not operate the equipment. The qualification is needed according to the usage.	
- Be sure to conduct preoperational inspection and voluntary periodic inspection.	

2. Precautions for wiring and installation

⚠ DANGER	
- Any person other than qualified personnel or those with expertise must not conduct wiring or installation of the equipment. - Do not install the equipment in a place other than the specified environment, such as in a puddle or submergible environment.	

3. Precautions for operation and control

⚠ DANGER	
- Check operations of the pushbuttons before use. If they do not smoothly work, do not operate it. - If the crane/hoist moves in a different direction regardless of the control via the push button station, stop operation immediately. - If the push button enclosure has a cut, crack or other damage, do not operate it.	

⚠ CAUTION	
- Do not use the equipment under conditions beyond the specified electrical ratings. - Do not perform plucking (abrupt return) or excessive inching. - Do not allow the push button station cable to be caught in other objects. Do not apply strong tension to the cable. - Do not remove the “WARNING” and “CAUTION” plates or labels attached to the body. Do not leave the plates or labels illegible.	
- Clean the area around the push button station to keep it free from dust or sand.	

4. Precautions for maintenance, inspection and modification

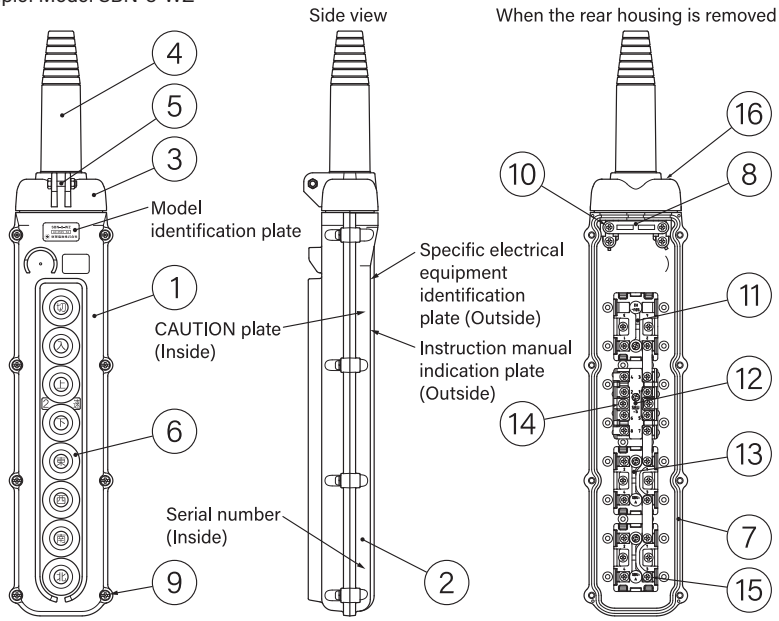
⚠ DANGER	
- Do not modify this product or accessories. - Do not use any parts other than SHINKOH genuine parts.	
- Before maintenance, inspection or repair, be sure to turn off the power switch. - Maintenance, inspection and repair must be conducted by authorized personnel with expertise. - Maintenance, inspection and repair must be conducted with a crane/hoist under no load. - If any defect is found in maintenance or inspection, do not leave it, and repair it immediately.	

⚠ CAUTION	
- During maintenance, inspection and repair work, be sure to provide signs indicating that the machine is "UNDER INSPECTION", or "DO NOT TURN ON POWER".	

Contents

[1] Part names / Tightening torque / Identification plates

1-1 Example: Model SBN-8-WZ



- Parts list

No.	Description	Tightening torque N·m (kgf·cm)	Remarks
1	Front housing		
2	Rear housing		M4 nut welded
3	Top cover		
4	Cable armour		
5	Hexagonal bolt		Wire mounting bolt with M4 nut
6	Button cap		with seal ring and button mark plate
7	Gasket		
8	Cable holder		
9	Screw M4 x 17.5	0.98 to 1.5 (10 to 15)	Front housing tightening screw
10	Screw M4 x 20.5	Refer to "4-1 (4)" on page 11	Cable holder screw
11	Contact block		Model SBU-H2
12	Contact block		Model SBU-S
13	Contact block		Model SBU-A
14	Tapping screw 4 x 18	0.98 to 1.4 (10 to 14)	Contact block mounting screw
15	Terminal screw M4 x 6	1.2 to 1.4 (12 to 14)	
16	Screw M5 x 20	2.0 to 2.5 (20 to 25)	Top cover tightening screw

- Tightening torque

When tightening each part, follow the tightening torque listed in the parts list above.

1-2 Details of the identification plates

Model identification plate

* Attached to the front of the front housing

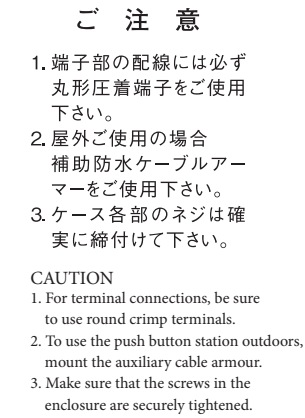
Specific electrical appliances identification plate

* Attached to the outside of the rear housing

For electromagnetic switching operation, Rainproof type

CAUTION plate

* Printed on the inside of the rear housing

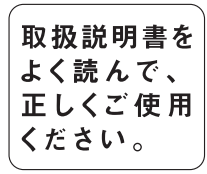


CAUTION

1. For terminal connections, be sure to use round crimp terminals.
2. To use the push button station outdoors, mount the auxiliary cable armour.
3. Make sure that the screws in the enclosure are securely tightened.

Instruction manual indication plate

* Attached to the outside of the rear housing



To endure proper use, read the instruction manual thoroughly.

[2] Checking your push button station

2-1 Outline of specifications

- Conformity to the requirements for specific electrical appliances
  Push button station for operation circuit (indirect control), Rainproof type
  Rating: 3A, 250V AC (for electromagnetic switching operation)
- Type — Series SBN/SBN2, made of polycarbonate resin
- Installation environment — -5 to 40 °C (no condensation, no freezing)
  * It is a temperature range listed in a standard as standard terms of use.
  When used except this range, the fall of a life and exchange of parts may be necessary.
- Number of buttons — 2 to 12 (Series SBN), 6 and 8 (Series SBN2)

2-2 Checking your product

Confirm that the delivered push button station is as per your order.

- Contact configuration of the contact block
- Accessories: Instruction manual
- Check if the product is not damaged during transportation.
- For inquiry on the push button station, inform us of the serial number printed on the inside of the rear housing.

[3] Description of the main components and auxiliary components

3-1 Contact configuration of the contact blocks

Model	Contact configuration		Capacity	Switching mechanism	Mounting screw
SBU-H2	1a	—	3A, 250V AC	Holding type	2 tapping screws 4 x 18
SBU-H3	1a	1b			

Model	Contact configuration		Capacity	Switching mechanism	Mounting screw
SBU-B	1a	1b	3A, 250V AC	Momentary type	2 tapping screws 4 x 18
SBU-AB	1a+1b	1a+1b			
SBU-A	1a	1a			
SBU-2A	2a	2a			
SBIU-2A2B	2a+2b	2a+2b			
SBU-S	1a+1a	1a+1a		Momentary type, 2 speed	
SBIU-T	1a+1a+1a	1a+1a+1a		Momentary type, 3 speed	4 tapping screws 4 x 10
SBIU-KS2	1a+1b			Holding-type setting knob	2 tapping screws 4 x 10
SBIU-KS4	1a+1a				
SBIU-L2	1a+1b				
SBIU-L3	1a+1a				
SBIU-L3B	1a+1a				
SBIU-E	1a+1b			Push-lock, turn-reset type	
SBIU-A1	1a			Momentary type	
SBIU-AB1	1a+1b				

* The emergency stop device (SBIU-E) is protruding from the rib more than other contact blocks. Therefore, handling the emergency stop device carelessly causes a failure of the device. To reduce impact onto the device, it is recommended that the device should be mounted at the uppermost position (on the cable side).

Control switch, buzzer switch and pilot light

Model	Contact configuration / Light source	Capacity	Switching mechanism / Color	Remarks, Mounting nut
SBU-H1	1b	3A, 250V AC	Push-pull type	Control switch M16 (Mounting hole dia. : 16.2)
SBU-BzS	1a		Momentary type	Buzzer switch M14 (Mounting hole dia. : 13.5)
PLH-220	Neon	1.1W, 220V AC	Red, Green and White	Pilot light M14 (Mounting hole dia. : 13.5)
PLH-110		0.55W, 110V AC		
PLH-24F	Filament	0.48W, 24V AC/DC		
PLH-24L	LED	0.48W, 24V DC	Red and White	
PLH-48LR		0.96W, 48V AC	Red	
PLH-LED		12 - 48V AC/DC	Green	
PLH-110Y	Neon	0.6W, 110V AC	Orange	

- About LED light sources

Due to the nature of LEDs, they will light up if the voltage exceeds the LED's forward voltage, even if the current is small, such as induction or leakage current from a contactless switch.

In addition, exposure to a surge can cause damage to the LED element, a decrease in brightness, and changes in color.

3-2 Cable armour and auxiliary cable armour

(1) Cable armour

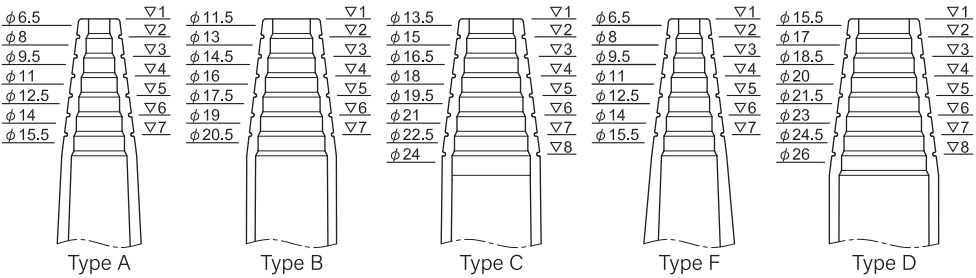
- The cable armour is used to ensure sealing effect of the cable insertion part, and to protect the cable.

⚠ DANGER

- When selecting the cable armour, make sure that the cable armour tip inner diameter is smaller than the cable outer diameter.

* If the cable armour tip inner diameter is larger than the cable outer diameter, water or dust may enter the enclosure. This will result in a switch failure, or cause the crane/hoist to run out of control.

- Shape and inner diameter of the cable armour tip (▽ indicates the cutting position.)

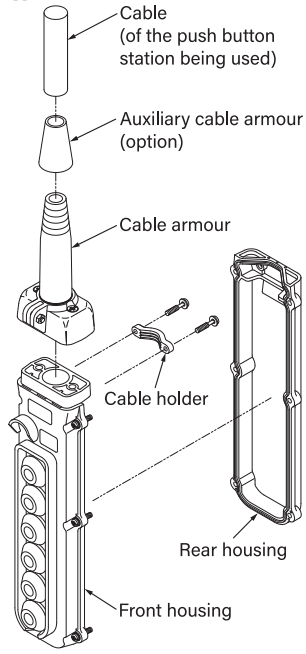


Applicable push button station model	Type	Inner diameter (mm)							
		▽1	▽2	▽3	▽4	▽5	▽6	▽7	▽8
SBN-2, 3, 4-W	A (*1)	6.5	8	9.5	11	12.5	14	15.5	—
SBN-5, 6□-W SBN2-6H, 8□-W	B (*1)	11.5	13	14.5	16	17.5	19	20.5	—
SBN-7□, 8□, 10□-W	C (*2)	13.5	15	16.5	18	19.5	21	22.5	24
	F (*2)	6.5	8	9.5	11	12.5	14	15.5	—
SBN-12□-W	D	15.5	17	18.5	20	21.5	23	24.5	26

*1 Type A and type B are compatible with each other. To use a push button station other than the above, specify the model when placing an order.

*2 Type C and type F are compatible with each other. It is shipped by type C when there is no support.

- To ensure stable sealing effect of the cable armour, cut the tip of the cable armour at the position where the cable armour inner diameter becomes at least 1.5mm smaller than the outer diameter of the connection cable. If such a cutting position cannot be selected, we recommend you to use the auxiliary cable armour.
- Example of the cable armour cutting position and inner diameter selection
  * Push button station: Model SBN-6□-W□
  * Outer diameter of the cable used: 14.5 mm * 14.5 - 1.5 = 13 mm (or less)
  * Cut the cable armour at the ▽2 position of Type B.
  (Inner diameter: 13 mm)



(2) Auxiliary cable armour

Model	Applicable cable outer diameter (mm)
HAI-7	8 - 13
HAI-12	13 - 17
HAI-16	17 - 27.5

- The auxiliary cable armour is a component for reinforcing the waterproof effect between the cable and the cable armour.
- Since the auxiliary cable armour is an optional component, it should be additionally ordered.
- It is recommended that the auxiliary cable armour should be mounted in the following conditions:
  a) When the push button station is installed outdoors, or in an equivalent place.
  b) When you cannot select the cable armour whose inner diameter is at least 1.5 mm smaller than the connection cable outer diameter.

- Mounting method

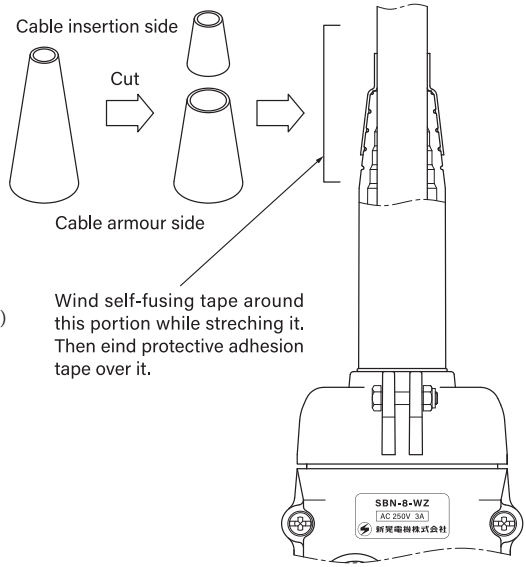
Put the auxiliary cable armour on the tip of the cable armour as shown on the right. Then, wind the cable insertion part with self-fusing tape, and wind protective adhesion tape over it.

* Use it within the following range for the interference of an outside diameter of cable and an inside diameter of auxiliary cable armour.

  1mm ≦ Interference ≦ half of an outside

* Cut off the tip of the auxiliary cable armour by using scissors with a single action. The auxiliary cable armour is made of silicone. When cutting the auxiliary cable armour, be careful not to cut it beyond the intended position.
* Wind self-fusing tape and protective adhesion tape 1 or more round trip by a half lap.
* Examples of products

  Self-fusing tape:
  ASAHI N TAPE (Sumiden Asahi Industries, Ltd.)
  (Old products: SUMITAPE B)
  Protective adhesion tape:
  ASAHI S TAPE (Sumiden Asahi Industries, Ltd.)
  (Old products: SUMITAPE C)



3-3 Button Cap

- The button cap is a rubber cap that waterproofs the pushbutton holes.

⚠ DANGER

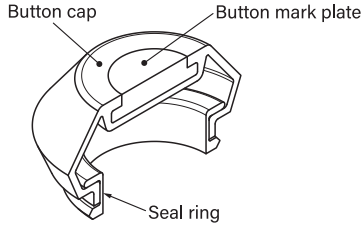
- If the button cap has a cut or crack, replace it.
* Otherwise, water or dust may enter the cap, which will result in a switch failure, or causes the crane/hoist to run out of control.

Types of button cap

Model	Color	Remarks
WC-B	Black	Standard accessory
WC-R	Red	
WC-G	Green	
WC-Y	Yellow	
WC-BS	Black	Heat & cold resistance
WC-RS	Red	
WC-GS	Green	
WC-BF	Black	Heat & chemical resistance

Model	Color	Remarks
WC-BH	Black	Holding type (SBU-H2/H3)
WC-RH	Red	
WC-M	Black	Rubber bushing
WCV-B	Black	Heat & cold resistance
WCV-R	Red	

* The WC-BH/RH button cap is dedicated to the SBU-H2/H3 holding-type contact blocks.
  The switch ON/OFF status can be visuallychecked.
* If the ambient temperature may fall below 0°C, be sure to use the silicone button cap (WC-BS/RS/GS).



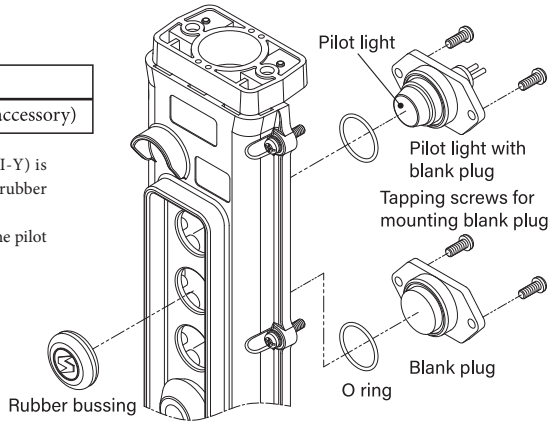
3-4 Blank plug

Blank plug

Model	Color	Remarks
WPI-Y	Yellow	Blank plug (Standard accessory)

* Unless otherwise specified, the blank plug (WPI-Y) is provided as the standard accessory, instead of the rubber bushing (WC-M).

* When the pilot light with the blank plug is used, the pilot light can be mounted at any position.

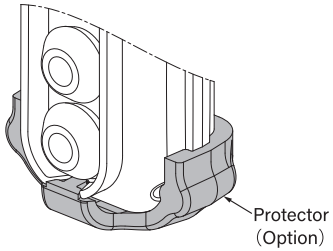


3-5 Protector

- The protector is a component for preventing the push button station from damage.
- The push button station also reduces the burden on the other party in a collision.
- Since the protector is an optional component, it should be additionally ordered.
- Material: Chloroprene rubber

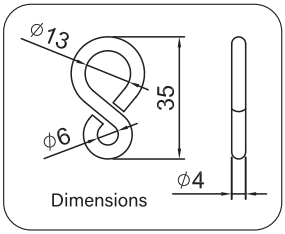
Model	Applicable push button station
CRN-6	SBN-6□-W
CRN-8	SBN-7□, 8□, 10□-W

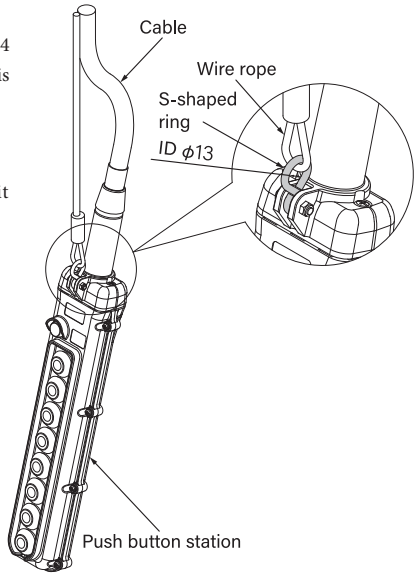
* Not available for SBN-2, 3, 4, 5, 12□-W and SBN2 models.



3-6 S-shaped ring as Hanger bracket (Option)

- For hanging push button station with a wire rope, etc. of 4 mm or more in the outside diameter, the S-shaped ring is available.
- The material of the S-shaped ring is stainless steel. The wire rope, etc. up to 12 mm can be put.
- Since the S-shaped ring is an optional component, it should be additionally ordered.





[4] Wiring, assembly and installation of the push button station

⚠ DANGER

- Any person other than qualified personnel or those with expertise must not conduct the electric wiring.

- Select the cable armour whose tip inner diameter is smaller than the outer diameter of the cable being used.
  * If the armour tip inner diameter is larger than the cable outer diameter, water or dust may enter the enclosure. This will result in a switch failure, or causes the crane/hoist to run out of control.

- Do not use the push button station in a place where it may be in contact with, or exposed to an organic solvent.
  * The push button station will develop cracks, depending on the type, concentration and temperature of the solvent. In this case, water or dust may enter the enclosure, resulting in a switch failure or causing the crane/hoist to run out of control.

- Install the push button station so that it is kept suspended.
  Determine the cable length so that push button station cannot be placed on a level plane (such as table top or floor surface).
  * Otherwise, the push button station may be immerged in water (such as puddle), causing the crane/hoist to run out of control.

⚠ CAUTION

- When the enclosure is opened, avoid placing the push button station in a place with much dust or sand. * If a foreign object enters the enclosure, malfunction or trouble may occur.
- For terminal connections, use round crimp terminals. Do not solder the wires, or do not connect the bare wires directly. * Otherwise, a trouble may occur.
- After wiring of the cabtyre cable, do not use a cable that contains talc powder that may accumulate in the push button station, or a cloth inside the sheath.
  * Otherwise, switch malfunction may occur.
- Do not use a cabtyre cable that has a cut or crack in the sheath.
  * Otherwise, water may enter the cable, resulting in a switch failure, or causing the crane/hoist to run out of control.

- To prevent direct tension from being applied to the cabtyre cable, suspend the push button station with wires.
  * Otherwise, the cable may break.

[NOTE]

- To use the push button station in a place where an organic solvent is present, consult or authorized distributor.
- To use the push button station in a place where it is exposed to high-temperature heat radiation (for example, in a metal casting plant), consult SHINKOH.
- To conduct electric wiring properly, commission a qualified electrician with understanding of this instruction manual.
- The electric wiring shall be conducted in accordance with electrical equipment technical standards and indoor wiring regulations.

4-1 Wiring and assembly procedures

* For screw tightening torque of relevant parts, refer to page 4.

- Tools prepared by user
  Prepare a philips screwdriver (JIS No. 2), cutter knife, and crimp tool.

- Disassembling the enclosure

(1) Loosen two screws (M5) that fasten the top cover, and remove the top cover.

* You can conduct the wiring work more efficiently by removing the top cover.

(2) Loosen the screws (M4) in the front housing, and remove the rear housing.

(3) Loosen two screws (M4) that hold the cable, and remove the cable holder.

- Wiring

(1) Pass the cable into cable armour mounted to the top cover by the front housing length.

* When using the auxiliary cable armour, pass the cable into the auxiliary cable armour first.

(2) Unsheathe the cable until the cable holder.

* Do not damage an insulation of wire.

(3) Mount the top cover to the front housing.

(4) Hold the cable with the cable holder.

* Tighten up a screw by the torque from which the cable does not come off at a force of 90 N (9.2 kgf).

(5) Cut the wires according to each terminal position, and attach crimp terminals.

* Use the insulated round crimp terminals of Type 1.25-4 or 2-4.

(6) Press the wires against the front housing inner surface.

* Connect the wire to the terminal at the longest distance from the cable holder position first.

(7) Check if the wiring between the push button station and control panel is correct.

(8) Check if the wires are not short-circuited.

- Assembling the enclosure

(1) Clean inside of the enclosure. (Check if there is no cable waste inside.)

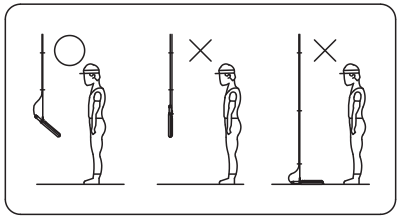
(2) Make sure that the gasket is fit in the groove of the front housing.

(3) Make sure that the cable is not protruding from the front housing.

(4) Set the rear housing on the front housing, and tighten the screws.

4-2 Assembly precautions

- If the push button station is in contact with, or exposed to a solvent, it may develop cracks depending on the type, concentration and temperature of the solvent. Before using the push button station, check if it is resistant to the solvent.
- To prevent direct tension from being applied to the cabtyre cable, suspend the push button station with wires. Determine the cable length so that push button station cannot be placed on a level plane (such as table top or floor surface).



[5] Precautions for crane/hoist operations

⚠ DANGER

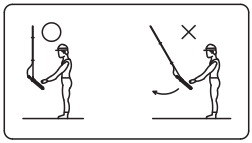
- Any person who does not have a thorough understanding of this manual must not operate the push button station. The qualification is needed according to the usage.
- If a cut or crack is found in the enclosure, button cap, cable armour or cabtyre cable, do not perform crane/hoist operations with the switch under the defective condition.
- Do not allow the push button station to be immerged in water (e.g. puddle).
  * If water enters the enclosure, it will result in a switch failure, or causes the crane/hoist to run out of control.

- Be sure to conduct preoperational inspection and voluntary periodic inspections.
  * Operating the equipment in abnormal conditions causes the crane/hoist to run out of control, or an accident such as electric shock.
- Before using the push button station, be sure to check if it smoothly operates.
  * If the push button station malfunctions or abnormally operates, the operator may suffer from injury.

- If the crane/hoist moves in a different direction regardless of the control via the push button station, stop operation immediately.
  * If the push button station malfunctions or abnormally operates, the operator may suffer from injury.

⚠ CAUTION

- When the cabtyre cable is obliquely pulled, do not release the push button station from your hand. * If the push button station is abruptly released, it may hit against people, resulting in injury, or malfunction or damage to equipment.



- Push each pushbutton all the way to the innermost.
  * If the pushbutton is no completely pushed in, the switch may malfunction, causing injury.
- Clean the area around the push button station to keep it free from dust or sand.
  * Otherwise, the push button station may malfunction.

5-1 Precautions for operation and control

- Do not place the push button station on a level plane (such as table top or floor surface).
- During operation and control, keep watching the surroundings to ensure safety.
- During operation, check if the crane moves in the direction specified by the push button station.
- During operation, the operator should face the load, and advance forward.
- In principle, do not operate two or more pushbuttons simultaneously.
- Avoid operating the push button station while holding the load or wire rope with one hand.
- After operation is completed, keep the push button station in place.
  It is recommended that the equipment for outdoor use should be provided with a rain cover.
- If a power failure occurs during operation, turn off the power switch.
- If you intend to leave the equipment unused for a long period, or to temporarily stop operation, turn off the power switch.

5-2 Emergency procedure

- If you are concerned about any point during operation, report it to the person in charge.
- If you find abnormality with the crane/hoist in operation, stop the operation immediately, and ask the person in charge to give instructions.

[6] Inspection standards

⚠ DANGER
- Before using the equipment, be sure to conduct preoperational inspection. - If you find abnormality with the equipment, stop operation immediately, and replace the defective part. * Do not operate the equipment under abnormal conditions. It is dangerous and causes an accident. - To use the push button station safely, be sure to conduct voluntary periodic inspections. * Conduct monthly voluntary inspection at least once a month, and yearly voluntary inspection at least once a year. - Voluntary periodic inspections must be conducted by authorized personnel with expertise. * Abnormal operation results in an accident.
- If abnormality is found in monthly or yearly voluntary inspection or other inspection, never use the equipment under abnormal conditions. * Do not operate the equipment under abnormal conditions. It is dangerous and causes an accident. Be sure to replace the defective part, and take an appropriate action.

- The inspections should be conducted in accordance with relevant laws and regulations, and also referring to "Guideline for Voluntary Periodic Inspections on Overhead Traveling Cranes" (notified by the Ministry of Health, Labor and Welfare on March 31, 1998).
- Relevant laws and regulations: Labor, Safety & Health Law, Enforcement regulations for the Labor, Safety & Health Law, Labor and Safety Regulations, Safety Regulations for Cranes and Structure standard of crane etc.

6-1 Preoperational inspection

- Visually check the following points:

Inspection item	Inspection standards
- Appearance	- The enclosure has no break or crack. - The screws are securely tightened. - The button cap has no cut or crack. - The cable armour has no cut or crack. - The connection cable has no cut or crack. - The wire for suspending the push button station is effective.
- Switch operations	- Each pushbutton smoothly operates according to the indication (UP, DOWN, EAST, WEST). When the pushbutton is released, operation immediately stops. - The interlock normally works.

6-2 Voluntary periodic inspections

(1) The inspection items shall be absolutely required items. The inspection interval is as follows:

Class A: Inspection items important in terms of safety. These items must be inspected at least once a month.

Class B: Inspection items important for maintenance. (Frequently used parts) These items must be inspected every three months.

Class C: Inspection items equivalent to Class B, and consumable parts. These items must be inspected every three months.

(2) Be sure to keep the inspection records (for at least three years).

Inspection item	Category	OK/NG	Description/Action	Date
- Check each terminal and tightening screw for looseness.	A			
- Check the pushbutton operating conditions. Check if the interlock is complete.	A			
- Check the cable armour for damage	A			
- Check the enclosure and button cap for damage.	A			
- Check the insulator for damage.	B			
- Check each contact for wear.	C			

[7] Maintenance

⚠ DANGER

- Before removing the rear housing from the push button station, turn off the power switch.
  * Otherwise, you may get an electric shock.

⚠ CAUTION

- Before closing the rear housing, shake the enclosure, or blow air to remove dust or waste from inside of the enclosure. Using vacuum is also effective.
  * A foreign object remaining in the enclosure causes malfunction or trouble.
- When removing the seal ring, it may break into pieces. Remove chips of the seal ring completely from the enclosure.
  * A foreign object remaining in the enclosure causes malfunction or trouble.
- The seal ring must not be reused.
  * Used seal ring does not provide sufficient sealing effect, causing a trouble.

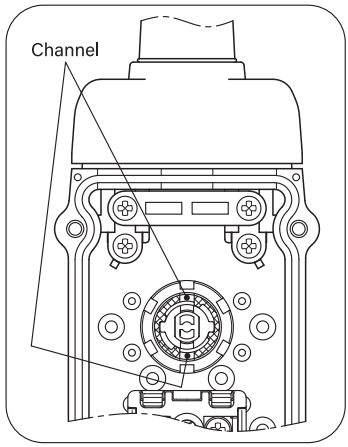
- Before parts replacement, be sure to read the following instructions carefully for thorough understanding. If any part other than those listed here is defective, you must replace the whole unit of the push button station.

7-1 Replacement of the contact block

- Remove the contact block, and remove the resin chips adhering to the contact block mounting holes and screws. Residual resin waste may cause malfunction.
- For enclosure disassembly and assembly procedures, refer to "4-1" on page 10 - 11.
- For tightening torque, refer to page 4.
- Replacement procedure

(1) Remove the rear housing.
(2) After recording the wire connections of the contact block to be replaced, remove the terminals.
(3) Loosen the contact block mounting screws to remove and replace the contact block.
(4) Connect wires to individual terminals as recorded.
(5) Mount the rear housing.

7-2 Replacement of the emergency stop device model SBIU-E



- Replacement procedure

(1) Remove the rear housing.

(2) After recording the wire connections of the contact block to be replaced, remove the terminals.

(3) Loosen the contact block mounting screws to remove the contact block.

(4) Remove the locking ring (M20) and the spring washer.

* The wrench for locking ring is attached to the emergency stop device.

(5) To remove the mushroom head, push it out with your finger from inside of the front housing.

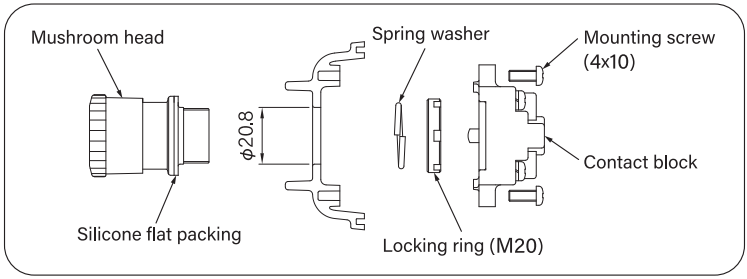
(6) Press-fit a new mushroom head (with gasket) into the button hole from outside of the front housing.

* Confirm that the gasket of the switch is installed appropriately.

(7) Tighten up the locking ring of the mushroom head.

The tightening torque is 2 N・m (20 kgf・cm). There are two channels in the portion of the screw. The channels are attaching along longer direction of the enclosure. Mount the contact block.

(8) Shut the rear housing after connect wires to individual terminals as recorded.



7-3 Replacement of the button cap

- Standard replacement method

(1) Remove the rear housing.

(2) After recording the wire connections for the contact block to be replaced, remove the terminals. Then, remove the contact block.

(3) To remove the button cap, tap a resin hammer or end of a screwdriver handle on the seal ring (white) from the inside of the front housing.

(4) Press-fit a new button cap into the front housing by using both thumbs from the operation panel side.

(5) Connect wires to individual terminals as recorded.

(6) Mount the rear housing.

- Simplified replacement method

(1) Remove the button cap to be replaced by pulling it out with long-nose pliers from the operation panel side.

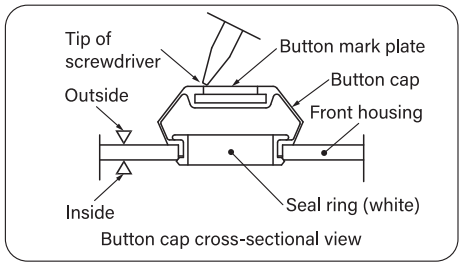
(2) Remove the remaining seal ring (white) by prying it away with a flat blade screwdriver.

(3) Press-fit a new button cap into the front housing by using both thumbs from the operation panel side.

- Replacement of the button mark plate

(1) Remove the button mark plate by inserting a small flat blade screwdriver into the groove at the top of the button cap, and mount a new one.

* During replacement of the button mark plate, be careful not to damage the button cap.



Button cap cross-sectional view

7-4 Replacement of the pilot light, buzzer switch and control switch

- Replacement of the pilot light

(1) Remove the rear housing.

(2) Rmove wiring.

* Connected by the closed-end connector, cut the lead wire and the power cord.

(3) Remove the nut (M14) and the spring washer.

(4) To remove the pilot light, push it out with your finger from inside of the front housing or the blank plug.

(5) Press-fit a new pilot light (with O ring) into the mounting hole from outside of the front housing.

(6) Tighten up the nut of pilot light. * The tightening torque is 0.29 to 0.34 N•m (3 to 3.5 kgf•cm).

(7) Follow the wiring procedure for each wiring type.

[By the plug-in connector]

1) When a plug-in connector (f type) is not attached to a power cord, crimp the bundled "TMEDN 480520-FA" or equivalent.

* Wire conjugation range of "TMEDN 480520-FA" is AWG16 to 14 (1.31 to 2.08 mm^2).

2) Push the fastening terminal into the receptacle.

* When connecting the cable, do not pull the cable with the fastening terminal strongly, or bend it repeatedly. Such actions cause cable breaks.

[By the closed-end connector]

1) Cut the lead wire with an appropriate length.

2) Peel the end of lead wire and power cord tip.

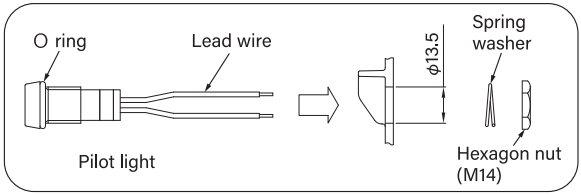
* Using bundled closed-end connector (Model CE-2), peel from 13 to 16 mm.

3) Twist the strands, insert each part to the end of the closed-end connector and crimp it.

* The bundled closed-end connector (Model CE-2) can be used with a total cross sectional area of the electric wire of 1.0 to 3.0 mm^2. It is outside this range, prepare the corresponding closed-end connector.

* Lead wire of model "PLH-110Y" is AWG18 (0.82 mm^2), the other pilot lights are AWG20 (0.52 mm^2).

(8) Close the rear housing.

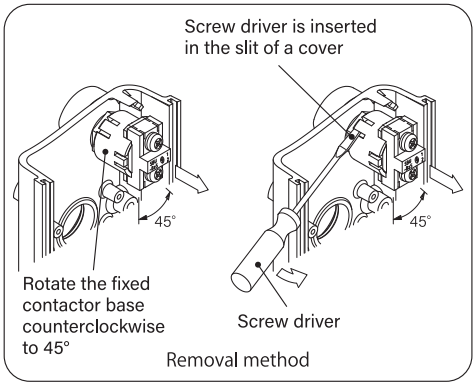


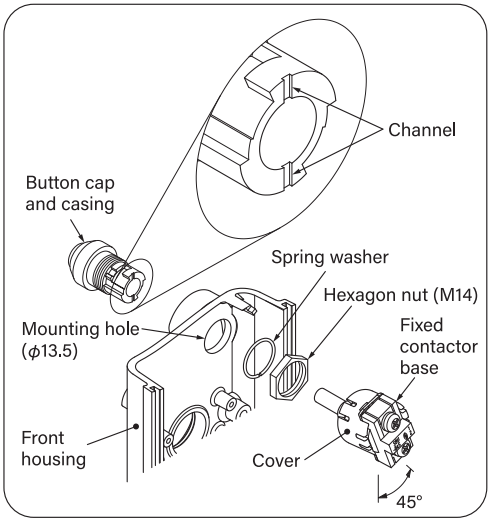
- Replacement of the buzzer switch model SBU-BzS

(1) Remove the rear housing and the wiring.

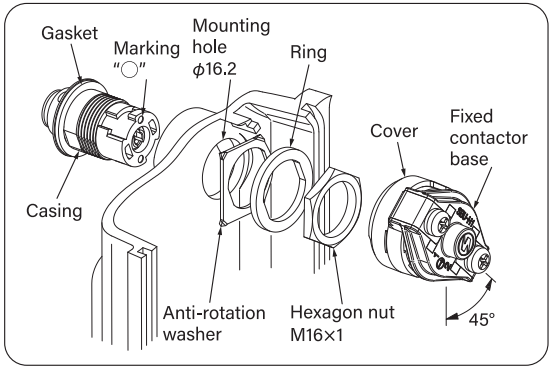
(2) Rotate the fixed contactor base counterclockwise by 45° and pull the fixed contactor base from push button.
As other method, screw driver is inserted in the slit of a cover and the pawl of a cover is deformed. Rotate the fixed contactor base counterclockwise to 45° and the fixed contactor base is drawn out.

(5) Push the casing from the outside of the front housing into the hole.
(6) Tighten the nut. The tightening torque is 0.44 to 0.49 N・m (4.5 to 5 kgf・cm).
There are two channels in the portion of the casing. The channels are attaching along longer direction of the enclosure.
(7) Incline the fixed contactor base by 45 ° and insert it in the casing.
(8) Rotate the fixed contactor base by 45 °.
(9) Shut the rear housing after it wires.





- Replacement of the control switch model SBU-H1
(1) Remove the rear housing.
(2) Remove wiring, and turn the fixed contactor base counterclockwise by 45° while attracting an external cover in the fixed contact base's direction.
(3) Pull the fixed contactor base from push button, and remove the nut.
(4) The casing, anti-rotation washer and the ring come off when pushing it out of the inside of the front housing with the finger.
(5) Push the casing from the outside of the front housing into the hole.
Confirm the gasket is assembled to the casing.



(6) The casing that a round sign turns to the vertical direction is inserted in the front housing. And, anti-rotation washer and the ring are assembled.
(7) Tighten the nut. The tightening torque is 1.5 N・m (15 kgf・cm).
(8) Incline the fixed contactor base by 45 ° and insert it in the casing.
(9) Rotate the fixed contactor base by 45 °.
(10) Shut the rear housing after it wires.

[8] Warranty

8-1 Scope and period of warranty

This warranty document prescribes the scope of warranty on the push button station.

(1) Scope of warranty

If a failure or defect is found with any of the genuine components of the push button station within the warranty period prescribed below and it is attributable to an inadequacy in material or manufacturing process, SHINKOH shall replace the defective component, or the whole unit.

(2) Items subjected to warranty, and period of warranty

The items subjected to warranty, and the period of warranty are as follows:

- Items subjected to warranty

1) All components and accessories that have been mounted before shipment.
However, any item corresponding to the “exemptions from warranty” prescribed below shall be excluded from the scope of warranty.

2) Products used in Japan (For products used overseas, contact SHINKOH.)

- Period of warranty

The warranty period is one year from the date of delivery.

8-2 Exemptions from warranty

(1) Failure or defect judged to be attributable to the following factors:

- Use under conditions exceeding the specified limits
- Inadequacy or error in installation (including wiring), maintenance and inspection
- Modification or use unauthorized by relevant laws/regulations or the manufacturer

(2) Failure or defect listed below:

- Failure or defect attributable to external factors, such as soot, chemicals, heat radiation or dust.
- Sensory phenomenon having no functional influence
- Wear from use, and secular change (e.g. damage to button cap)

(3) SHINKOH shall not bear the following expenses, even within the period of warranty.

- Damage of being caused due to breakdown of products.
- Expenses for inspection, adjustment and cleaning
- Expenses for replacement, and incidental expenses
- Compensation for the loss resulting from the disabled push button station
(Secondary loss, such as communication expense and discontinuation of business operations due to the failure)

(4) Other exemptions

- SHINKOH products have been designed and manufactured as general-purpose industrial equipment. When the products are used in the fields that may have significant influence on people’s lives and properties, such as nuclear power generation, aviation, railroad, medical equipment and so on, they are beyond the scope of warranty.

- To ensure accurate judgment and quick response, be sure to inform us of the serial number of your equipment when you contact us for inquiry. The serial number is stamped on the inside of the rear housing.
- For future reference, fill in the following items:
  1) Model
  2) Serial number
  3) Date of purchase

BUSINESS LINES

for control of crane and hoist
PUSH BUTTON STATION

for power supply and control of crane and hoist
VINYL CABTYRE CABLE

easy installation
"SDM" rail system

for suspension of electric/pneumatic supply
CABLE/HOSE HANGERS

for power trolley
POWER COLLECTORS

for power supply and insulation
WIRING MATERIALS

1-5-16 YAMASAKA HIGASHISUMIYOSHI-KU
OSAKA-SHI OSAKA 546-0035 JAPAN
Phone +81-6-6629-1123 Facsimile +81-6-6623-1133
URL https://www.shinkoh-electric.co.jp/
E-mail sales@shinkoh-electric.co.jp

* The performance and specifications are subject to change without prior notice as improvements are made in the product.