https://www.saho-robot.com/

Shihai Single-Axis Sliding Table Series

Operation Manual & Installation Manual

VER.20260609

Index

1. Safety Precautions

Before operating or installing SAHO products, please carefully read the Safety Precautions and this manual to ensure safe and correct operation of the product. The purpose of this manual is to prevent personal injury or equipment damage caused by improper operation. Follow the correct procedures and adhere to all precautions and markings specified herein.

L-L Safety Documentation

Warning
If the procedure is performed incorrectly, it may result in severe injuries that could be life-threatening.

Dangerous
If the procedure is performed incorrectly, it can result in severe injuries or death; the mouth may become life-threatening.

Note
If the operation is incorrect, it may result in personal injuries and damage to property.

The operating manual cannot detail all aspects of safety precautions; therefore, users must strictly adhere to these guidelines to develop proper safety knowledge and judgment capabilities. For the location of the electric slide mechanism and its basic operating principles and specifications, please refer to other chapters of this manual.

l-2 Precautions for Tindox

The following are the key precautions outlined in the electric slide operating instructions. Additionally, each chapter details the precautions for installation, adjustment, operation, inspection, and maintenance. Please strictly adhere to these precautions.

a) Automatic execution of brick-related operations (i.e., attention-related processes).

- The operator enters the automatic slide table. To prevent injury from contact with the movable parts of the electric slide table, please install safety guard barriers.
- At the entrance of the safety guardrail, please install a chain device for start-up and emergency stop.
- Try to avoid entering or exiting through any points other than the designated entry and exit points of the chain facility.

Dangerous

- If the candle is touched while the electric slide table is in operation, it may cause severe injuries.
- Automatically moving bricks; do not enter the safety guardrail of the electric sliding platform.
- To enter the security guardrail bricks, press the emergency stop button.

b) Be careful: your hand is being clamped.

When operating the electric slide table during teaching or similar tasks, be careful not to let your hands get caught in the moving parts.

 Warning

- There is a possibility of a crush injury.
- Do not approach the moving parts of the electric slide table.
- Keep a distance from the movable parts of the electric slide table.

c Regarding the operating instructions

- For the installation of the electric slide table, please read the operating instructions carefully and follow the instructions provided above when performing the work.
- Read the "Safety Precautions" carefully before proceeding.
- Do not perform any actions related to installation, adjustment, operation, inspection, or maintenance that are not mentioned in this operating manual.

 Warning

Improper installation or operation of the electric slide may result in serious injury; therefore, read this operating manual before installation and use.

d) Use is prohibited in environments containing flammable gases.

- Use is prohibited in environments containing flammable gases.
- This electric slide table does not have explosion-proof specifications.
- Do not use in environments containing flammable gases, combustible powders, or flammable liquids, as there is a risk of explosion or fire.

e) Use is prohibited in situations where electromagnetic interference or other potential hazards may occur.

 Warning

In environments with electromagnetic interference, electrostatic discharge, or radio electromagnetic wave interference, do not use electric slides. Incorrect operation of electric slides may pose hazards.

f Notes for removing the vertical specification electric slide table (upper and lower shaft brakes)

 Warning

If the brake is released, there is a risk of the upper and lower axles sliding downward.

- After pressing the emergency stop button but before releasing the brake, use a support stand to secure the upper and lower shafts.
- During direct hands-on training after releasing the brake, ensure you are protected from being caught between the upper and lower shafts and the platform.

g) Safety measures for the terminal effect (e.g., grip portion)

 Warning

- The design of terminal effects is intended to prevent the loss of power (e.g., electrical or air pressure) or to avoid hazards caused by electric discharge.

- The terminal effect carries the risk of the clamped object falling; appropriate safety precautions must be implemented based on the object's size, weight, temperature, chemical properties, and other characteristics.

h) Precautions when removing the motor

 Warning

If the motor is removed, there is a risk of the upper and lower shafts sliding downward.

- Before cutting off the controller power and removing the motor, secure the upper and lower shafts with a support stand.
- Please ensure that body parts are not caught between the upper and lower shaft drive components or between the upper/lower shafts and the frame.

i) Key points for controller inspection

 Warning

- When inspecting the controller, touching its external terminals, or connecting the terminals, disconnect the controller's power supply and cut off the main power source to prevent electric shock.
- Never touch the internal parts of the controller.

j) Address damage and abnormalities in the electric slide table

 Warning

The electric slide table becomes hazardous to use when damage or malfunctions occur; immediately cease use and contact our company.

k Precautions when touching the high-temperature parts of the motor or reducer housing

 Warning

After automatic operation, the surface temperature of the motor or reducer housing will be extremely high; accidental contact may cause thermal burns. When performing contact inspections, disconnect the controller's power supply first, allowing the surface temperature to decrease gradually through heat dissipation. Only proceed with contact after confirming that the surface temperature has fallen within a safe range.

l) Do not remove, alter, or damage warning signs

 Warning

- The unauthorized removal of warning signs may lead to accidents as other personnel fail to see the warnings.
- Do not block the warning sign on the electric slide table.
- Ensure that the warning symbol's pattern and text are clearly visible from outside the safety guardrail.

m) Protection Combination

 Warning

To prevent static electricity, be sure to ground the electric slide tray and the controller.

n) Note the parameter settings

The warning accounts for inertial factors and tip mass effects, as well as other inertial influences. Maintain appropriate acceleration of the electric slide table during operation. Failure to comply may result in premature degradation of the actuator lifespan, damage, and residual vibration during positioning.

o) Installation and Disassembly Mechanism

ng: When installing or removing accessories, ensure the mechanism is in the powered-off and stopped position. Personnel must wear appropriate safety equipment (e.g., safety shoes, safety helmets, protective gloves, goggles, etc.) to prevent physical injury. ※ Steel belts may cause bodily harm; handle with care and wear protective gloves during installation and removal.

1-3 Safety Features of the Electric Slide Table

a) Overload detected

Check the motor for overload and cut off the servo power supply.

b) External Extreme Limit Sensor

Under the settings for each axis and the external limit sensor, the manual operation range is restricted after origin return, and the operational range during automatic operation is defined accordingly. Additionally, the area restricted by the external limit sensor is referred to as the operational range.

c) Mechanical gear block

The mechanical stop block is installed to prevent movement beyond the authorized range of the shaft, enabling emergency stop operations or safety functions during high-speed movement when the servo power is cut off. In contrast, the rotating shaft section does not incorporate a mechanical stop block design. The area restricted by the mechanical stop block is also referred to as the permissible movement range.

Warning

During axis movement, due to emergency stop operations or other safety functions, the axis cannot stop immediately even after the servo power is cut off. Please note this precaution.

d) Vertical specification (for upper and lower axle guides): Vehicle

The vertical specification (upper/lower shaft brake) refers to an electromagnetic brake installed when the servo power is disconnected to prevent the slide table from sliding downward. This brake is activated when the upper and lower shaft servo sections are engaged, prior to turning off the controller power and before connecting it again.

Warning

When the brake is released, the upper and lower shafts slide downward, posing a danger.

irst press the emergency stop button and secure the support for the upper and lower shafts,then release the brake.

- When releasing the brake, be careful not to have any part of your body between the upper and lower shafts and the mounting base.

1-4 System Security Measures

When integrating the automatic system with the electric slide platform, the system poses greater risks compared to the standalone electric slide platform. For system manufacturers, it is imperative to implement safety measures compatible with all components of the system. Relevant precautions concerning system safety measures, operation, and maintenance should be appropriately provided by the system manufacturer.

1-5 Test Operation

After completing the installation, adjustment, inspection, maintenance, and repair of the robotic system, proceed with the trial operation in the following sequence.

a) In the case where no safety guardrails are installed after installation

Pull the rope from the outer side of the movable range of the cable and chain to replace the safety guardrail. Strictly adhere to the following instructions:

- The pillar is fixed and not movable.
- It is easily identifiable from its surroundings.
- Signage indicating no entry and prohibiting access to areas within the operational range by personnel during work shall be prominently displayed.

b) Check before connecting the controller power supply

- Is the sliding table robot properly installed?
- Whether the electrical installation is correct.
- Whether the wiring for grounding and other connections is appropriate.
- Whether the connection with the surrounding slide platform is appropriate.
- Are there any safety protection measures (such as safety guardrails)?
- Check whether the installation environment is within the specified environment.

c) Confirmation after inserting the controller power supply

- Can start, stop, select mode, etc., be performed as approved?
- By rotating the axis, you can restrict the soft border.
- Can the final outcome be achieved through the plan?
- The final outcome and whether the signal exchange with peripheral devices is functioning properly.
- Can emergency stop operation be performed?
- Whether the demonstrator and its demonstration functions are functioning properly.
- Is the safety protection and connection device functionality approved?
- Can appropriate movements be performed during automatic operation?

1-6 Work Inside the Safety Guardrail

a) Work inside the safety guardrail

When working within a safety guardrail, the controller's power supply must be disconnected except in the following cases. Clear signage must be displayed during work to ensure that other personnel do not operate the controller's power switch or control panel.

- Settings for the external limit sensor.
- Demonstration Request (refer to below)

b) Demonstration

When conducting demonstrations within safety barriers, follow these instructions:

1) Before proceeding beyond the protective barrier, please confirm the following points.

- visually check whether there are any hazards within the safety barrier.
- Is the handheld programmer functioning properly?
- Is there any malfunction with the electric slide platform?
- Whether the emergency stop device is functioning properly.
- Automatic operation is prohibited in demonstration mode.

2) Strictly prohibit entry into the operational range of equipment enclosed within safety barriers.

1-7 Automatic Operation

a) Perform pre-operation checks

- There is no one inside the safety barrier.
- Handheld demonstrators, tools, and other equipment are located at designated positions.
- Check whether the abnormality indicator lights on the slide and surrounding equipment are functioning.
- The security lock function of the safety guardrail is activated.

b) During operation and in case of abnormalities

- After startup, verify the operating status and automatic operation mode using the operational indicator light.
- It is strictly prohibited to enter the safety barrier while the system is in operation.
- When an abnormal condition occurs with the electric slide table or surrounding equipment, perform the following steps before entering the safety guardrail:

1) Turn on the emergency stop switch to halt the electric slide platform.

2) Place a marker before the start switch and in conspicuous locations to indicate that the electric slide is undergoing emergency procedures, preventing other personnel from operating or starting it.

1−8: Adjustment, Inspection, Etc.

For any operations not covered in this manual—such as installation, adjustment, inspection, or maintenance—do not proceed.

1−9 Repair, Modification, Etc.

This operating manual does not mention or list any related repair, part replacement, or modification procedures. Since these tasks require specialized knowledge, do not attempt them; doing so may pose hazards.

2. Warranty Period and Scope

Warranty period

There are two warranty periods; the warranty period shall be determined by whichever expires first. The duration is:

- 18 months after the product leaves the factory.
- It has been installed and used for 12 months.

Warranty Scope

During the warranty period, any faults occurring under normal use shall be repaired free of charge by our company, except for the following items:

- External paint peeling and natural fading.
- Replacement of consumables.
- Damages caused by earthquakes, storms, floods, lightning, fires, or other natural or man-made disasters.
- Inappropriate installation or use by the user.
- Modifications were made without the consent of our company.
- Use unspecified or未经 approved lubricating oils and greases.
- Incomplete or incorrect maintenance and inspection.
- Maintenance performed by non-authorized dealers.

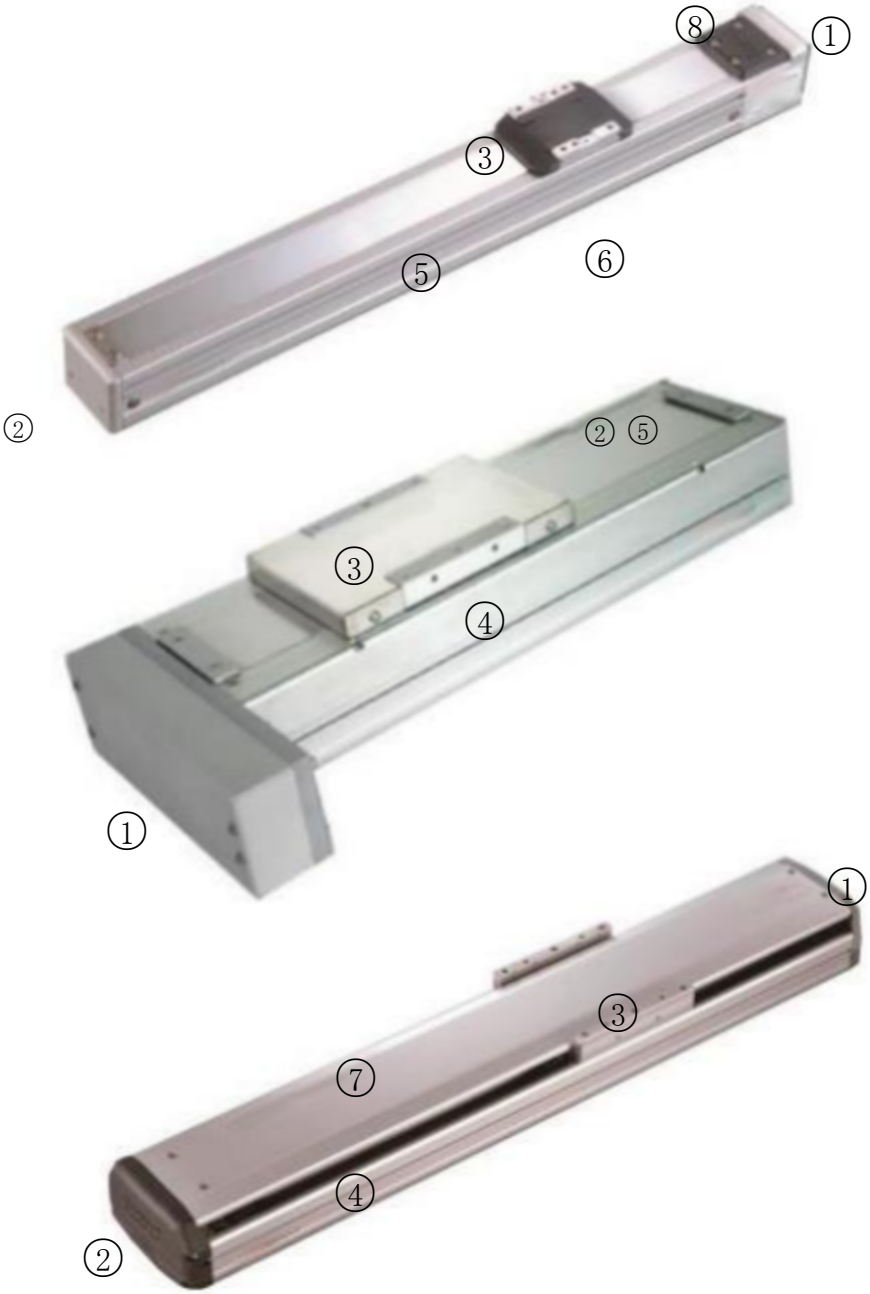
The company is responsible for repairing defects in its own products but shall not be liable for any other losses resulting from product defects.

Service Scope

When purchasing our products, we provide you with the following services:

- Provide guidance for installation, debugging, and trial operation.
- Provide guidance for maintenance and repair.
- Technical guidance and training for wiring operations.
- Technical guidance and education in programming.

3.Names of Various Parts



① Motor side

②Reverse

Motor Side

③ Sliding Seat

④ Body

⑤ Dust-proof steel strip

⑥Lateral cover

⑦ Top cover

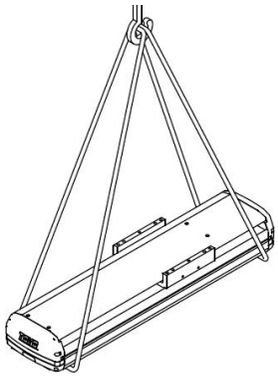
⑧ Coupling top cover

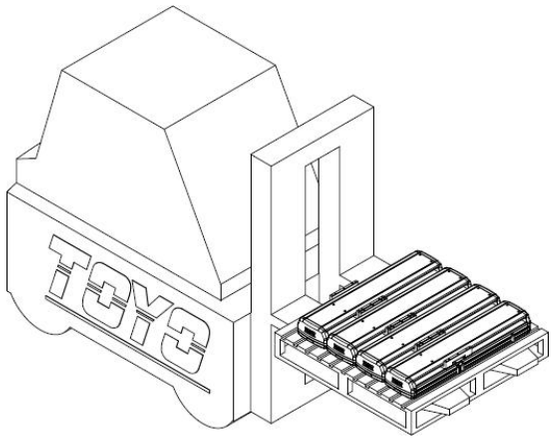
4-1 Transportation and Movement

Whether transporting the company's products manually or mechanically, all personnel must wear equipment compliant with safety regulations, including helmets, gloves, and safety shoes. Equipment with a load capacity exceeding the weight of the company's products must be used for transportation; refer to the specification document for product weight specifications.

If a overhead crane is used for transportation, verify that the steel rope or cable used can withstand the product's weight, and ensure that the rope is properly positioned around the product with an appropriate point of application to maintain balance during movement and prevent falling.

When transporting with a stacker crane or trolley, ensure the equipment remains balanced and stable, and that the protruding parts of the trolley do not collide with surrounding objects.





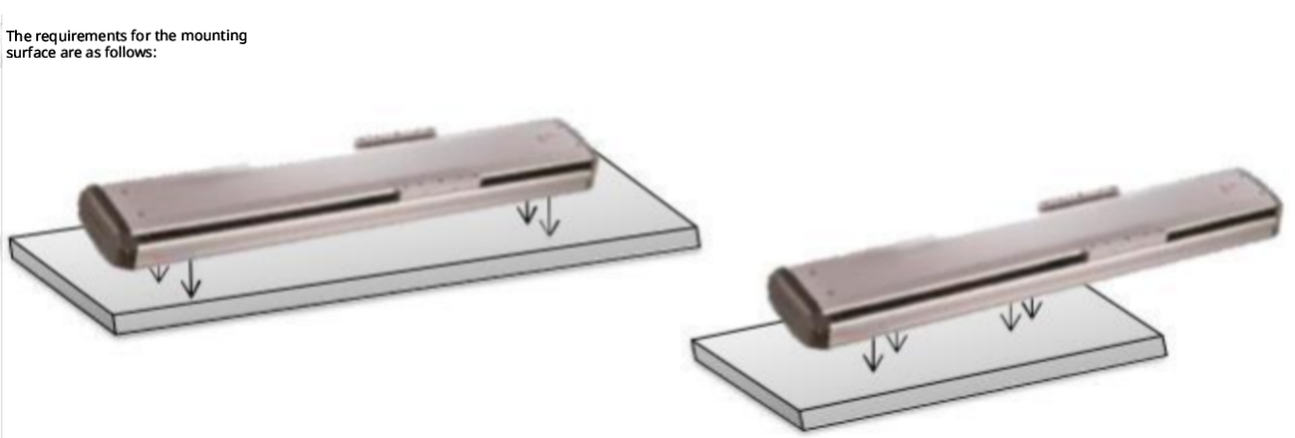
The following slide surface areas are not appropriate points for applying force:

- Sliding seat
- Two end fixing plates
- Top cover
- Power or signal cable (if the motor is installed)

4-2 Installation Environment and Mounting Surface Requirements

The installation environment requirements and constraints for the SAHO slide platform are as follows:

Request Item	ETH	ECH
Temperature range during operation in the surrounding environment	0~45℃	0~45℃
Humidity range during operation in the surrounding environment	35~85% RH	35~85% RH
Maximum installation height	At sea level, 0–1000 m	At sea level, 0–1000 m
The surrounding environment	Avoid the following environments: Near water sources, cutting fluids, dust, metal chips, or organic solvents; environments filled with corrosive gases or liquids. Environments containing flammable gases, liquids, or solids. Areas subject to electromagnetic interference, electrostatic discharge, or wireless magnetic waves. Locations near vibration sources that are susceptible to their effects or prone to impacts. Ensure sufficient maintenance space is available for personnel operations.	



Correct insertion and removal surface　　Incorrect access surface

a) The hardness and stability of the cutting surface must be sufficient to withstand the vibrations generated during slide operation, as well as the combined weight of the slide and the workpiece.

b) The measuring surface must be flat, with an error within ±0.05 mm per 500 mm.

c) The mounting surface must be larger than the main body and have sufficient screw holes for fixation.

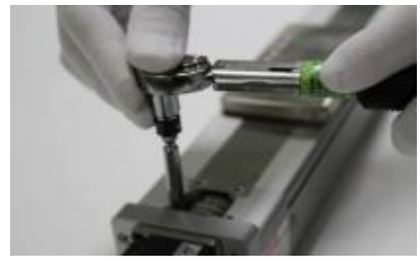
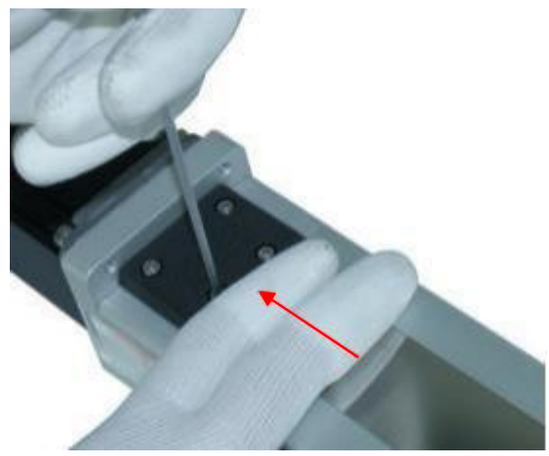
4-3 Motor Installation

All installation work must be performed by experienced and licensed professionals.

Before installation, ensure the power supply is disconnected and that personnel are equipped with appropriate safety protective gear.

Motor installation model: MSDM series screw motor with exposed slide table (BC)

Order	Action Sequence	Pattern Description
1	First, remove the four screws on the coupling cover.	
2	Loosen the screws on the motor end coupling. (If there is no coupling, install the coupling first after removing the coupling cover.)	
3	Integrate the motor with the slide table. When securing the motor, pay attention to the motor cable routing position (to avoid obstructing other components).	

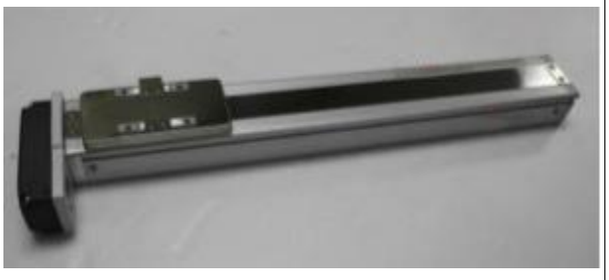
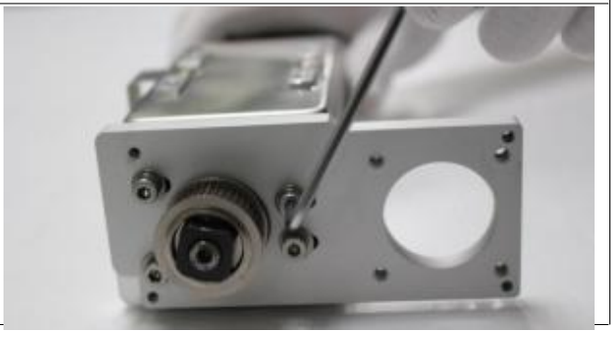
4	1.As shown, first secure the motor screw in the upper right corner; do not tighten it immediately. 2. Secondly, secure the motor screw in the lower left corner; do not tighten it excessively. 3. Lock the diagonal screws, then repeat step 1.2. 4. After completing the above operations and ensuring the motor lock is not tilted, tighten the four motor screws.	
5	Use a torque wrench to tighten the motor end coupling.	
6	Refasten the four screws on the coupling cover; this is necessary because of the steel belt. Adjustments are required; please do not tighten the screws securing the other end of the steel strap yet. As shown in Figure., hold the steel belt with your finger and then tighten the four screws that secure the belt to ensure it does not loosen. Note that applying excessive force when pulling the steel belt may cause it to deform or warp.	
7	Hold the steel belt with your fingers and then tighten the two screws that secure the belt to ensure it does not loosen. Note that applying excessive force when pulling the steel belt may cause it to deform or warp.	

8	After securing the end plates of steel strip 2, manually push the sliding seat back and forth 2–3 times to test for warping. If warping is detected, adjust the steel strip pressure plates accordingly. The above operations may need to be repeated several times to ensure the steel strip is laid flat. During prolonged operation, the dust-proof steel belt tends to elongate and deform, necessitating adjustments through this procedure.	
9	This completes the motor assembly.	

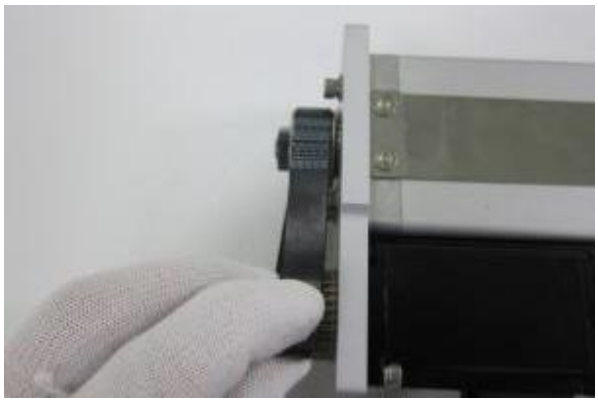
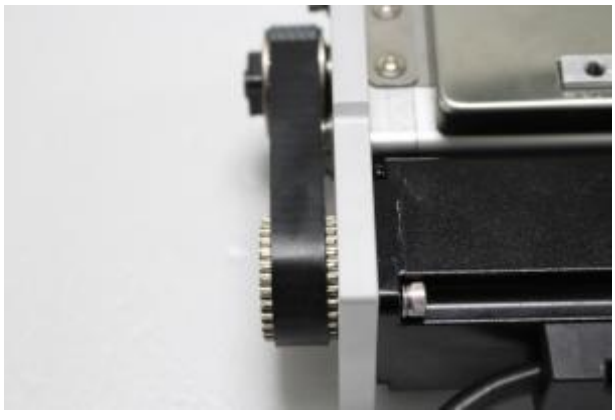
Motor installation model:
MSDM series

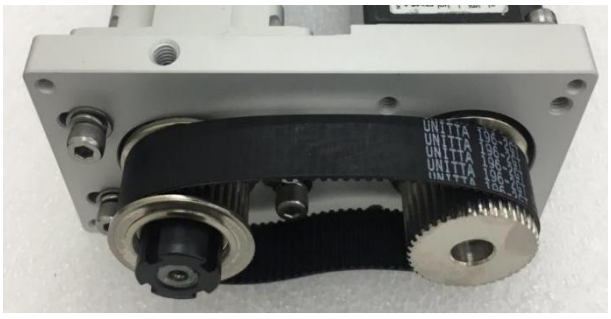
Screw motor left-turning slide table (BL)

Screw motor right-turning slide table (BR)

Order	Action Sequence	Pattern Description
1	Place the slide table flat on the desktop.	
2	First, remove the four screws from the pulley housing.	
3	Remove the locking screw of the motor folding plate.	
4	Loosen the four screws of the motor folding plate until it can move left and right.	

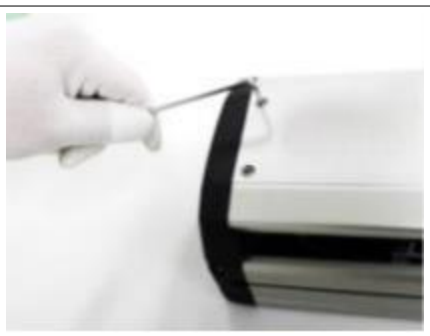
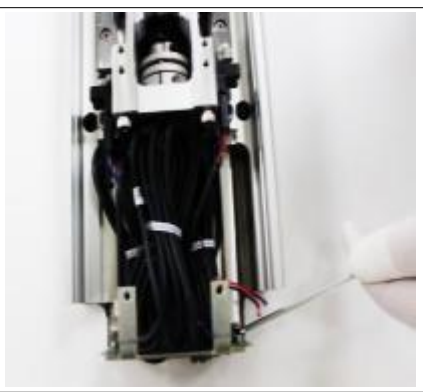
5	Three clamping pulleys are secured to the front of the motor; ensure that the inner and outer alignment of the clamping grooves on both sides is correct.	
6	Note: A gap must be left between the pulley and the motor.	
7	The pulley and motor in the image show no gap between them; this is an incorrect schematic diagram.	
8	When connecting the motor cable, pay attention to the motor cable outlet position. 1. As shown in the attached image, secure the motor screw in the upper-left corner, but do not tighten it yet. 2. Secondly, secure the motor screw in the lower right corner; do not tighten it excessively. 3. After completing the above operations and ensuring the motor lock is not tilted, tighten the two motor screws.	

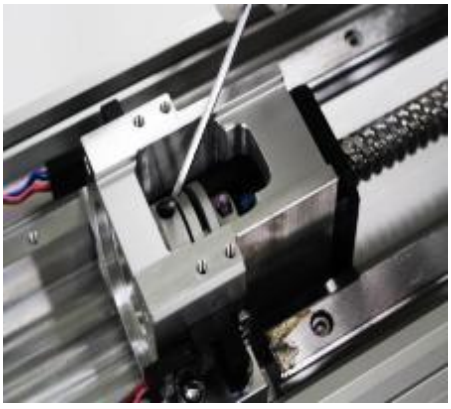
8	First, fit the motor belt onto the pulley attached to the screw end.	
9	Then fit the motor belt onto the pulley attached to the motor end.	
10	Note that the belt must be positioned exactly in the center of the pulley.	
11	Adjust the motor pivot plate to the desired belt tension and tighten the screw. Check whether the belt loop is too loose or too tight; tighten the pulley, then read the tension gauge to make further adjustments.	

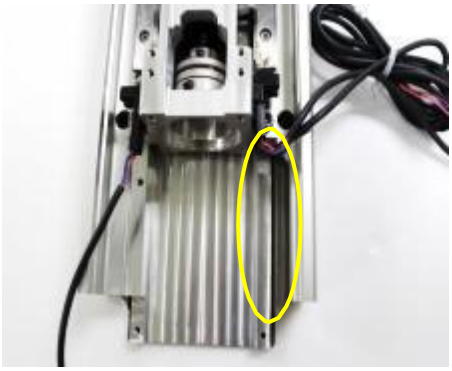
12	!: If the belt is too loose, gear skipping may occur, preventing proper operation.	
13	When the ring belt is too tight, it may deform or become damaged, potentially causing failure of the motor and its shaft, along with abnormal noises and screw misalignment.	
14	Use a belt tension gauge to verify that the belt tension is correct. Please refer to [Appendix 1] for the screw-type slide belt tension values table.	
15	Cover the outer cover of the belt wheel and secure it with four fixing screws.	
6	This completes the motor assembly.	

Motor installation model:
SDM series

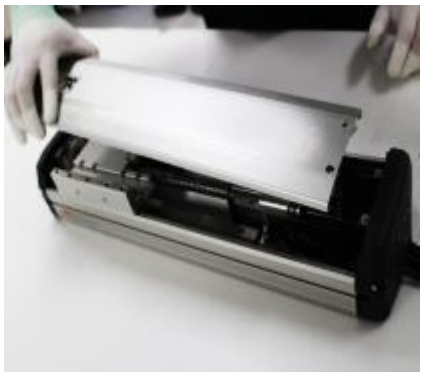
Built-in slide table (M) for
screw motor

Order	Action Sequence	Pattern Description
1	Place the slide table flat on the desktop.	 The figure shows the slide table as SDM100.
2	First, remove the four screws on the top cover.	
3	Remove the four screws from the plastic end cover at the motor end.	
4	Remove the two screws from the top cover support plate.	

5	Pull out the built-in sensor line and place it at both ends.	
6	Locking motor tool: T-type wrench.	
7	Remove the bolt securing the motor mount.	
8	Loosen the motor end coupling.	

9	The circled area indicates the motor's built-in cable outlet position, while the main body features engraved grooves.	
10	Place the motor onto the housing, ensuring that the motor's cable exit position aligns with the housing groove position.	
11	Connect the motor to the coupling.	
12	When connecting the motor cable, pay attention to the motor cable outlet position. 1. As shown, first secure the motor screw in the upper right corner; do not tighten it immediately. (The built-in motor lock requires a T-wrench for installation.)	

13	2. As shown in the attached image, the motor screw in the lower left corner should not be tightened. 3. Lock the diagonal screws, then repeat step 1.2. 4. After completing the above operations and ensuring the motor lock is not tilted, tighten the four motor screws.	
14	Use a torque wrench to tighten the motor end coupling.	
15	Secure the two screws of the upper cover support plate in place. Note that the motor and sensor cables must be routed inside the upper cover support plate.	
16	Reattach the four plastic end caps using screws.	

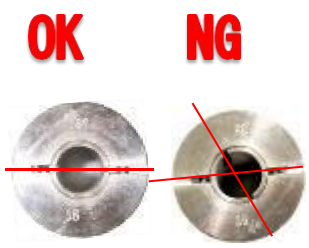
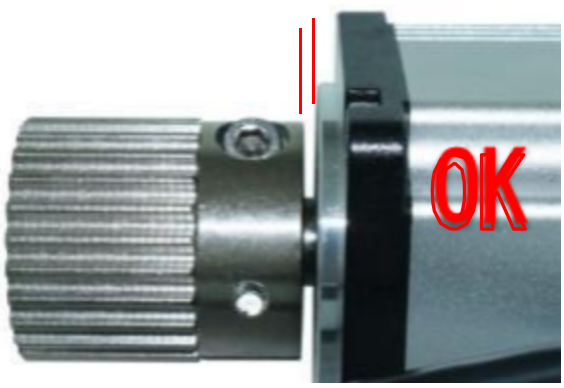
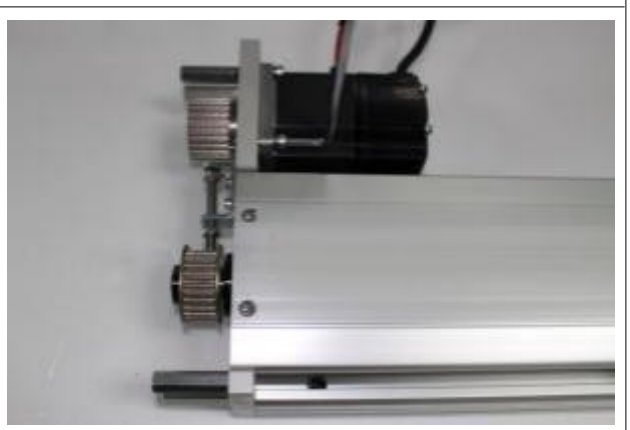
17	Reattach the cover lock to the sliding platform and secure the four screws of the upper cover.	
18	This completes the motor assembly.	

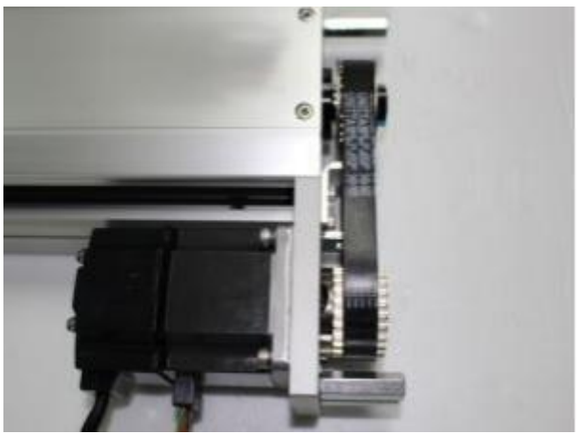
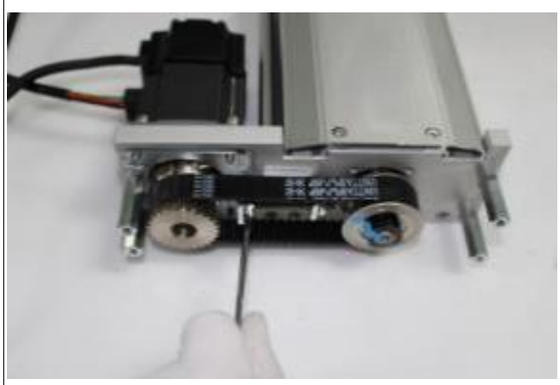
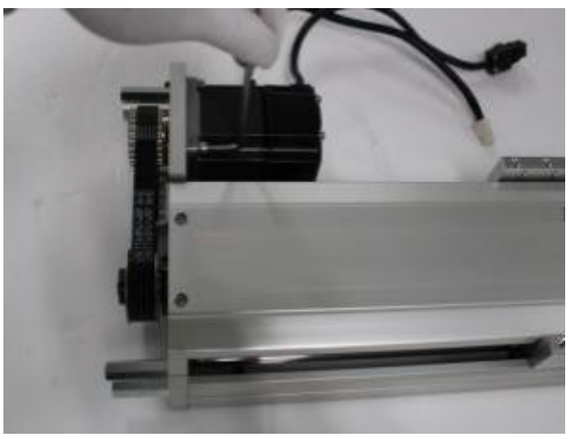
Motor installation model: SDM series screw motor with left-turn slide table (BL).

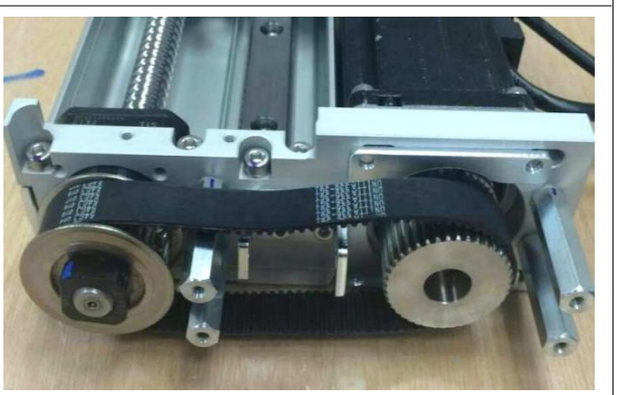
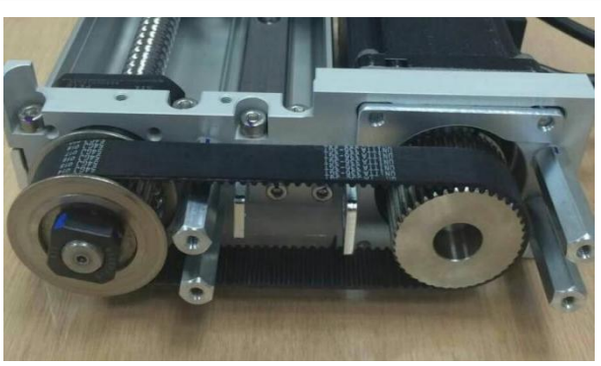
Screw motor right-turning slide table (BR)

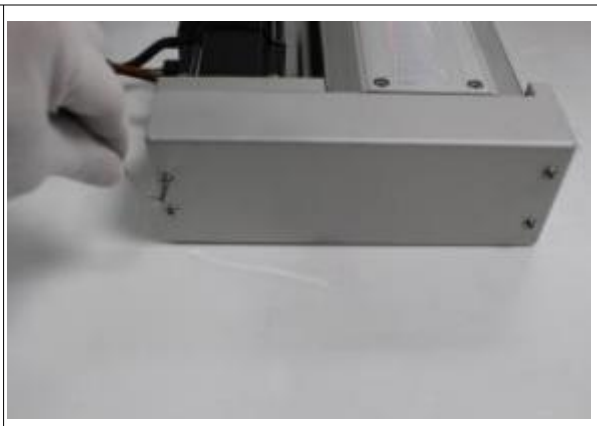
Screw motor-powered folding slide table (BM)

Order	Action Sequence	Pattern Description
1	Place the slide table flat on the desktop.	 Figure * shows the slide table SDM136
2	First, remove the four screws on the belt pulley outer cover.	
3	Remove the motor gasket locking screw and install the motor back in place.	
4	The components required for the lock-and-slip table are: motor, motor pulley belt, and pulley.	

5	Three clamping pulleys are secured to the front of the motor; ensure that the inner and outer alignment of the clamping grooves on both sides is correct.	
6	Note: A gap must be left between the pulley and the motor.	
7	The pulley and motor in the image show no gap between them; this is an incorrect schematic diagram.	
8	When locking the motor, check whether the motor washer has been inserted. Since the belt tension needs to be adjusted, the motor screws should not yet be tightened.	

9	Fit the motor belt onto the pulley secured to the screw end.	
10	When installing the pulley onto the motor lock, ensure the belt is positioned exactly at the center of the pulley.	
11	Use an open-end wrench to adjust the external hex screw and tighten or loosen the motor ring belt.	
12	After adjusting the motor belt tension to the desired tightness, tighten the motor according to the following steps: 1) As shown, first secure the motor screw in the upper-left corner, but do not tighten it yet. 2. Secondly, secure the motor screw in the lower right corner; do not tighten it excessively. 3. Lock the diagonal screws, then repeat step 1.2. 4. After completing the above operations and ensuring the motor lock is not tilted, tighten the four motor screws.	

13	Use an open-end wrench to tighten the locking nut in the external hexagonal adjustment screw. **Check whether the belt tension is too loose or too tight; tighten the pulley, then readjust using the tension gauge.**	
14	!: When the belt tension is too loose, gear shifting may fail to function properly.	 *Synchronous belt installation error diagram slider
15	When the ring belt is too tight, it may cause deformation or damage to the belt itself, as well as potential damage to the motor and its shaft. Additionally, abnormal noises and screw misalignment may occur.	 *Synchronous belt installation error diagram with sliding carriage
16	Use a belt tension meter to verify whether the belt tension is correct. Please refer to [Appendix 1] for the table of tension values for the folding slide table ring belt.	

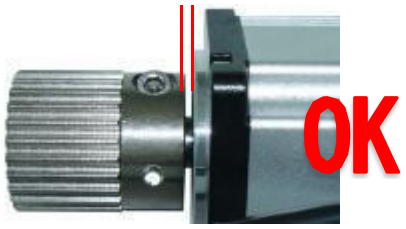
17	Secure the four screws onto the belt pulley cover.	
18	This completes the motor assembly.	

Motor installation model: MSDM series screw motor with left-turn slide table (BL).

Screw motor right-turning slide table (BR)

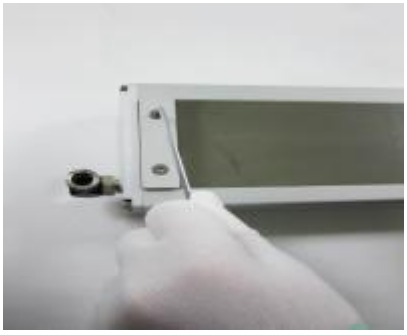
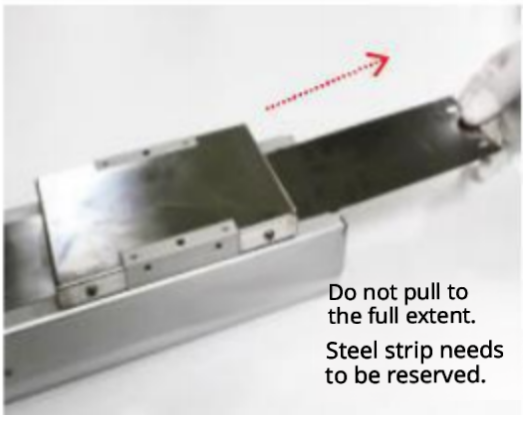
Screw motor-powered folding slide table (BM)

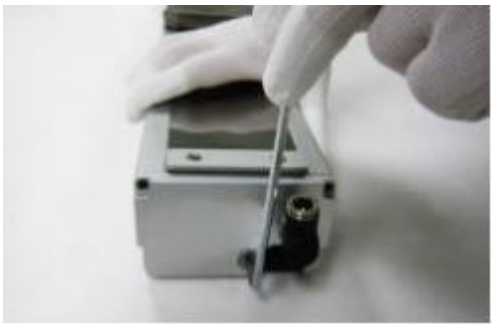
Order	Action Sequence	Pattern Description
1	First, remove the four screws on the belt pulley outer cover.	
2	Remove the motor gasket locking screw and install the motor back in place.	
3	The components required for the lock-and-slip table are: motor, motor pulley belt, and pulley.	
4	Three clamping pulleys are secured to the front of the motor; ensure that the inner and outer alignment of the clamping grooves on both sides is correct.	

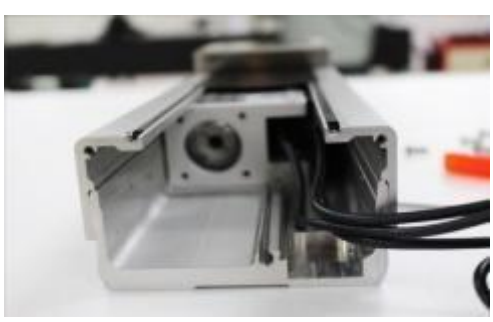
5	Note: A gap must be left between the pulley and the motor.	
6	The pulley and motor in the image show no gap between them; this is an incorrect schematic diagram.	
7	When locking the motor, check whether the motor washer has been inserted. Since the belt tension needs to be adjusted, the motor screws should not yet be tightened.	
8	Fit the motor belt onto the pulley secured to the screw end.	
9	When installing the pulley onto the motor lock, ensure the belt is positioned exactly at the center of the pulley.	
10	Use an open-end wrench to adjust the external hex screw and tighten or loosen the motor ring belt.	

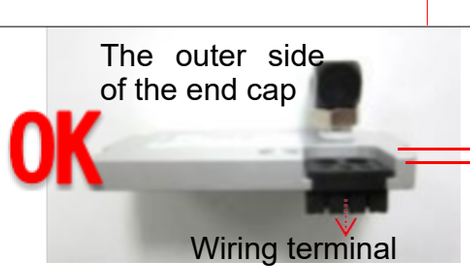
11	After adjusting the motor belt tension to the desired tightness, tighten the motor according to the following steps: 2) As shown, first secure the motor screw in the upper-left corner, but do not tighten it yet. 2. Secondly, secure the motor screw in the lower right corner; do not tighten it excessively. 3. Lock the diagonal screws, then repeat step 1.2. 4. After completing the above steps and ensuring the motor lock is not tilted, tighten the four motor screws.	
12	Use an open-end wrench to tighten the locking nut in the external hexagonal adjustment screw.	
13	Use a belt tension meter to verify whether the belt tension is correct. **Check whether the belt ring is too loose or too tight; tighten the pulley.** !: When the belt tension is too loose, gear shifting may fail to function properly. When the band is too tight, it may cause deformation, damage, and abnormal noise. Please refer to [Appendix 1] for the screw-type slide table belt tension value table.	
14	The motor assembly is completed by securing the four screws onto the belt pulley cover.	

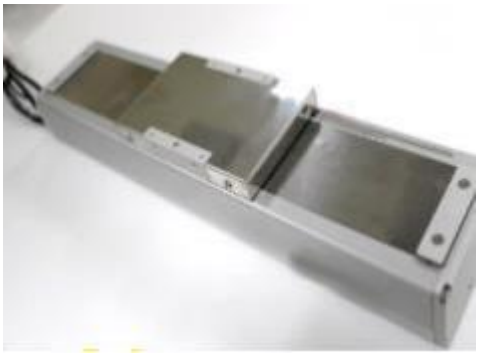
Motor installation model:
MSDM series screw motor
with built-in slide table (M)

Order	Action Sequence	Pattern Description
1	Place the slide table flat on the desktop.	
2	First, remove the four screws securing the fixing plates on both steel strips.	
3	This photo shows the removal of the fixing plates from the steel strips on both sides.	
4	The front steel strip must be reserved to prevent it from being pulled into the slide seat interior.	 Do not pull it to the full length; reserve the steel strip.

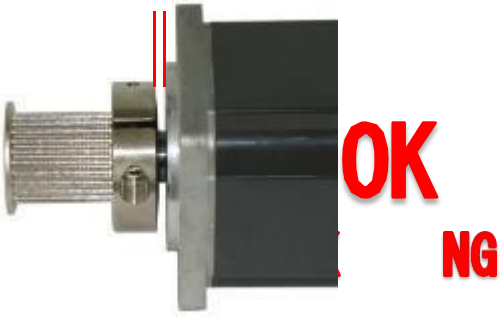
5	Remove the two internal hex screws above the motor end cover.	
6	Remove the head screw located below the motor end cover.	
7	Remove the two screws from the lower fixing seat of the steel strip.	
8	Pull out the built-in sensor cable and place it at the dust-free outlet position.	

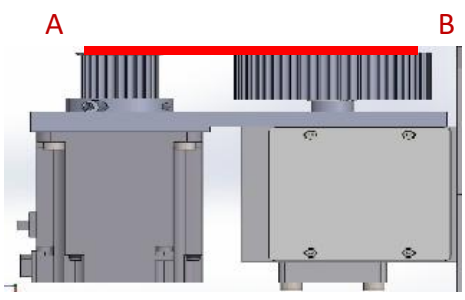
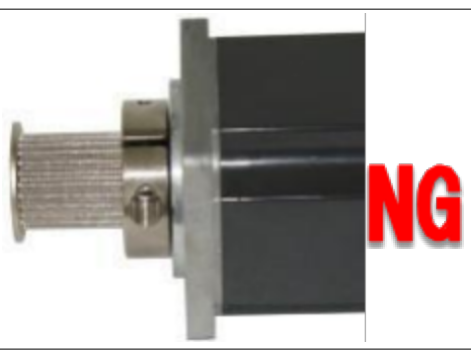
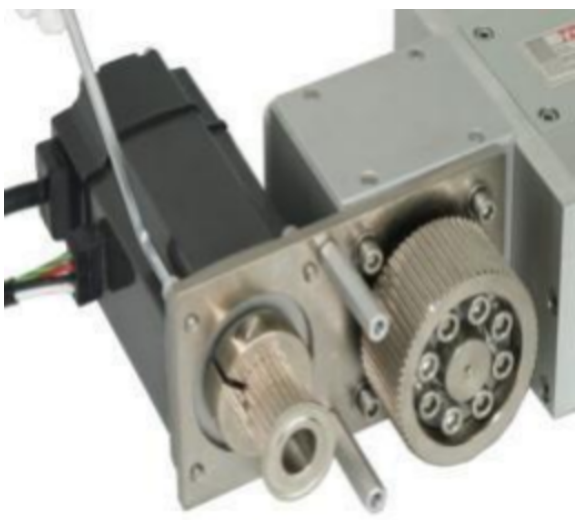
9	Locking motor tool: T-type wrench.	
10	Remove the bolt securing the motor mount.	
11	Loosen the motor end coupling.	
12	The circled position indicates the motor's built-in cable outlet location, while the main body features a engraved wire pressure seat groove.	
13	Connect the motor to the coupling. Place the motor onto the housing, ensuring that the motor's cable exit direction aligns with the housing groove orientation.	

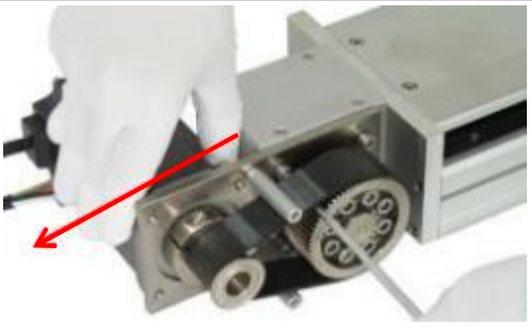
14	When connecting the motor cable, pay attention to the motor cable outlet position. 1. First, tighten the motor screw in the upper-left corner, but do not lock it yet. 2. As shown in the attached image, the motor screw in the lower right corner should not be tightened. 3. After completing the above operations and ensuring the motor lock is not tilted, tighten the two motor screws. (The built-in motor lock requires a T-wrench for installation.)	
15	Use a torque wrench to tighten the motor end coupling.	
16	Secure the two screws onto the lower fixing base of the steel strip.	
17	Fit the wire clamp onto the motor end cover; the image shows an incorrect view, with the clamp protruding beyond the surface of the motor end cover.	
18	The image shows the correct photograph; the pressure line seat does not extend beyond the surface of the motor end cover.	

19	Place the motor wiring on both sides above the wire clamp; the three holes below are for the built-in sensor wiring.	
20	Lock the two internal hex screws above the motor end cover and the single socket screw below back into place.	
21	Hold both ends of the steel belt with both hands and pull it back to the position aligned with the hole in the lower fixing seat.	
22	Fasten the four fixing plates on both steel strips back using screws.	
23	This completes the motor assembly.	

Motor installation model: MSTM, STM, TA, TR, MTG series belt-type slides

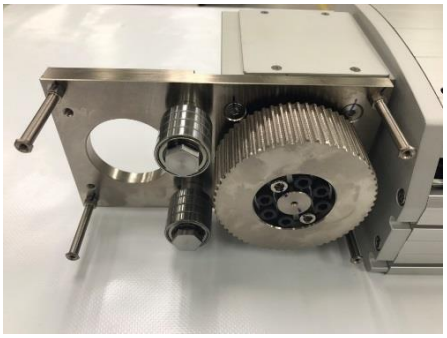
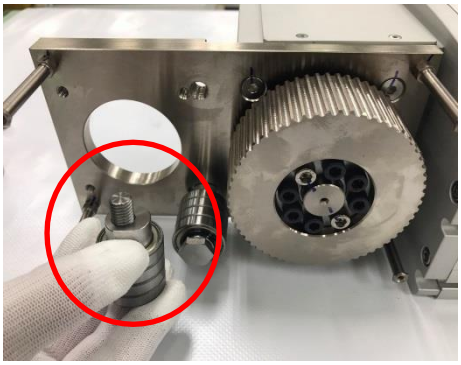
Order	Action Sequence	Pattern Description
1	Remove the motor gasket locking screw to install the motor.	
2	First, remove the two screws from the belt pulley outer cover.	
3	The components required for the lock-and-slip table are: motor, motor pulley belt, and pulley.	
4	Three clamping pulleys; the clamping grooves on both sides must be aligned and locked.	
5	Note: A gap must be left between the pulley and the motor.	

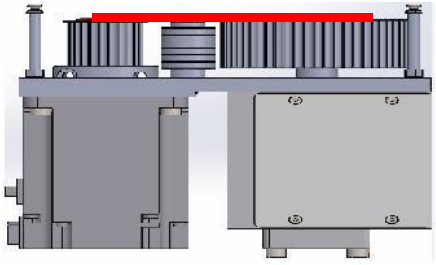
7	The gap between the pulley (A) and the motor should not be excessive, as this could cause interference protrusion; instead, it must be parallel to the other pulley (B), as illustrated.	
6	The pulley and motor in the image show no gap between them; this is an incorrect schematic diagram.	
7	Lock the screws on both sides of the pulley evenly and tighten them firmly.	
8	When locking the motor, pay attention to the motor cable outlet position. Lock the motor by following these steps: 1.As shown, first secure the motor screw in the upper right corner; do not tighten it immediately. 2. Secondly, secure the motor screw in the lower left corner; do not tighten it excessively. 3. Lock the diagonal screws, then repeat step 1.2. 4. After completing the above steps and ensuring the motor lock is not tilted, tighten the four motor screws.	

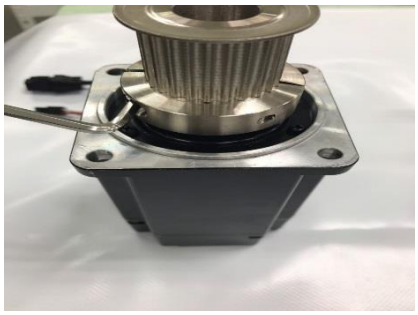
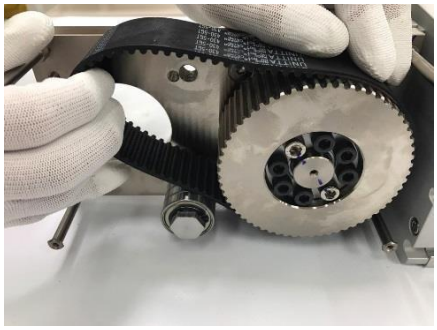
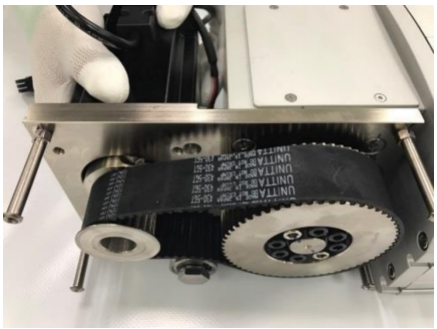
9	Loosen the four screws of the motor folding plate until it can move left and right.	
10	First, fit the motor belt onto the pulley attached to the motor lock.	
11	Then fit it onto the pulley attached to the sliding platform lock.	
12	Adjust the motor deflection plate to the desired tightness of the ring band, then tighten the screws.	
13	Use a belt tension meter to verify whether the belt tension is correct. **Check whether the belt ring is too loose or too tight; tighten the pulley.** !: When the belt tension is too loose, gear shifting may fail to function properly. When the band is too tight, it may cause deformation or damage to the band. The motor and its shaft may be damaged, accompanied by abnormal noises and screw misalignment. Please refer to [Appendix 1] for the table of tension values for the folding slide table ring belt.	

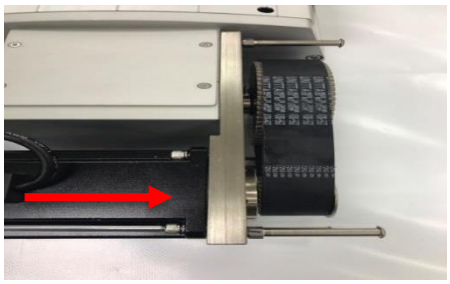
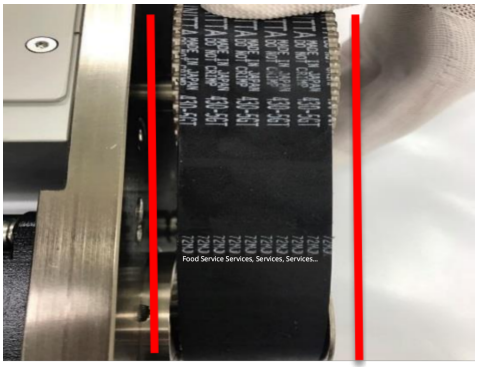
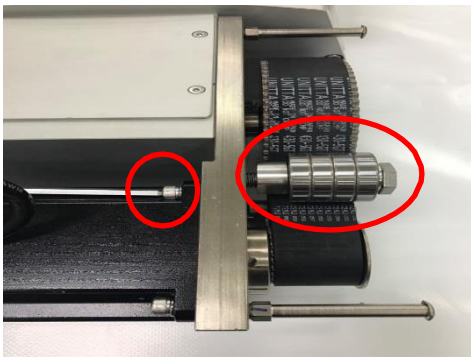
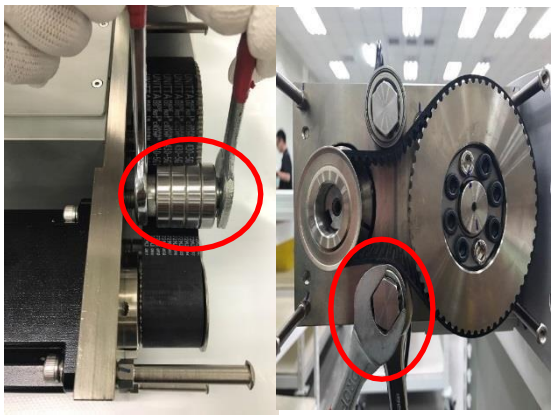
14	The motor assembly is completed by securing the belt pulley cover screws in place.	

Motor installation model:
MSDM series

Order	Action Sequence	Pattern Description
1	Remove one of the eccentric shafts to facilitate subsequent installation of the motor and pulley belt. As shown in Figure [2]	 Figure [1]  Figure [2]

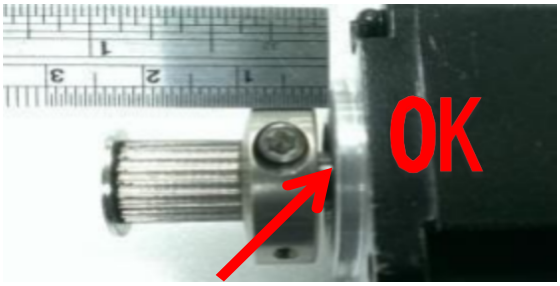
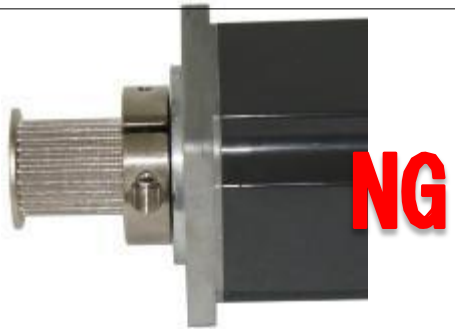
2	Figure [1] The motor pulley is installed properly; maintain the gap NG➔As shown in [Figure 2], no gap is retained between the pulley and the motor. The gap retention should not be excessive, as this may cause the pulleys to protrude. The two pulleys (A) and (B) must be parallel, as shown in Figure [3].	 Figure [1]  Figure [2] A B  Figure [3]

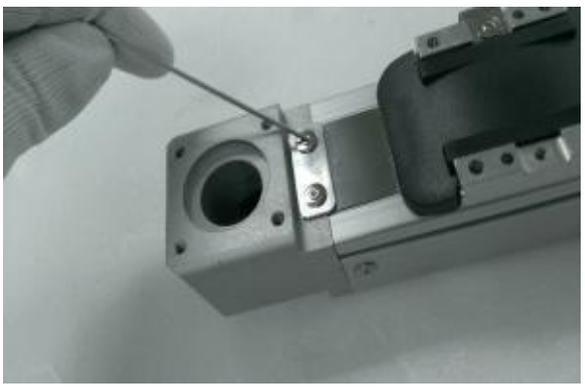
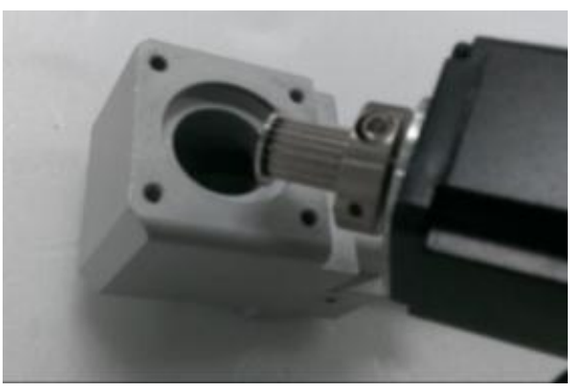
3	Figure [1]: Two screws for securing the motor pulley belt. After achieving average locking, use a torque wrench to verify the tightness. Figure [2] The cross-sections at both ends after average locking must be uniform (schematic diagram).	 Figure [1]  Figure [2]
4	Figure [1]: Installation of the motor belt ring. Figure [2] Install the motor within the motor plate (note the motor lead-out position, as specified by the customer).	 Figure [1]  Figure [2]

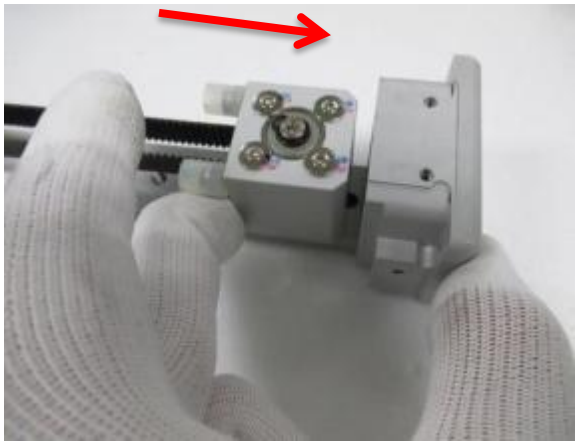
5	Figure [1]: For the motor installation, use four screw springs and a spring washer. First, diagonally tighten two screws (the primary purpose is to ensure the motor is securely fastened against the motor plate). Figure [2]Check whether the belt pulley is centered on the pulley (the belt pulley must not extend beyond the pulley; if the motor has no brake, manually rotate the pulley to confirm).After completion, loosen the original Figure [1]: Diagonal fixing screws facilitate subsequent installation.	 Figure [1]  Figure [2]
6	Figure [1] Insert the eccentric shaft,then tighten the four screws securing the motor end (use a torque wrench to check the tightness). Figure [2]: Secure the eccentric shaft using two开口 wrenches (two locks).	 Figure [1]  Figure [2]

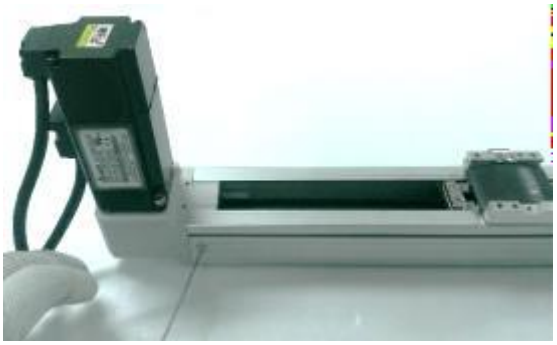
7	Install the motor and belt.	

Belt adjustment and sliding table motor assembly models: ETB5, ETB6

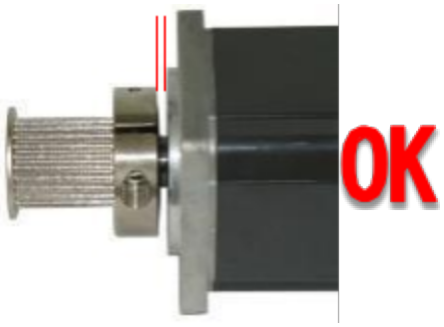
Order	Action Sequence	Pattern Description
1	The arrow in the image indicates the connection point between the motor and its mounting base.	
2	Three clamping pulleys; the clamping grooves on both sides must be aligned and locked.	
3	Note: A gap must be left between the pulley and the motor.	
4	The pulley and motor in the image show no gap between them; this is an incorrect schematic diagram.	
5	Lock the screws on both sides of the pulley evenly and tighten them firmly.	

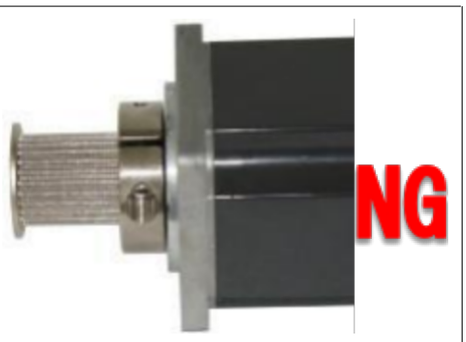
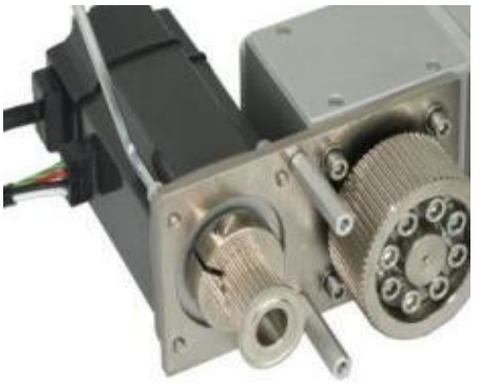
6	Remove the two pressure plate screws and detach the steel strip pressure plate.	
7	Remove the two side cover screws and detach the side cover.	
8	Pass the pulley installed on the motor over the belt inside the motor housing, as shown in the figure!	
9	When locking the motor, pay attention to the motor cable outlet position. Lock the motor by following these steps: 1. As shown, first lock the screw in the lower left corner; do not tighten it completely. 2. Secondly, secure the screw in the upper right corner; do not tighten it excessively. 3. Re-tighten the diagonal screws and repeat action 1.2. 4. After completing the above operations and ensuring the motor lock is not tilted, tighten 2 to 4 motor screws.	

10	1. Before adjusting the belt, measure a fixed distance using a ruler. 2. Schematic diagram of belt tension meter testing.	
11	Loosen the screws of the pulley assembly behind the adjustment belt.	
12	The direction indicated by the red arrow is the tightening direction for adjusting the belt tension.	
13	After completing the previous step, perform a tension value test.	

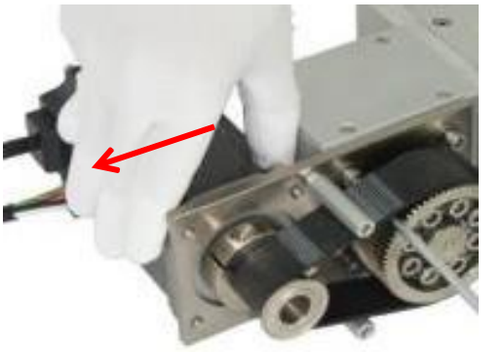
14	Lock the side cover.	
15	Lock the rebar strip pressure plate.	
16	Complete the diagram for the institution.	

Motor installation model: MSTM series
belt-type slide table

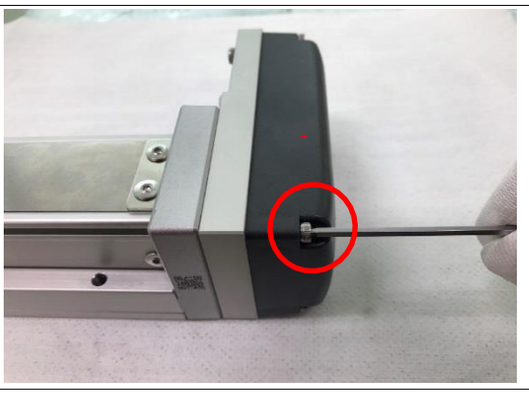
Order	Action Sequence	Pattern Description
1	Remove the motor gasket locking screw to install the motor.	
2	First, remove the two screws from the belt pulley outer cover.	
3	The components required for the lock-and-slip table are: motor, motor pulley belt, and pulley.	
4	Three clamping pulleys; the clamping grooves on both sides must be aligned and locked.	
5	Note: A gap must be left between the pulley and the motor.	

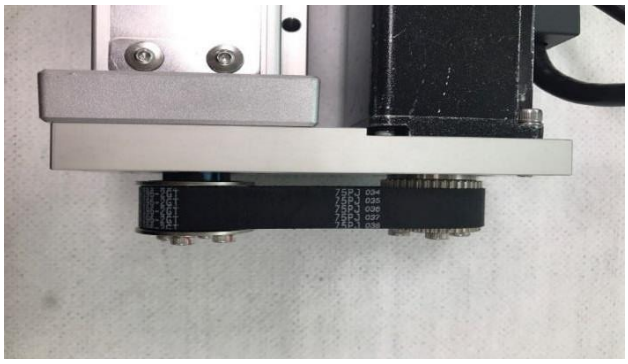
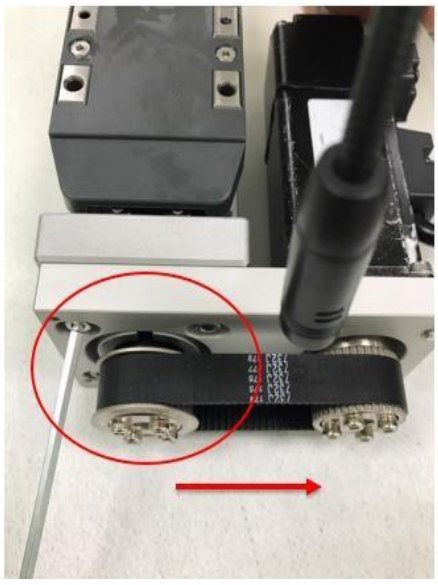
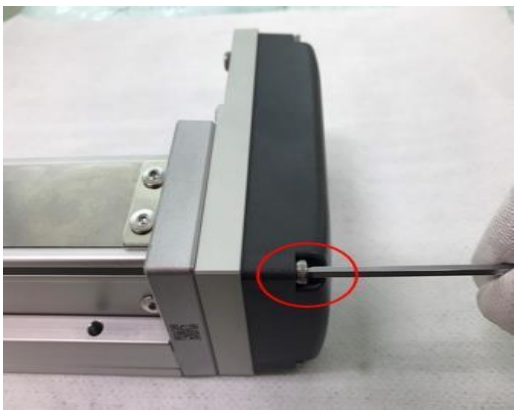
6	The pulley and motor in the image show no gap between them; this is an incorrect schematic diagram.	
7	Lock the screws on both sides of the pulley evenly and tighten them firmly.	
8	When locking the motor, pay attention to the motor cable outlet position. Lock the motor by following these steps: 1) As shown, first secure the motor screw in the upper right corner; do not tighten it immediately. 2. Secondly, secure the motor screw in the lower left corner; do not tighten it excessively. 3. Lock the diagonal screws, then repeat step 1.2. 4. After completing the above steps and ensuring the motor lock is not tilted, tighten the four motor screws.	
9	Loosen the four screws of the motor folding plate until it can move left and right.	

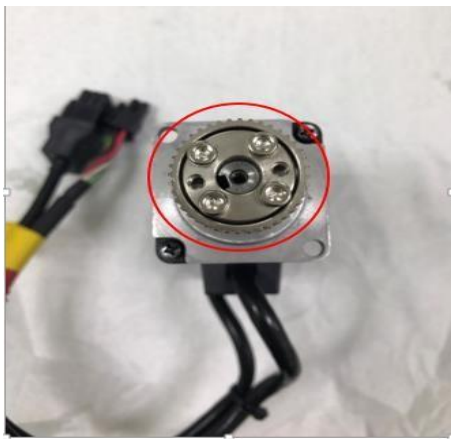
10	First, fit the motor belt onto the pulley attached to the motor lock.	

11	Then fit it onto the pulley attached to the sliding platform lock.	
12	Adjust the motor deflection plate to the desired tightness of the ring band, then tighten the screws.	
13	Use a belt tension meter to verify whether the belt tension is correct. **Check whether the belt ring is too loose or too tight; tighten the pulley.** !: When the belt tension is too loose, gear shifting may fail to function properly. When the band is too tight, it may cause deformation or damage to the band. The motor and its shaft may be damaged, accompanied by abnormal noises and screw misalignment. Please refer to [Appendix 1] for the table of tension values for the folding slide table ring belt.	
14	The motor assembly is completed by securing the belt pulley cover screws in place.	

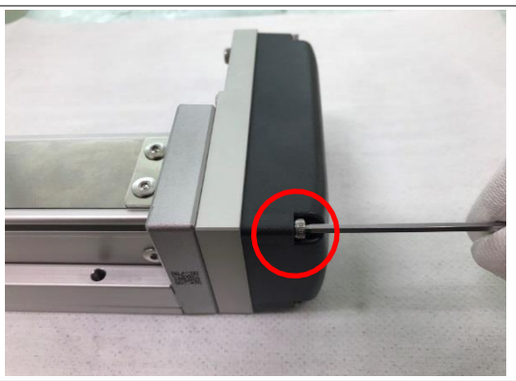
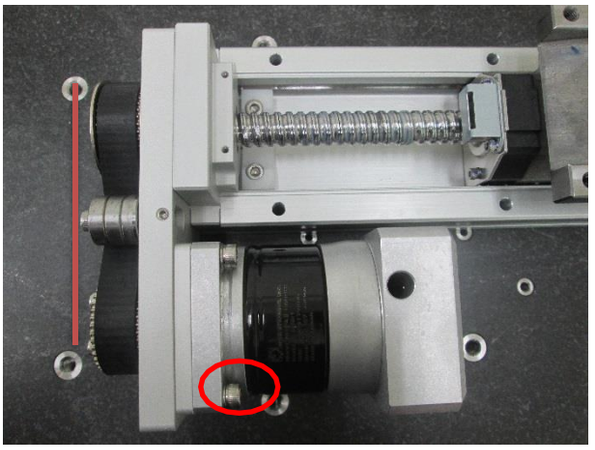
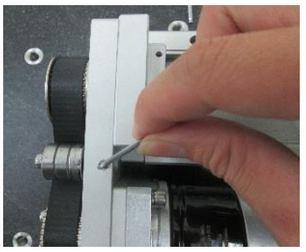
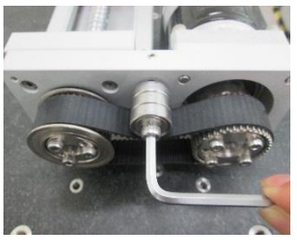
SDH Series Screw Mot-ors with Left/ Right Turn-ing Slides

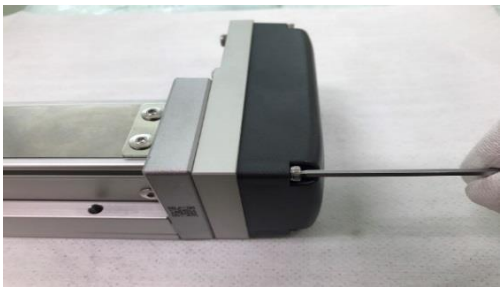
1	Remove the four screws on the motor's folding outer cover, then take off the motor outer cover.	
2	After installing the motor pulley, secure it by tightening the four screws on the pulley evenly. (Use a torque wrench to check the tightness.)	
3	After assembling the motor with the motor plate, tighten the motor screws to an average locking torque (use a torque wrench to verify the tightness). (Adjust the motor's output direction accord-ing to customer requirements) *Ensure that the motor pulley and the main body pulley are flush; they must not protrude beyond the main body pulley to avoid interference with the outer cover.	
4	Loosen the four mounting screws for the motor plate.	

5	When inserting the belt loop, verify that it is positioned inside the pulley (it must not deviate outside the pulley).	
6	Adjust the motor deflection plate to the desired belt tension and tighten the bolts to ensure the belt is neither too loose nor too tight.Secure the pulleys, then readjust using the tension gauge. If the belt is too loose, gear skipping may occur, preventing proper operation. When the belt tension band is too tight, it may cause deformation or damage to the belt tension band itself, as well as potential damage to the motor and its shaft. Additionally, abnormal noises and screw misalignment may occur. Use a belt tension gauge to verify whether the belt tension is correct. Refer to [Appendix 1] for the belt tension values table of the folding slide table.	
7	The lock is attached to the motor's folding outer cover; four screws complete the installation procedure for the motor and the ring belt.	
8	Tension gauge sound: Wave-type tension gauge.	

9	Method for removing the motor end pulley: Photo taken before disassembly *Remove the four screws at the end of the motor pulley belt.	
10	Method for removing the motor end pulley: Remove the 4 screws from the pulley. Remove the four screws at the end of the original pulley on the motor side and replace them with two new M3 hex screws [hole specifications].	
11	Method for removing the motor end pulley: Insert two M3 internal hex screws and remove the pulley using a locking mechanism.	

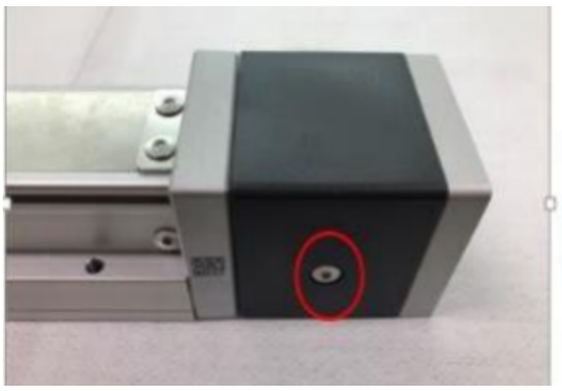
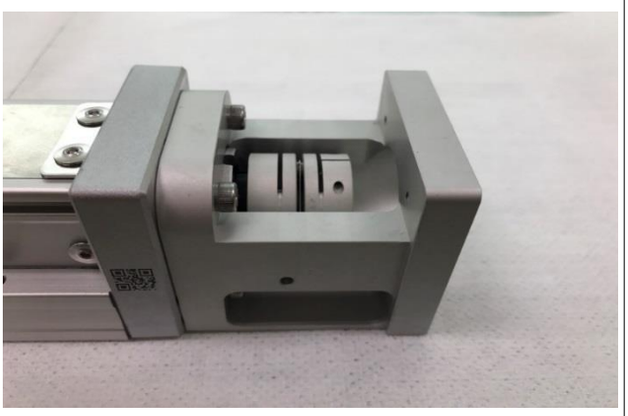
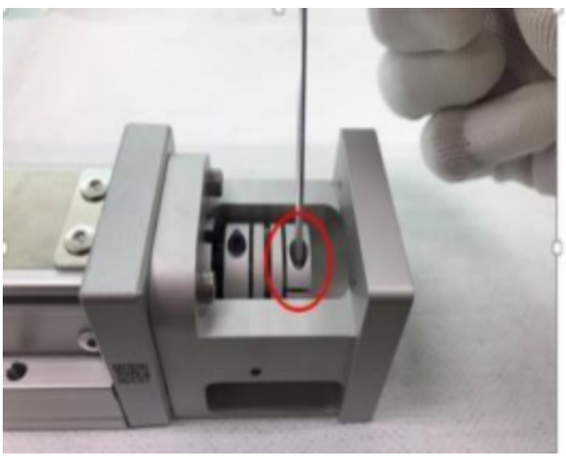
SDH screw motor left/ right-foldable slide table

1	Remove the four screws from the motor folding outer cover and detach the motor outer cover.	
2	After installing the motor pulley, tighten the four screws on the pulley evenly(use a torque wrench to check the tightness).	
3	After the motor is assembled with the motor plate, the motor screws are averaged and secured. (Use a torque wrench to check the tightness) (Adjust the motor output direction according to customer requirements) *Ensure that the motor pulley and the main body pulley are flush; the motor pulley must not extend beyond the main body pulley to avoid interference with the outer cover. Loosen the rudder wheel and insert the ring belt.	
4.	Use a hex key to turn and adjust the screw, setting the belt to an appropriate tension value. Once the tension value is determined, tighten the rudder wheel. For the tension value, please refer to the source. [Appendix 1] Table of tension values for the turning slide platform ring belt.	 

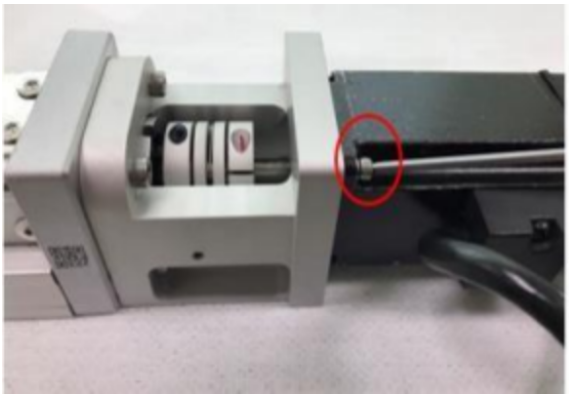
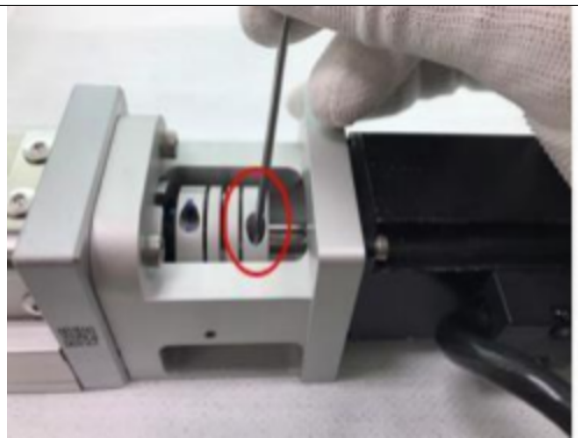
5	Motor cover lock ring.	

Motor Installation Model: SDH

Exterior screw motor slide table (BC)

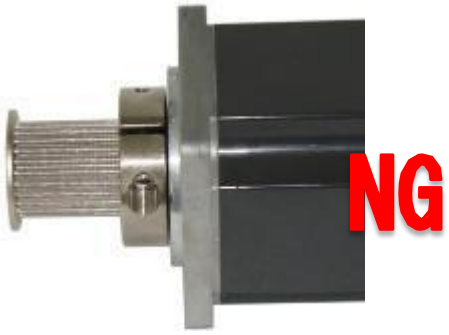
1	Figure [1]: Remove the two screws from the outer cover of the coupling.	
2	Figure [2] The outer cover of the coupling is removed.	
3	Motor installation instructions: Figure [1] Loosen the motor end screws of the coupling.	

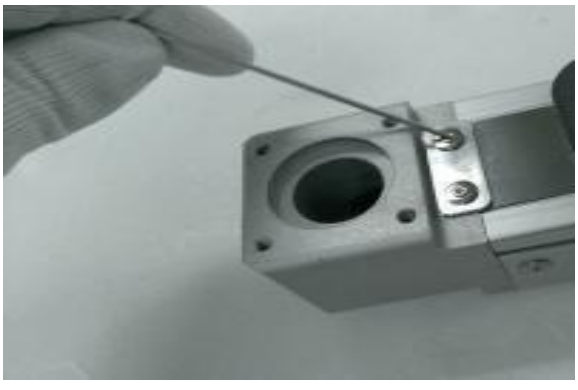
4	Motor installation instructions: Insert the motor into Figure [2].	

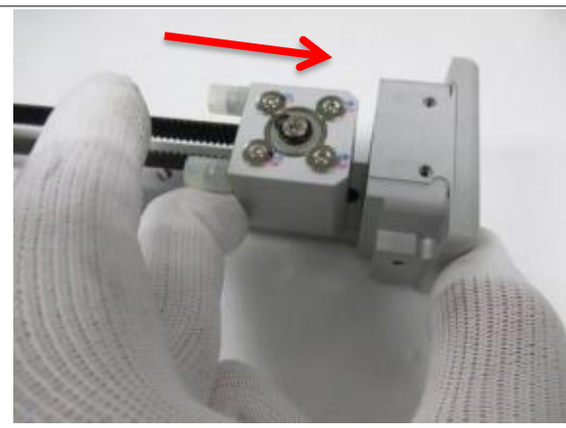
5	Figure [1] Diagonal locking screw for motor fixation. (Check tightness using a torque wrench.)	 [Question 1]
6	Figure [2] Lock the motor end coupling screws. (Use a torque wrench to check the tightness.)	 [↑ Run]
7	Motor installation instructions: The lock is attached to the coupling outer cover; install two screws to complete the motor installation procedure.	

4-4 Belt Adjustment

Belt adjustment and slide table motor assembly model:MSDM

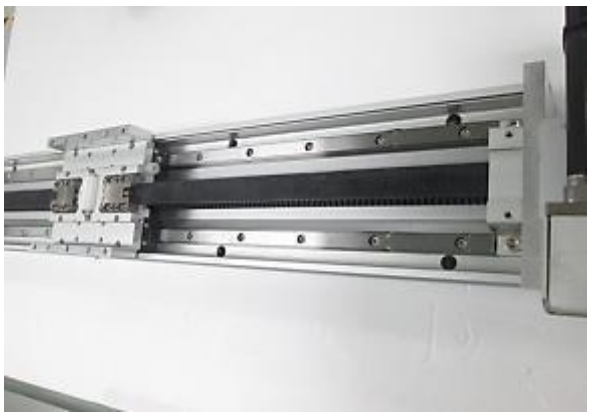
Order	Action Sequence	Pattern Description
1	The arrow in the image indicates the junction between the motor and its mounting bracket.	
2	Three clamped pulleys; the clamping grooves on both sides must be aligned and locked.	
3	Please note that a gap must be left between the pulley and the motor.	
4	The pulley and motor in the image do not have any gap between them; this is an incorrect schematic diagram.	

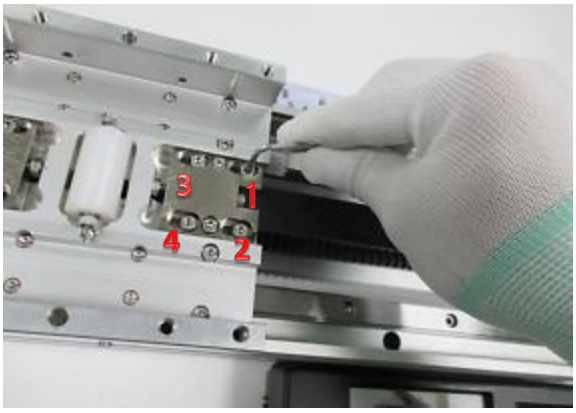
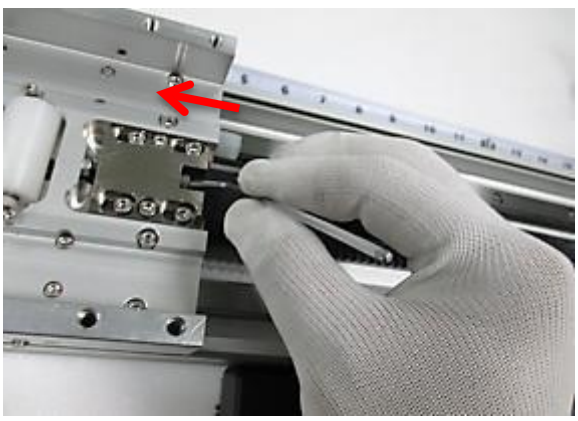
5	Lock the screws on both sides of the pulley evenly and tighten them firmly.	
6	Remove the two pressure plate screws and detach the steel strip pressure plate.	
7	Remove the two side cover screws and detach the side cover.	
8	Pass the pulley installed on the motor over the belt inside the motor housing, as shown in the figure!	

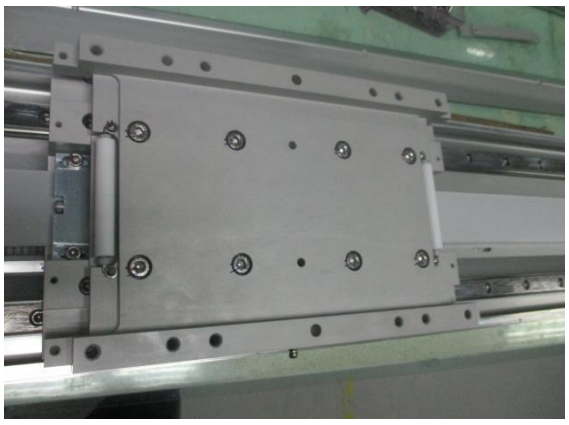
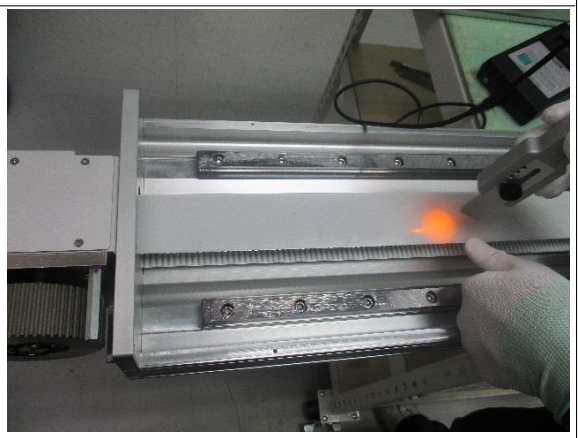
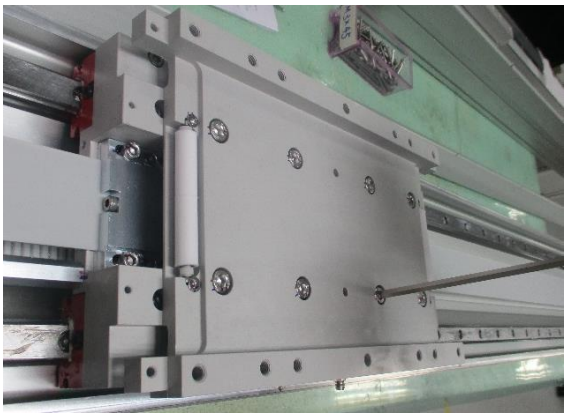
9	When locking the motor, pay attention to the motor cable outlet position. Lock the motor by following these steps: 1. As shown, first lock the screw in the lower left corner; do not tighten it completely. 2. Secondly, secure the screw in the upper right corner; do not tighten it excessively. 3. Re-tighten the diagonal screws and repeat action 1.2. 4. After completing the above operations and ensuring the motor lock is not tilted, tighten 2 to 4 motor screws.	
10	1. Before adjusting the belt, measure a fixed distance using a ruler. 2. Schematic diagram of belt tension meter testing.	
11	Loosen the screws of the pulley assembly behind the adjustment belt.	
12	The direction indicated by the red arrow is the tightening direction for adjusting the belt tension.	

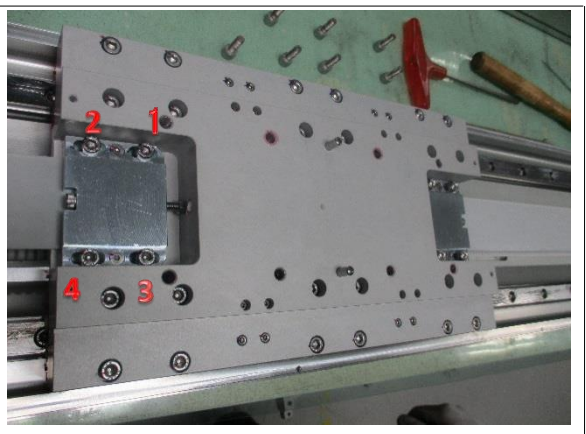
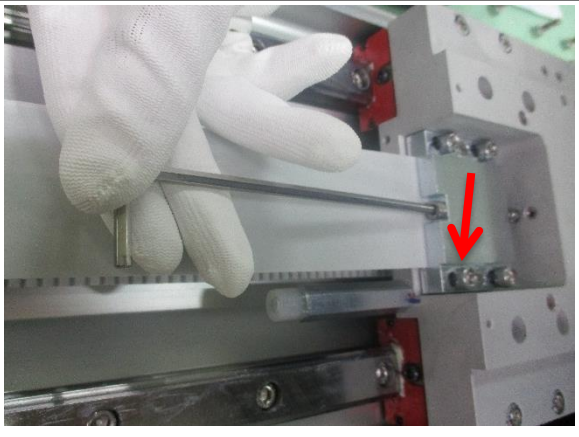
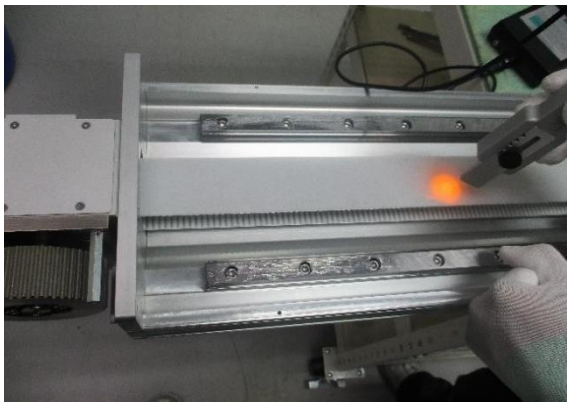
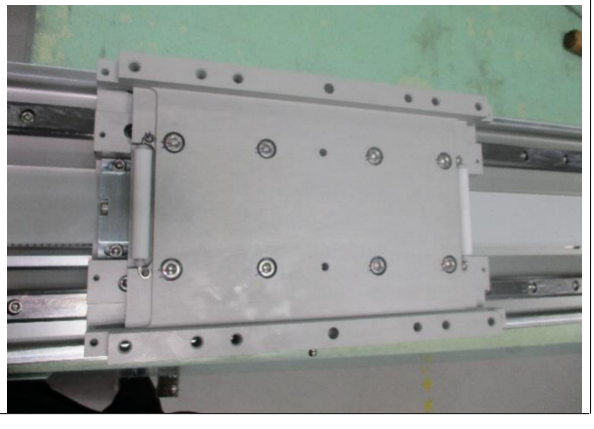
13	Perform the tension value test after completing the previous step. For the tension values, refer to [Appendix 2] The Open Belt Tension Values Table for Belt-Type Sliding Table.	
14	Lock the side cover.	
15	Lock the rebar strip pressure plate.	
16	Complete the diagram for the institution.	

Belt adjustment slide model: STM

Order	Action Sequence	Pattern Description
1	The ETB14 belt adjustment steps are as follows:	
2	The slide is pushed to the measurement distance.	
3	Then use a belt tension tester for testing.	

4	Loosen the four belt fixing screws for adjustment.	
5	Adjust the screw arrow direction to tighten.	
6	After completing the previous step, perform a tension value test.	
6	After attaching the cover lock to the body, the belt assembly is complete.	

Order	Action Sequence	Pattern Description
1	The ECB22 belt adjustment steps are as follows:	
2	The slide is pushed to the measurement distance.	
3	Then use a belt tension tester for testing.	
4	Loosen the 8 screws on the upper sliding seat to remove it.	

5	Use four belt fixing screws for adjustment.	
6	Turn the adjustment screw clockwise to tighten it.	
7	After completing the previous step, perform a strong force test.	
8	Once the upper sliding seat is securely locked, the belt assembly is complete.	

[Appendix 1] Table of Tension Values for the Turning Sliding Table Ring Belt

Model	Motor direction	Belt specifications	Belt width (mm)	Measurement span (mm)	Tension value (N)
ET(C)H5M	BR/BL/BM	2GT	6、12	58	12~17
ET(C)H6M	BR/BL	2GT	6、12	58	12~17
ET(C)H6M	BM	2GT	6、12	56	12~17
ET(C)H5M	BR/BL/BM	2GT	6、12	58	12~17
ET(C)H6M	BR/BL	2GT	6、12	58	12~17
ET(C)H6M	BM	2GT	6、12	56	12~17
ET(C)H10	BR	2GT	12	65	25~35
ET(C)H10	BL	2GT	12	107	25~35
ET(C)H10	BM	2GT	12	72	25~35
ET(C)H12	BR/BL	2GT	12	87	25~35
ET(C)H12	BM	2GT	12	75	25~35
ET(C)H10	BR	3GT	15	65	32~42
ET(C)H10	BL	3GT	15	107	32~42
ET(C)H10	BM	3GT	15	72	32~42
ET(C)H12	BR/BL	3GT	15	87	32~42
ET(C)H12	BM	3GT	15	75	32~42
ETH13	BR/BL	5GT	15	105	60~75
ETH13	BM	5GT	15	75	60~75
ET(C)H14	BR/BL	5GT	15	105	60~75
ET(C)H14	BM	5GT	15	75	60~75
ET(C)H17	BR/BL	5GT	20	132	122~137
ET(C)H17	BM	5GT	20	92	122~137
ET(C)H22	BR/BL	5GT	20	160	122~137
ET(C)H22	BM	5GT	20	110	122~137
CTH5	BR/BL/BM	2GT	6	54	12~17
CTH6	BR/BL	2GT	6	60	12~17
CTH6	BM	2GT	6	56	12~17
CTH10	BR/BL	2GT	6	70	12~17
CTH10	BM	2GT	6	107	12~17
CTH12	BR/BL	2GT	6	89	12~17
CTH12	BM	2GT	6	76	12~17
CTH13	BR/BL	2GT	6	105	12~17
CTH13	BM	2GT	6	78	12~17
ETB10	L、R(U、D)	5GT	15	68	46~60

ETB14	L、R(U、D)	3GT	25	72	46~60
ETB17-400W	L、R(U、D)	3GT	25	72	46~60

Model	Motor direct-ion	Belt specificati-ons	Belt width (mm)	Measurement span (mm)	Tension value (N)
ETB17-750W	L、R(U、D)	3GT	25	72	46~60
ETB22	L、R(U、D)	5GT	30	30	155~176
GTH4	BL/BR	2GT	9	50	12~17
GTH5	BL/BR	2GT	12	58	12~17
GTH8	BL/BR	3GT	15	80	32~42
GTH12	BL/BR	3GT	15	100	32~42
GTH12	BM	3GT	15	80	32~42
GTY4	BL/BR	2GT	9	54	12~17
GTY5	BL/BR	2GT	12	60	12~17
GTY8	BL/BR	3GT	15	80	32~42
GTY12	BL/BR	3GT	15	100	32~42
GTY12	BM	3GT	15	80	32~42
CY65	BM/BW	3GT	15	75	32~42
Dot printing machine		2GT	10	72	25~32
Dot printing machine		2GT	10	99	25~32
MK65	BL/BR	5GT	25	85	122~137
MK85	L、R(U、D)	8YU	25	110	125~155
MK110	BM	8YU	30	110	125~155

[Appendix 2] Open Belt Tension Value Table for Belt-Type Sliding Table

Model	Open Band Specification	Belt width (mm)	Measurement span (mm)	Tension value (N)
ET(C)B 5 ET(C)V 5	2GT	9	100	25-31
ET(C)B 6 ET(C)V 6	2GT	12	100	25-31
ET(C)B 10 ET(C)V 10	5(A)GT	15	500 Parameters can be changed as needed	111-127
ETB 14M/ETV 14 ECB(V) 14	5(A)GT	20	500 Parameters can be changed as needed	162-184
ETB 14M/ETV 14 ECB(V) 14	5(A)GT	22	500 Parameters can be changed as needed	178-203
ETB 17M/ETV 17 ECB(V) 17	5(A)GT	30	500 Parameters can be changed as needed	254-289
ETB 22M/ETV 22 ECB(V) 22	5(A)GT	50	500 Parameters can be changed as needed	442-500
MH65(M65M)	3GT	20	500 Parameters can be changed as needed	174-192
MH80(M80M)	3GT	30	500 Parameters can be changed as needed	227-252
M65	5GT	20	500 Parameters can be changed as needed	162-184
MK65	5AT	32	500 Parameters can be changed as needed	240-275
MK85	5AT	46	500 Parameters can be changed as needed	425-490
MK100	10AT	50	500 Parameters can be changed as needed	552-631

4-5 Body Installation

The installation procedure is as follows:

a) Confirm the hole dimensions and screw specifications (refer to the detailed specification document).

b) Remove the lower or upper cover.

c) Move the slider so that the screw hole beneath it is not blocked.

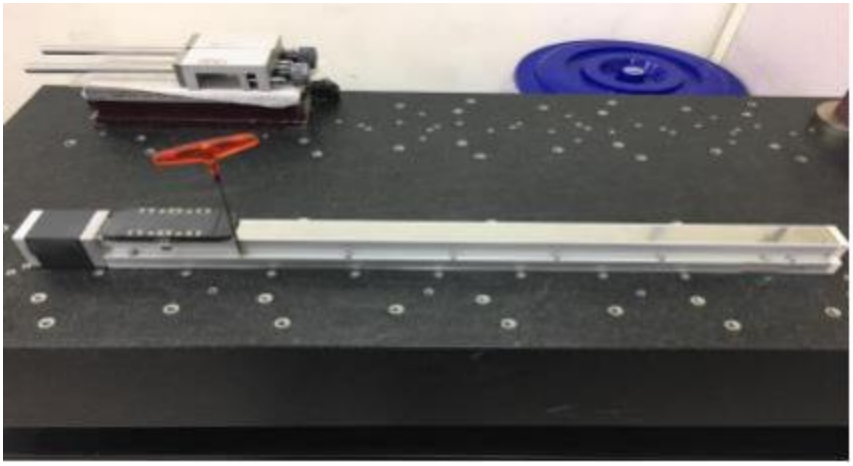
d) Install the body.

e) Install the side cover or top cover back onto the main body.

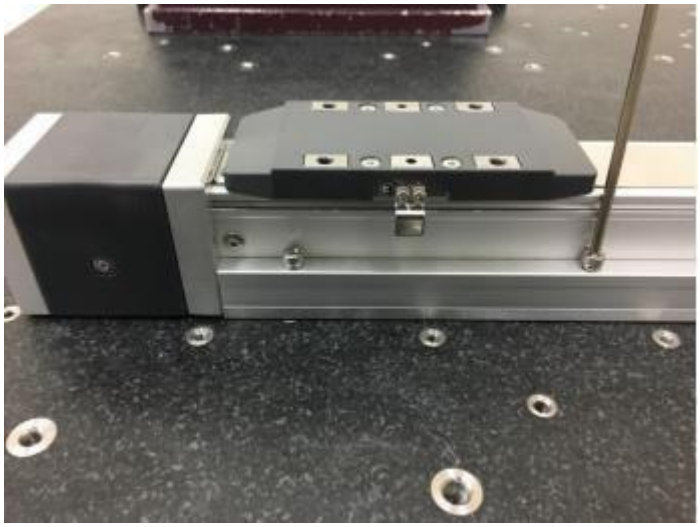
For the ECH5M and ECH6M models, the dust-proof steel strip must first be removed to prevent damage to the strip. (For removal instructions, refer to Section 5-3 "Replacing or Adjusting the Dust-Proof Steel Strip.")

SDH Body
Installation a)
Body

b) Lateral edge lock screws (on both sides)



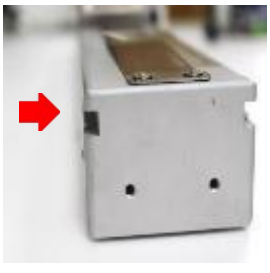
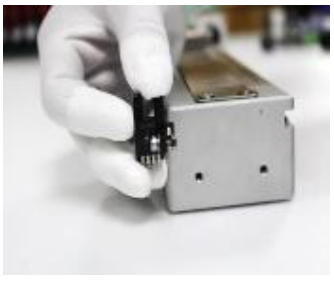
c Helix) The chain is tightly twisted (on both sides)



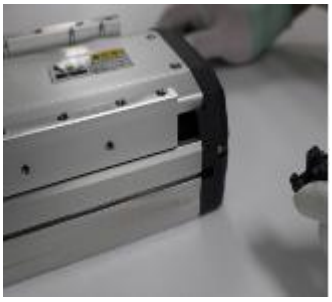
4-6 Sensor Installation

Sensor Installation
Model:

MSD screw-type slide platform with M-shaped rod

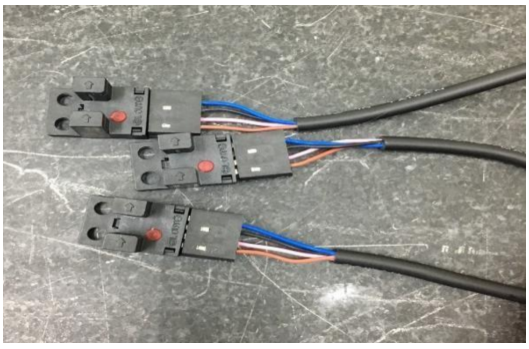
Order	Action Sequence	Pattern Description
1）	Place the slide table flat on a level surface.	
2）	Prepare the parts: ● SENSOR *1 ● M3*8L hexagonal screw: 2 pieces M3 nut*2 ● M3 Pinghua Company*2	
3）	1. First, insert the hexagonally threaded screw into the Pinghua screwdriver. 2. Reinsert into the sensor slot. 3. Then screw the nut onto the internal hex screw.	
4）	Grooves are present on both sides of the slide plate for inserting nuts.	
5）	Place the sensor into the sensing pad within the slide groove.	
6）	Adjust to the desired sensing position and secure it with a hex key to complete sensor assembly.	

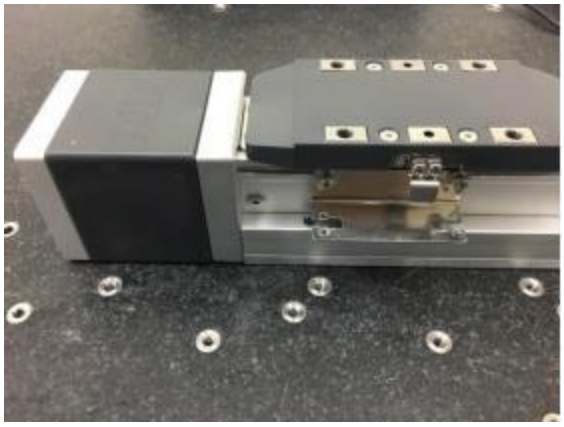
Sensor installation model: SDM screw-type slide table

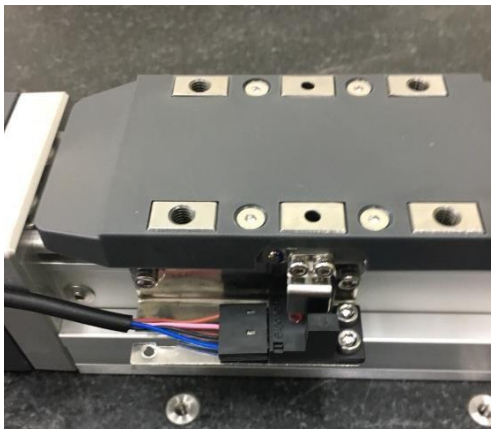
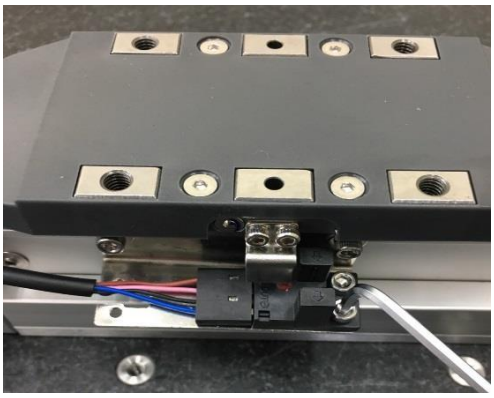
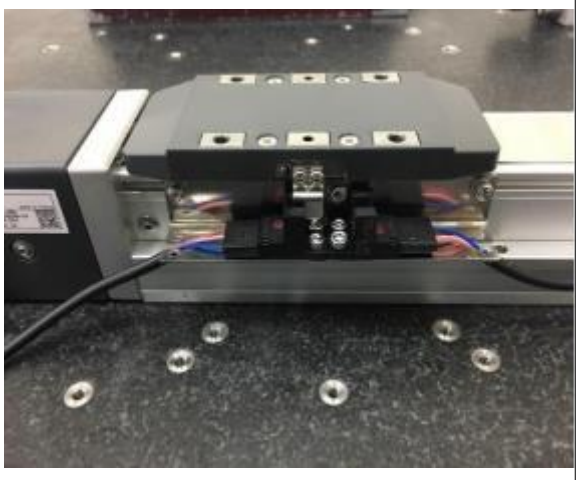
Order	Action Sequence	Pattern Description
1）	The installation steps for the ETH14 external sensor are as follows:	
2）	Preparation materials: ● SENSOR *1 ● M3*8L internal hex screw *2 M3nut *2 ● M3 Pinghua Company *2	
3）	4. First, insert the hexagonally threaded screw into the Pinghua screwdriver. 5. Reinsert into the sensor slot. 6. Then screw the nut onto the internal hex screw.	
4）	There are grooves on both sides of the slide platform for inserting nuts.	
5）	Place the sensor into the sensing plate end within the slide groove.	
6）	Adjust the sensor to the desired position and secure it with a hex key to complete the sensor assembly.	

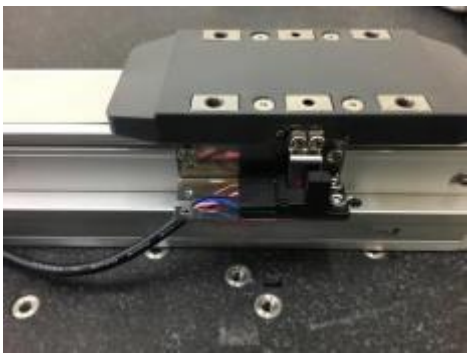
Sensor installation model:

SDH screw-type slide table

Order	Action Sequence	Pattern Description
1）	Sensor pack.	
2）	Sensor specifications.	
3）	The wire connects to the sensor connector.	

4)	The sensor mounting plate is secured with screws.	
5)	Insert from the seat end.	
6)	Move to the front.	

7）	After confirming the maximum positioning limit, secure the SENSORE mounting plate. With Sensor.	 
8）	Install the required origin position using the previous limit method.	

9)	As described in Method 8, the maximum position after locking.	
10)	Completed.	

5. Inspection and Maintenance

Performing regular inspections or maintenance procedures before operating this product ensures the safety and longevity of the electric slide rail. Regular inspections for this product include:

Check before and after daily operation.

Perform regular inspections and maintenance every three months.

Conduct regular inspections and maintenance every six months.

Perform annual regular inspections and maintenance.

For high-frequency use, shorten the regular inspection and maintenance intervals.

Check: ' Maintenance: '

5-1 Regular Inspection Schedule

Part Name	Every day Operation Before and After	Every three Month	Every six Month	Every year	Check the key areas for maintenance	Abnormal Handling
Power cable, Signal cable	●				●Check the power signal cable for any damage, breaks, or other abnormalities.	●If defective, replacement is required.
Screw, Bearing	●	●◎	●◎	●◎	●Check for any abnormal vibrations or noises. ◎Recommended lubricant: AFEP2 or NSK LG-2, a specialized screw raceway lubricant for cleanrooms.	●Check for any contamination; if found, remove it and then reapply lubricating oil. ●Check whether there is sufficient lubricating oil on the original part.
Dust-proof steel strip	●	●	●	●	●Check whether the steel strip is damaged. ●Check whether the steel strip is loose.	●Defective components that affect functionality must be replaced. ●If it loosens, readjust the tightening.
Sliding Track	●	●◎	●◎	●◎	●Is the guide rail screw loose? Please refer to Table 3 in the Appendix for the reference torque values for screws in each location. ●Is there any unusual noise when the slide seat moves? ◎Recommended lubricant: AFEP2 or NSK LG-2, a specialized screw raceway lubricant for cleanrooms.	●If it loosens, readjust the tightening. ●Check for any contamination; if found, remove it and then reapply lubricating oil. ●Check whether there is sufficient lubricating oil on the original part.
All screws		●	●	●	●Check for any looseness.	●If it loosens, readjust the tightening.

Sliding Seat	●	●	●◎	●◎	●Is there any abnormal noise during the slide seat movement? ◎Recommended lubricant: AFEP2 or NSK LG-2, a dust-proof screw guide lubricant specifically designed for cleanrooms.	●Check for contamination; if contamination is detected, remove it and then reapply lubricating oil. ●Check whether there is sufficient lubricating oil on the component.
Screw nut				●◎	◎Recommended lubricant: AFEP2 or NSK LG-2, a dust-proof screw guide lubricant specifically designed for cleanrooms.	

[Appendix 3] Reference Table of Screw Torque Values for Various Parts

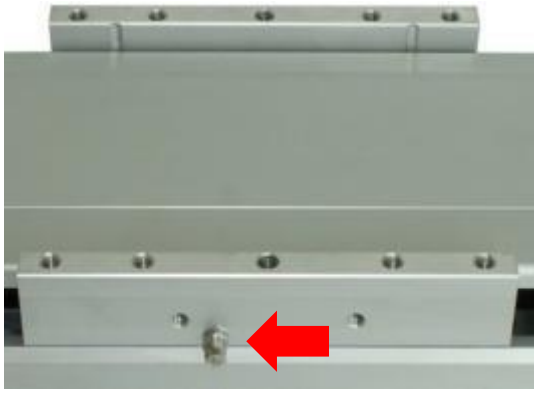
Screw diameter	Locking torque value (kgf • cm)	Locking torque value (N • m)
M3	15	1.5
M4	37	3.7
M5	72	7.2
M6	118	11.8
M8	295	29.5
M10	590	59.0

5-2 Add lubricating oil

Please ensure the power is turned off before starting work.

During regular maintenance, apply lubricating oil as follows.

For patent-type nozzle designs, a single oiling nozzle mounted on the sliding seat enables simultaneous lubrication and maintenance of both the nut and multiple slider assemblies.



For non-patented nozzle design models, please follow the steps below:

a) Please remove the top cover or side cover first.

B. Method for applying lubricating oil to the bolt rod (direct application)

Recommended lubricant: AFEP2 or NSK LG-2 screw raceway lubricant specifically designed for cleanrooms.

c) Method of applying lubricating oil to the guide rail (direct application).

Recommended lubricant: AFEP2 or NSK LG-2 screw raceway lubricant specifically designed for cleanrooms.

d) Sliding slider lubrication method.

Method for adding lubricating oil to the E-bolt nut.

f) Instructions for Oiling Maintenance of Tap Nozzles:

After Precisely Aligning the Pointed Oil Nozzle With the Oil Nozzles on Both Sides of the Slide Seat, Insert the Dust-Free Oil.

Oil applicator tool – Oil nozzle specifications: Snake-belly type butter gun; Model: CH500-400CC

GTH Series Oil Injection Head: TOYO 291708-00007

5-3 Replace or adjust the dust-proof steel belt

The dust-proof steel strip should be replaced as follows; please ensure the power is turned off before proceeding with the work:

a) Loosen and remove the four screws on the slide cover, then take off the slide cover.

b) Remove the four screws that secure the dust-proof steel belt: two on the opposite side of the motor and two on the motor side.

c) Remove the dust-proof steel strip and the steel strip pressure plate.

d) After removing the steel strip from the guide rail, install a new steel strip.

e) In the next step, reinstall the steel belt and the slide seat cover. Since the steel belt requires adjustment, do not tighten the screws securing both ends of the belt initially.

f) After installing the sliding seat cover, tighten the steel strap. Hold the steel strap with your fingers and then secure the four screws that fix the steel strap to ensure it does not loosen. Note that applying excessive force when pulling the steel strap may cause it to deform or warp.

It may take several attempts to tighten the steel strip.

Up Movement

During prolonged operation, the dust-proof steel belt may elongate and deform, requiring adjustment. The steps are as follows: Ensure the power supply is turned off before starting work.

a) Loosen but do not remove the four screws that secure the dust-proof steel strap.

b) Hold the steel strap with your fingers and then tighten the four screws that secure it to ensure the strap does not loosen. Note that applying excessive force when pulling the strap may cause it to deform or warp. Refer to the instructions in (5-3f).

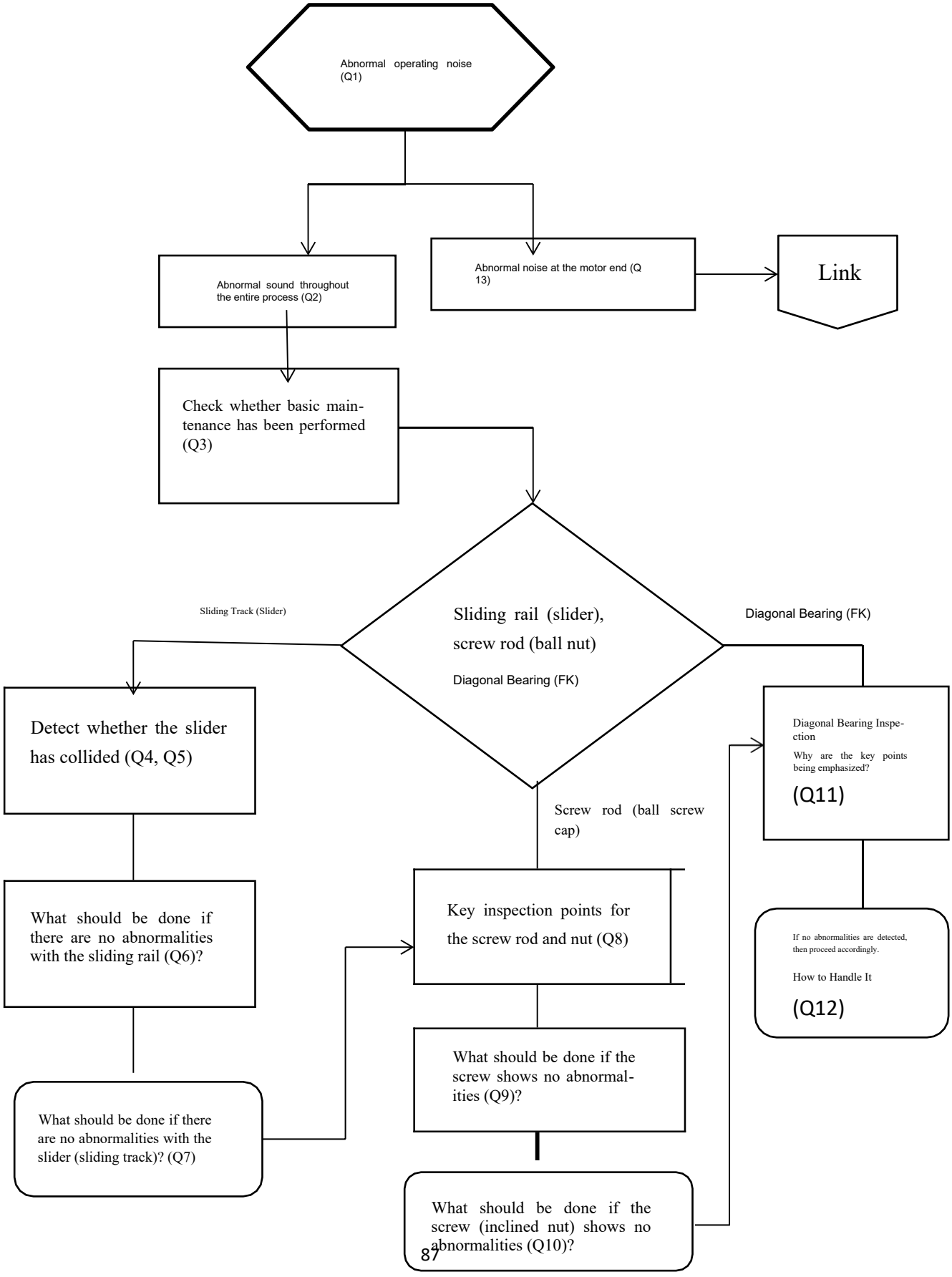
5-4 Consumables

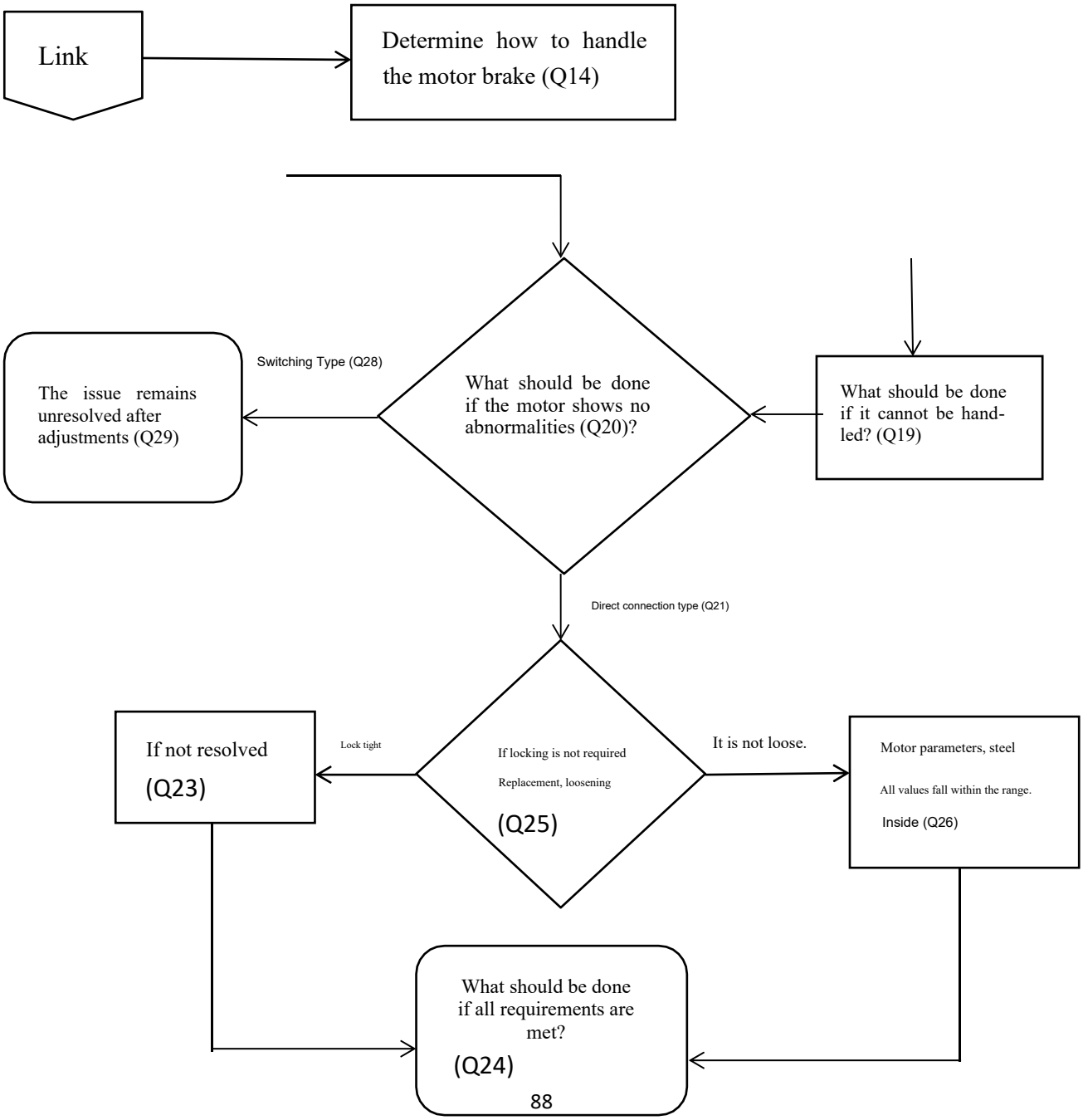
Prolonged operation of the electric slide table may cause wear or degradation of certain components. During regular maintenance inspections, verify the condition of the following parts and determine whether replacement is required.

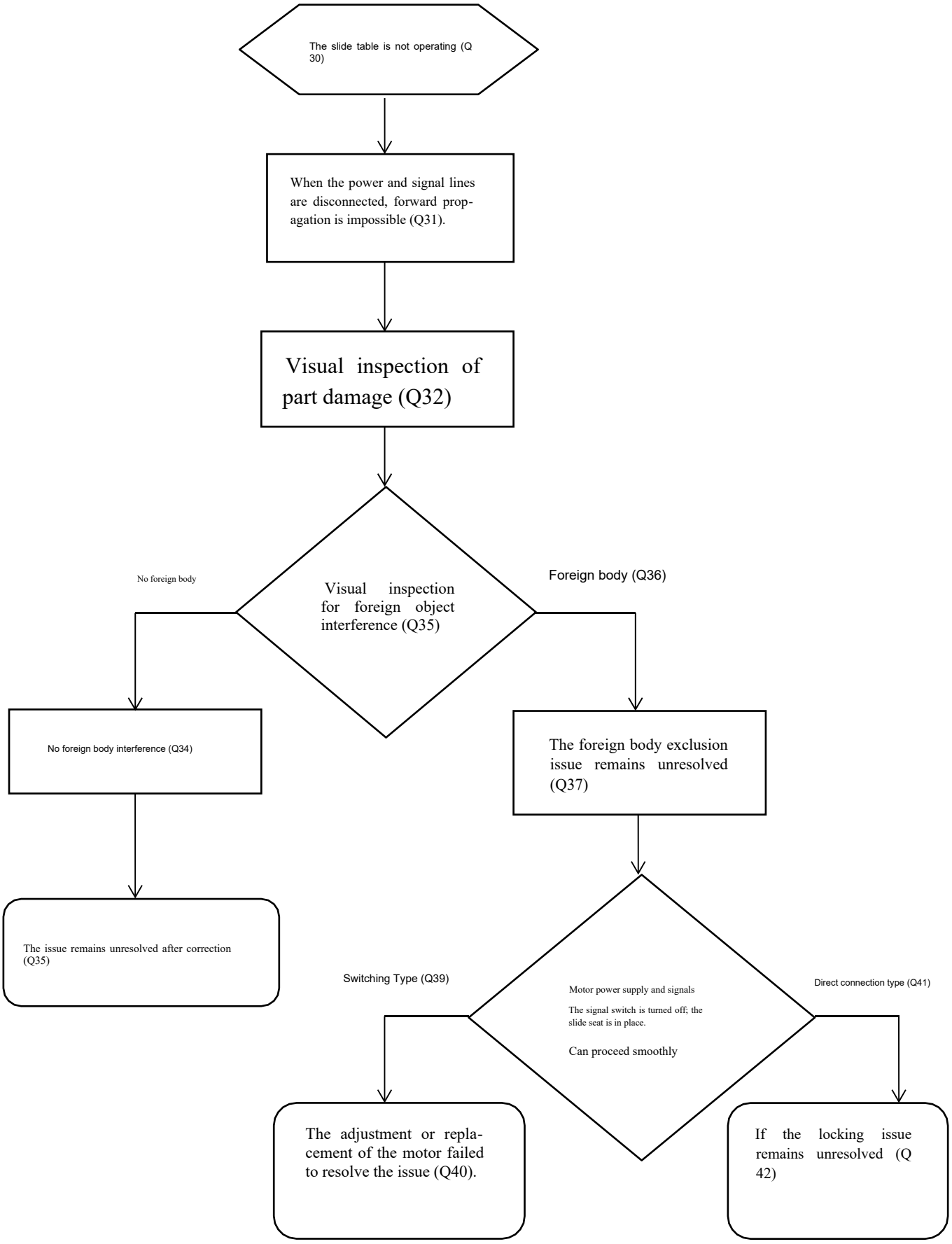
Part Name	The following condition requires replacement
Sensor	Already inactive and non-functional
Dust-proof steel strip	Visual inspection revealed excessive stretching deformation and damage.
Belt	Fracture with surrounding tearing.

6. Problem Diagnosis

When abnormal operating noise occurs:




Link
Determine how to handle the motor brake (Q14)
What should be done if the motor shows no abnormalities (Q20)?
Switching Type (Q28)
The issue remains unresolved after adjustments (Q29)
What should be done if it cannot be hand-led? (Q19)
Direct connection type (Q21)
If locking is not required
Replacement, loosening
(Q25)
Lock tight
If not resolved
(Q23)
It is not loose.
Motor parameters, steel
All values fall within the range.
Inside (Q26)
What should be done if all requirements are met?
(Q24)


The slide table is not operating (Q 30)
When the power and signal lines are disconnected, forward propagation is impossible (Q31).
Visual inspection of part damage (Q32)
Visual inspection for foreign object interference (Q35)
No foreign body
Foreign body (Q36)
No foreign body interference (Q34)
The issue remains unresolved after correction (Q35)
The foreign body exclusion issue remains unresolved (Q37)
Motor power supply and signals
The signal switch is turned off; the slide seat is in place.
Can proceed smoothly
Switching Type (Q39)
Direct connection type (Q41)
The adjustment or replacement of the motor failed to resolve the issue (Q40).
If the locking issue remains unresolved (Q 42)

Troubleshooting:

Q1: What should be done if abnormal noises occur during machine operation, or if the machine fails to operate?!

A: First determine whether there is an abnormal noise throughout the entire process (Proceed to Q2) or an abnormal noise at the motor end (Proceed to Q13); if the vehicle cannot operate, proceed to Q 30.

Q2: What should be done if it is determined to be persistent abnormal sounds throughout the entire process?!

A: Check whether basic maintenance has been performed.

Q3: What are the key points of basic maintenance?!

A: Sliding rail (sliding block) screw> ball nut> tapered bearing (FK).

Q4: What should be done if an abnormality is detected in the slider?

A First: Check for any collision between the guide rail and the slider.

Q5: What should be done if the slider does not collide!?

A: Check whether the screws are properly tightened; if so, verify whether the markings are displaced.

Q6: What should be done if the slide rail shows no abnormalities?!

A: Check Whether the Inner Ball of the Slider Is Damaged.

Q7: What should be done if the slider shows no abnormalities?!

A: Check whether the screw (ball nut) is abnormal.

Q8 Screw: Why are the inspection priorities for the shank and ball nut so critical?!

A First: Inspect the screw for rust or surface scratches; refer to Q9 for the ball nut.

Q9: What should be done if no abnormalities are detected in the screw?!

A: Check whether the ball inside the ball nut is damaged; if undamaged, verify whether the marking line has shifted.

Q10: What should be done if the screw (ball nut) shows no abnormalities?!

A: Check for Abnormalities in the Tapered Bearing (FK); the Key Inspection Points for the FK Are the Same as Those for the Tapered Bearing.

Q11: Why are the key inspection points for tapered bearings?

A First: Inspect the tapered journal bearing for any retained foreign objects; if no foreign objects are present, check whether the inner balls are damaged.

Q12: What should be done if the tapered bearing shows no abnormalities?!

A First: Check for any installation misalignment and ensure the screws are properly tightened. If no issues are found, inspect the inner beads for damage.

Abnormal Noise at the Motor End:

Q13: What should be done if there is an abnormal noise at the motor end?!

A: Check whether the motor brake is in use.

Q14: What should be done if it is confirmed that the motor is braking?!

A: Check whether the brake cable is disconnected or the brake switch is off.

Q15: Is the slide platform model straight-connected or folded?!

A: Go directly to Q16; turn to Q17.

Q16: Check whether the coupling is producing any abnormal noises!?

A: Proceed to Q18 if no abnormal sounds are detected.

Q17: What should be done if the motor belt is properly adjusted but issues still persist?!

A: Confirm based on the actual usage conditions on-site whether it complies with the usage specifications.Q18: Building on the previous question, what should be done if it complies with the usage specifications?

A: Contact the motor driver manufacturer and request their assistance in resolving the issue.

Q19: Answer: Regarding the previous question, what should be done if the manufacturer is unable to handle it?!

A: The motor is idling; confirm that the motor is functioning normally.

Q20: What should be done if it's not the brake motor?!

A: Is it the motor-direct connection type (to Q21), or the motor-branching type (to Q 28)?

Q21: How should the motor-direct-connected type be handled?!

A: Check whether the coupling is loose.Q22: What should be done if the coupling is loose?!

A: Lock securely; if the lock is not tight, replace it (not loose) (refer to Q25).

Q23: What should be done if the above issues remain unresolved?!

A: Verify compliance with usage specifications based on the actual site conditions.

Q24: What should be done if all usage specifications are met?!

A: Contact the drive manufacturer and request their assistance in resolving the issue; the problem remains unresolved (see Q18).

Q25: What should be done if the coupling is not loose?!

A Confirmation: Set motor parameters and adjust the stiffness value.

Q26: What should be done if both the motor parameters and the stiffness value fall within the specified range?!

A: Verify compliance with usage specifications based on the actual site conditions.

Q27: What should be done if all usage specifications are met?!

A: Contact the motor manufacturer and request their assistance in resolving the issue; the problem remains unresolved (see Q18).

Q28: What should be done if it is determined to be a motor-fold type?!

A: Check whether the motor belt is too loose or too tight; ensure the pulley is securely locked, then readjust according to the tension gauge.

Q29: What should be done if the issue remains unresolved after adjustments?

A: Unresolvable (go to Q18).

The Slide Table Is Not Operating:

Q30: What should you do if the slide platform stops working?!

A: Check whether the slide seat moves smoothly when the motor power cable and signal cable are disconnected (refer to Q42).

Q31: What should be done if the slide seat cannot move smoothly when the motor power cable and signal cable are disconnected?

A Objective: Inspect the parts for damage.

Q32: What should be done if a part is visually inspected and found damaged?!

ARequest: Chief Officer, follow-up operations.

Q33: What should be done if a visual inspection of the part shows no damage?!

A Objective: Inspect for foreign body interference during visual examination; if interference is present (Proceed to Q36).

Q34: What should be done if there is no foreign object interference?!

A: Correction Slider and Slider Base.

Q35: What should be done if the correction fails to resolve the issue?!

A: Corrective ball nut; the issue cannot be resolved (see Q32).

Q36: What should be done if visual inspection reveals foreign body interference?!

A: Remove interfering foreign objects.

Q37: What should be done if removing the foreign object fails to resolve the issue?!

A: Check whether the part is damaged and replace it.

Q38: What should be done if the slide seat moves smoothly when the motor power cable is disconnected from the signal?

A Objective: Visual inspection determines whether the motor is of the folded type (going to Q39) or the directly connected type (going to Q41).

Q39: What should be done if the motor is of a folding type?!

A mode: Replace the motor belt entirely or interchange them, then connect directly (to Q41).

Q40: What should be done if adjusting or replacing the motor belt fails to resolve the issue?!

A: After removing the motor, test whether the motor can operate normally separately.Q41: What should be done for the direct-drive motor type?!

A. Request: Tighten the coupling.

Q42: What should be done if locking fails to resolve the issue?!

A: After Removing the Motor, Test It Separately to Ensure It Operates Normally.

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