KYOKUTOH

First Edition 2017.11.28

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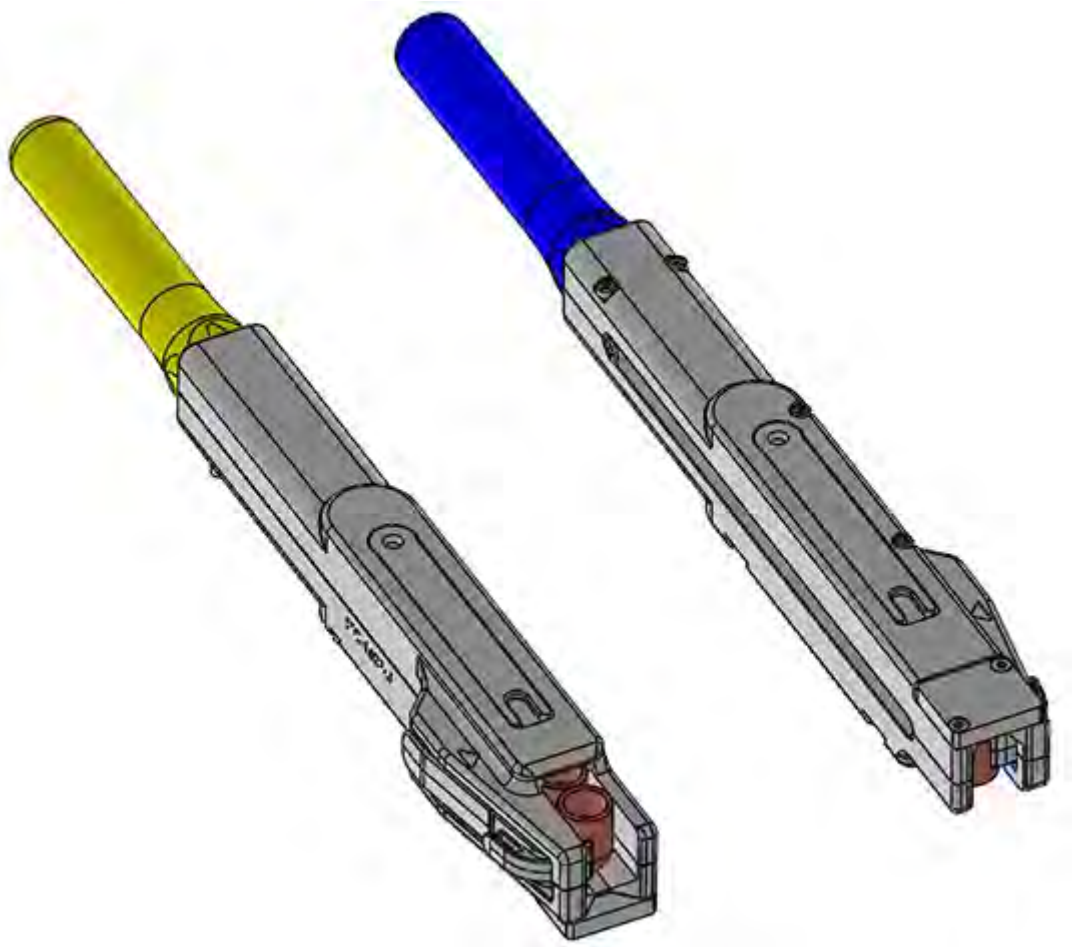
STC (Straight Tip Cartridge)

STC-****U/STC-****L

Instruction Manual

Please read this instruction manual carefully
before operating this unit and use our product correctly.
After reading this instruction manual, be sure to keep it in a place where a person
who uses or manages the equipment can check it at any time.



KYOKUTOH CO.,LTD.

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1. Safety Precautions

■Please read ″Safety Precautions″ carefully before using, and use our product correctly.

This product is a device where a cap tip is inserted.
Please do not use it for any purpose other than its intended use. Our company does not bear any responsibility with respect to failures, repairs, accidents, or other problems when using our product outside of its intended use. Please understand this point.

■Regarding signs

″Safety Precautions″ provided in this instruction manual to prevent risks and obstacles for you and other people in advance is divided into ″Warning″ and ″Caution″ for information.
Since both are important contents concerning safety, please be sure to observe them.

⚠ Warning	It indicates contents informing possibilities of death or serious injury in case of incorrect handling.
⚠ Caution	It indicates contents informing possibilities of injury due to handling error or occurrence of material damages.

■Examples of Signs

Types of contents to be observed are explained by classification with graphical symbols.
(Below are examples of graphical symbols)

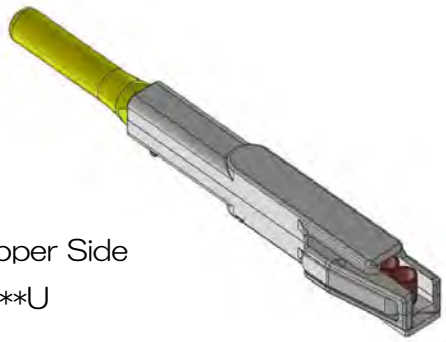
	This symbol indicates operations that should not be done.
	This symbol indicates operation that should be done.

Handling precautions	
 Never disassemble or modify. ● **It may cause injury or operation failure.**	 Do not insert fingers or hands during operation. ● **Injury may occur due to getting sucked in or caught.**
 Please do not sprinkle a large amount of water. ● **Rush may occur to cause operation failure.**	 Please do not use chlorine-based or acidic cleaner for cleaning the main body. ● **Toxic gas generated from the cleaner may harm your health.**
 Contamination on the main body must be removed regularly. ● **If contamination is accumulated, it may cause operation failure.**	 When using alcohol, paint thinner, or volatile lubricant for cleaning the main body, please wipe it off well. ● **When spatter is accumulated on volatile lubricant, it may cause ignition.**

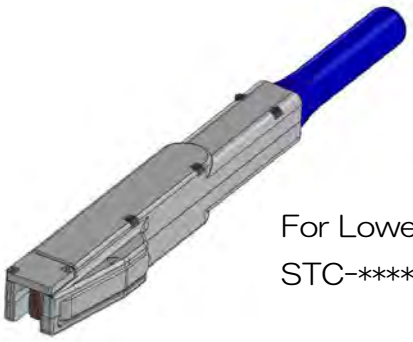
2. Confirmation and Precautions Before Operation

1) This product is used when mounting cap tip with robot gun.

2) Upper and lower cartridges can be distinguished by color.
Generally, "yellow is for the upper side" and "blue for the lower side".



For Upper Side
STC-****U



For Lower Side
STC-****L

3) Please use unused cap tip for loading.
If scratches or contaminations are prominent on used caps or outer tapers, operation failure may occur.
※The maximum number of loading are for φ16 → 12pcs /for φ13 → 14pcs /for φ19, 20 → 10pcs.

4) Installation place must be where spatter and cooling water do not directly fall down as much as possible.

5) Remove dust or foreign substances from the cartridge when they are caught in the cartridge. When cleaning inside, please disassemble.
(Please refer to 7-2. Cartridge Disassembly Procedure)

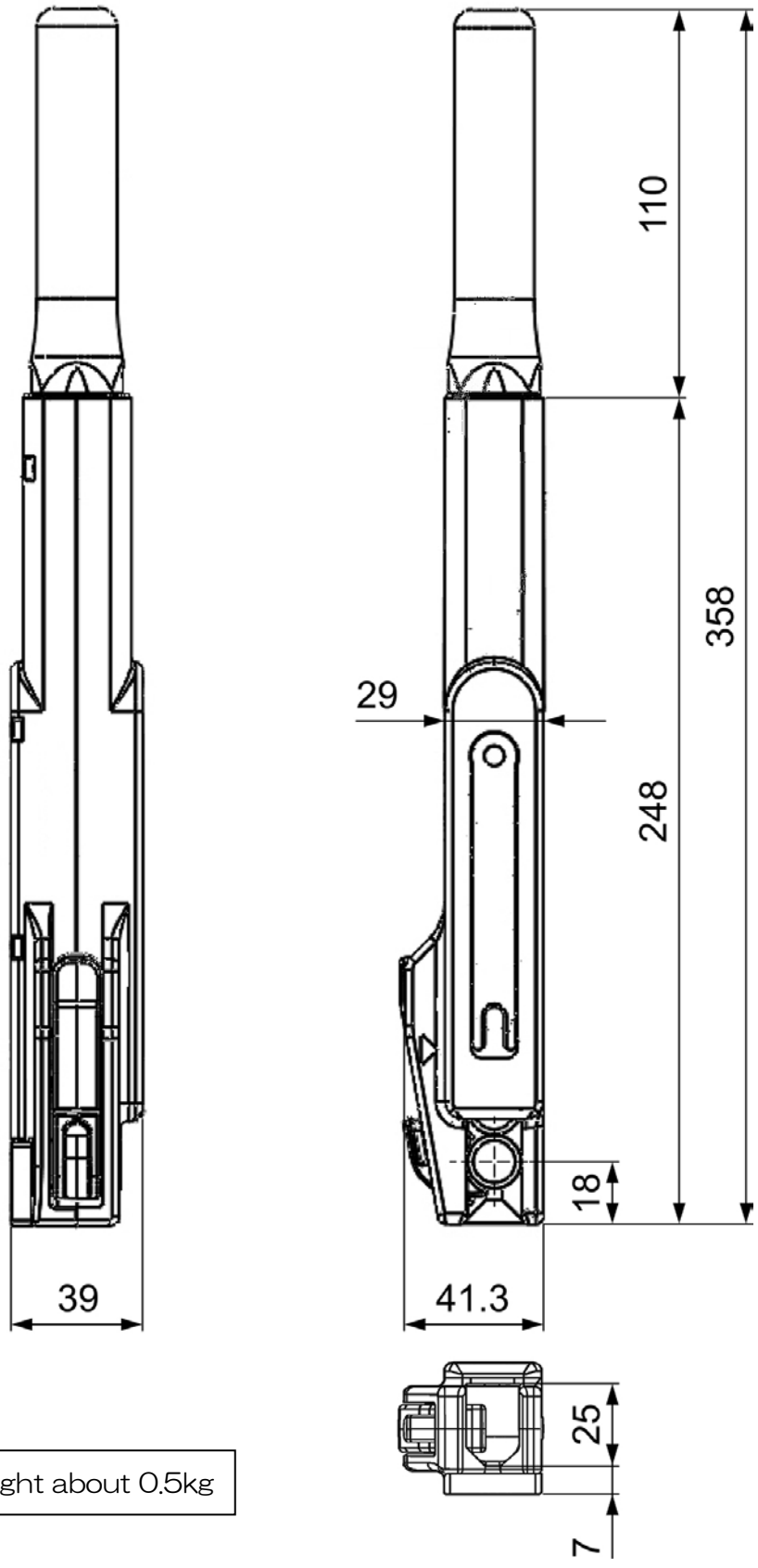
6) Please make sure that the cartridge is securely fastened before use.
Also, make sure that the cartridge model being used is correct.

7) Please make sure that the cap tip is loaded in the cartridge, or the cap tip is used correctly.

8) During operation, set the applied gun pressure within **120kgf-150kgf**.
※If **150kgf** or more is used, the product may be damaged.
※If **120kgf** or less is used, the tip may not be set on a shank.

9) Do not drop this product.
※This product could be broken if it is dropped or hit since it is resin.

3. External Dimension Diagram



Weight about 0.5kg

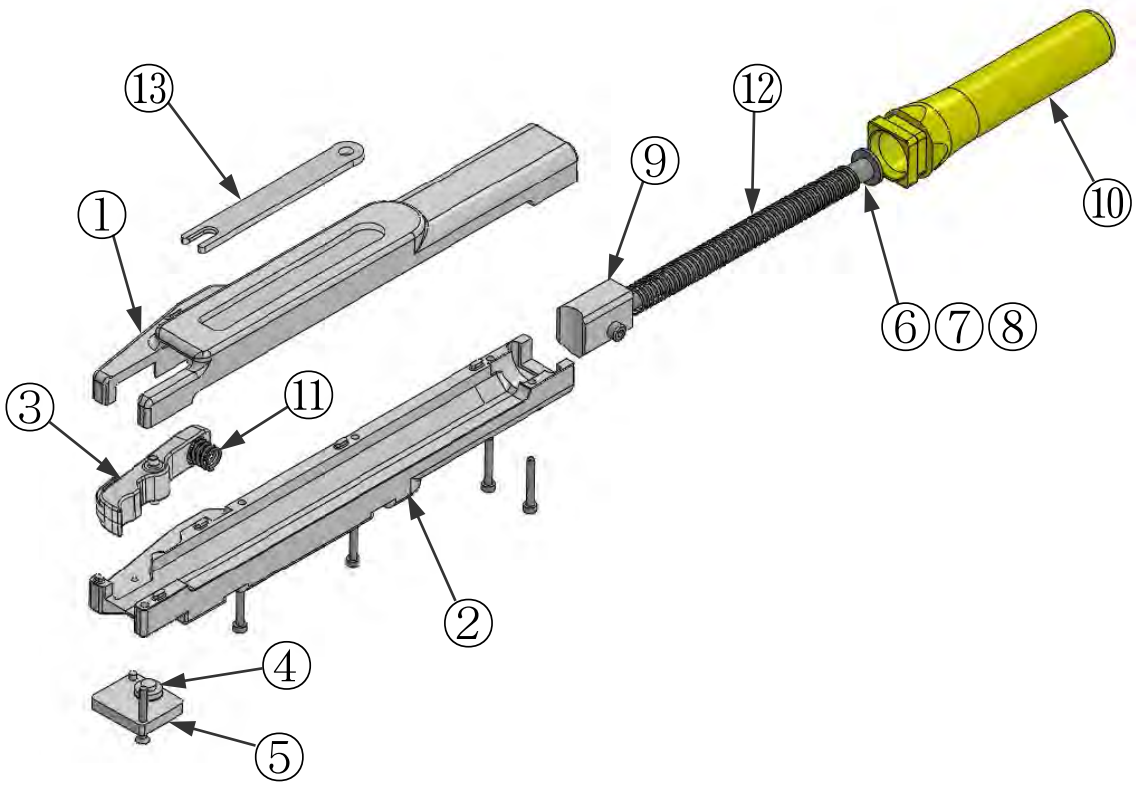
4. Name of Each Part

< Straight Tip Cartridge (STC-****U or L) >

For φ13-20L→1320
For φ16-23L→1623
For φ19-25L→1925
For φ20-25L→2025

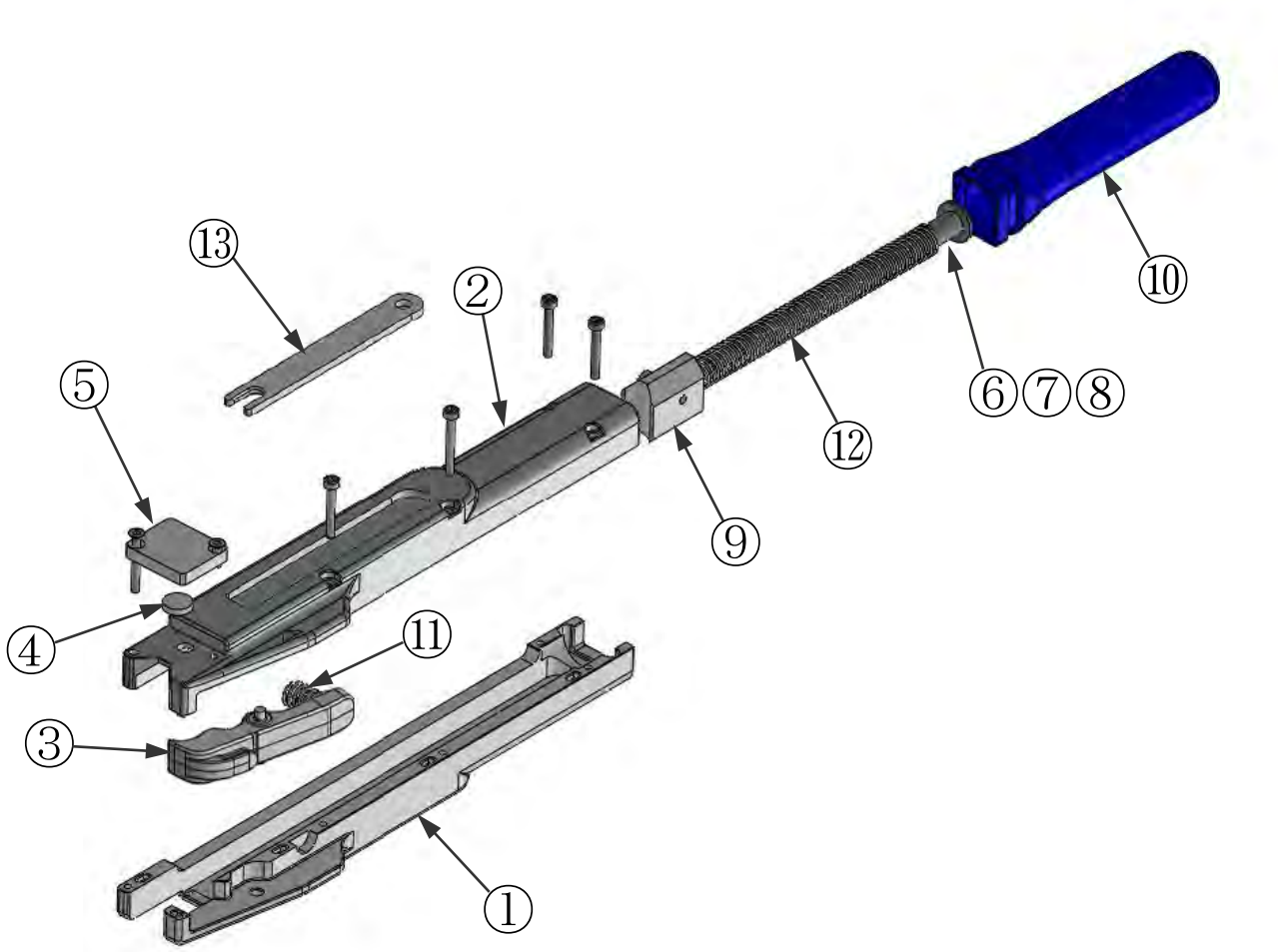
1) STC-1623U"For Upper Side : 6-8R (φ16) 23L"

No.	Name	Model	QTY
1	Vertical Magazine φ16 Upper Side No Key	STC-BD-16-UP-EXB	1
2	Vertical Magazine φ16 Lower Side with Key	STC-BD-16-23-DWKY	1
3	Picker for φ16	STC-ALDC-PC1692	1
4	Pressure Pin	STC-PP6-L2	1
5	Pressure Plate	STC-PPS-01-001	1
6	Telescopic Bar 1	STC-TSP-01-001	1
7	Telescopic Bar 2	STC-TSP-02-001	1
8	Telescopic Bar 3	STC-TSP-03-001	1
9	Tip Push φ16	STC-PC16-01-001	1
10	Telesco Cover	STC-TSC-01-001-U-INS	1
11	Spring	11-1041	1
12	Spring	SUS 0.8*9.7_1D*122n*124N*450H	1
13	Extension bar	STC-EXB-01-001	1



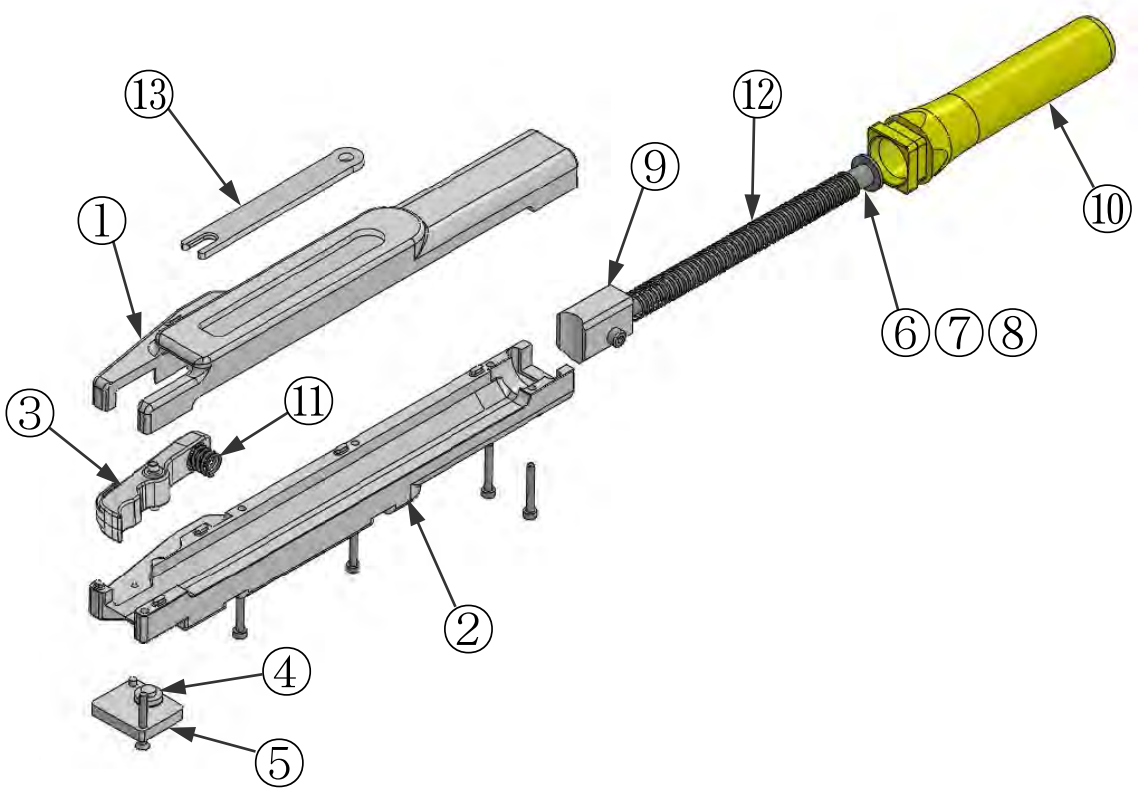
2) STC-1623L″For Lower Side : 6-8R (ϕ16) 23L″

No.	Name	Model	QTY
1	Vertical Magazine ϕ16 Upper Side with Key	STC-BD-16-UPKY	1
2	Vertical Magazine ϕ16 Lower Side No Key	STC-BD-16-23-DW-EXB	1
3	Picker for ϕ16	STC-ALDC-PC1692	1
4	Pressure Pin 6-2	STC-PP6-L2	1
5	Pressure Plate	STC-PPS-01-001	1
6	Telescopic Bar 1	STC-TSP-01-001	1
7	Telescopic Bar 2	STC-TSP-02-001	1
8	Telescopic Bar 3	STC-TSP-03-001	1
9	Tip Push ϕ16	STC-PC16-01-001	1
10	Telesco Cover	STC-TSC-01-001-L-INS	1
11	Spring	11-1041	1
12	Spring	SUS 0.8*9.7_1D*122n*124N*450H	1
13	Extension bar	STC-EXB-01-001	1



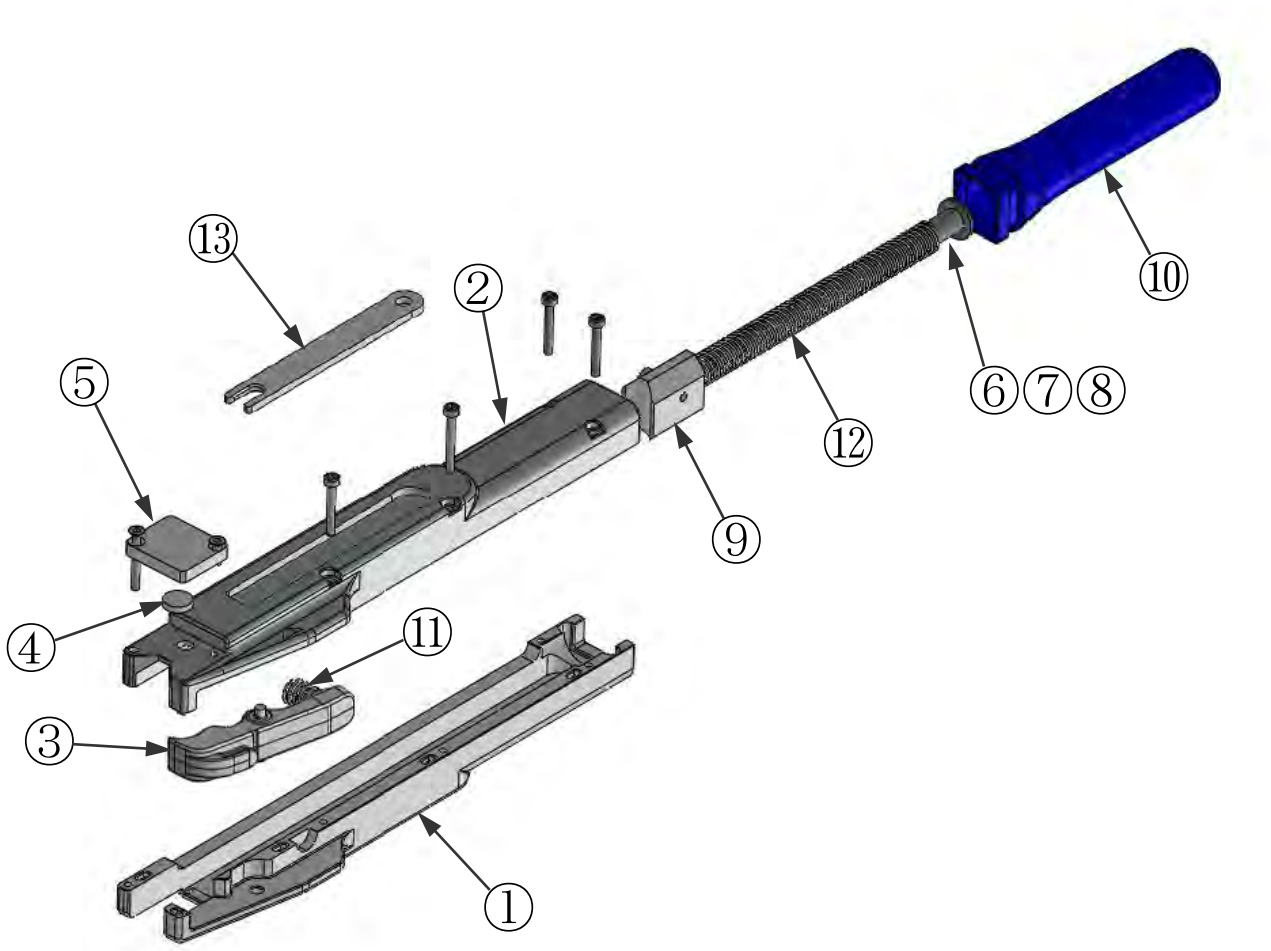
3) STC-1320U"For Upper Side : 6-6.5R (ϕ13) 20L"

No.	Name	Model	QTY
1	Vertical Magazine ϕ13 Upper Side No Key	STC-BD-13-UP-EXB	1
2	Vertical Magazine ϕ13 Lower Side with Key	STC-BD-13-20-DWKY	1
3	Picker for ϕ13	STC-ALDC-PC13E	1
4	Pressure Pin	STC-PP6-L5	1
5	Pressure Plate	STC-PPS-01-001	1
6	Telescopic Bar 1	STC-TSP-01-001	1
7	Telescopic Bar 2	STC-TSP-02-001	1
8	Telescopic Bar 3	STC-TSP-03-001	1
9	Tip Push ϕ13	STC-PC13-01-001	1
10	Telesco Cover	STC-TSC-01-001-U-INS	1
11	Spring	11-1041	1
12	Spring	SUS 0.8*9.7_1D*122n*124N*450H	1
13	Extension bar	STC-EXB-01-001	1



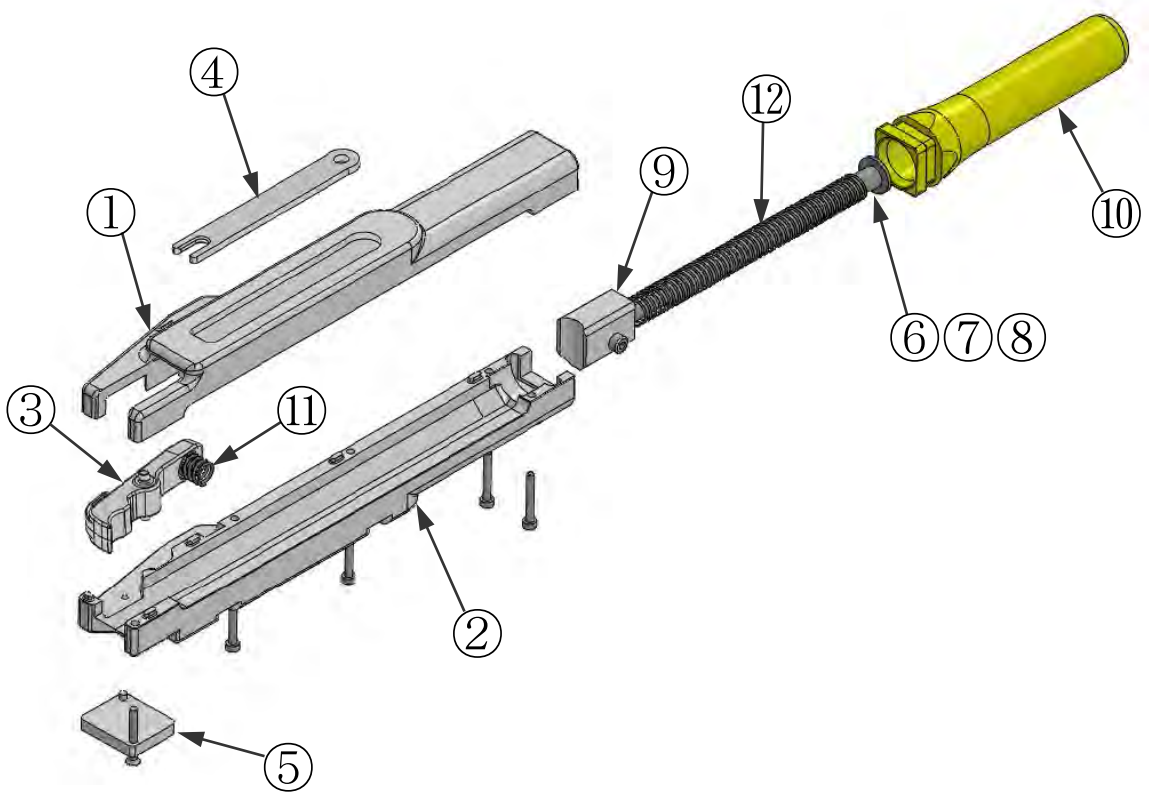
4) STC-1320L″For Lower Side : 6-6.5R (ϕ13) 20L″

No.	Name	Model	QTY
1	Vertical Magazine ϕ13 Upper Side with Key	STC-BD-13-UPKY	1
2	Vertical Magazine ϕ13 Lower Side No Key	STC-BD-13-20-DW-EXB	1
3	Picker for ϕ13	STC-ALDC-PC13E	1
4	Pressure Pin	STC-PP6-L5	1
5	Pressure Plate	STC-PPS-01-001	1
6	Telescopic Bar 1	STC-TSP-01-001	1
7	Telescopic Bar 2	STC-TSP-02-001	1
8	Telescopic Bar 3	STC-TSP-03-001	1
9	Tip Push ϕ13	STC-PC13-01-001	1
10	Telesco Cover	STC-TSC-01-001-L-INS	1
11	Spring	11-1041	1
12	Spring	SUS 0.8*9.7_1D*122n*124N*450H	1
13	Extension bar	STC-EXB-01-001	1



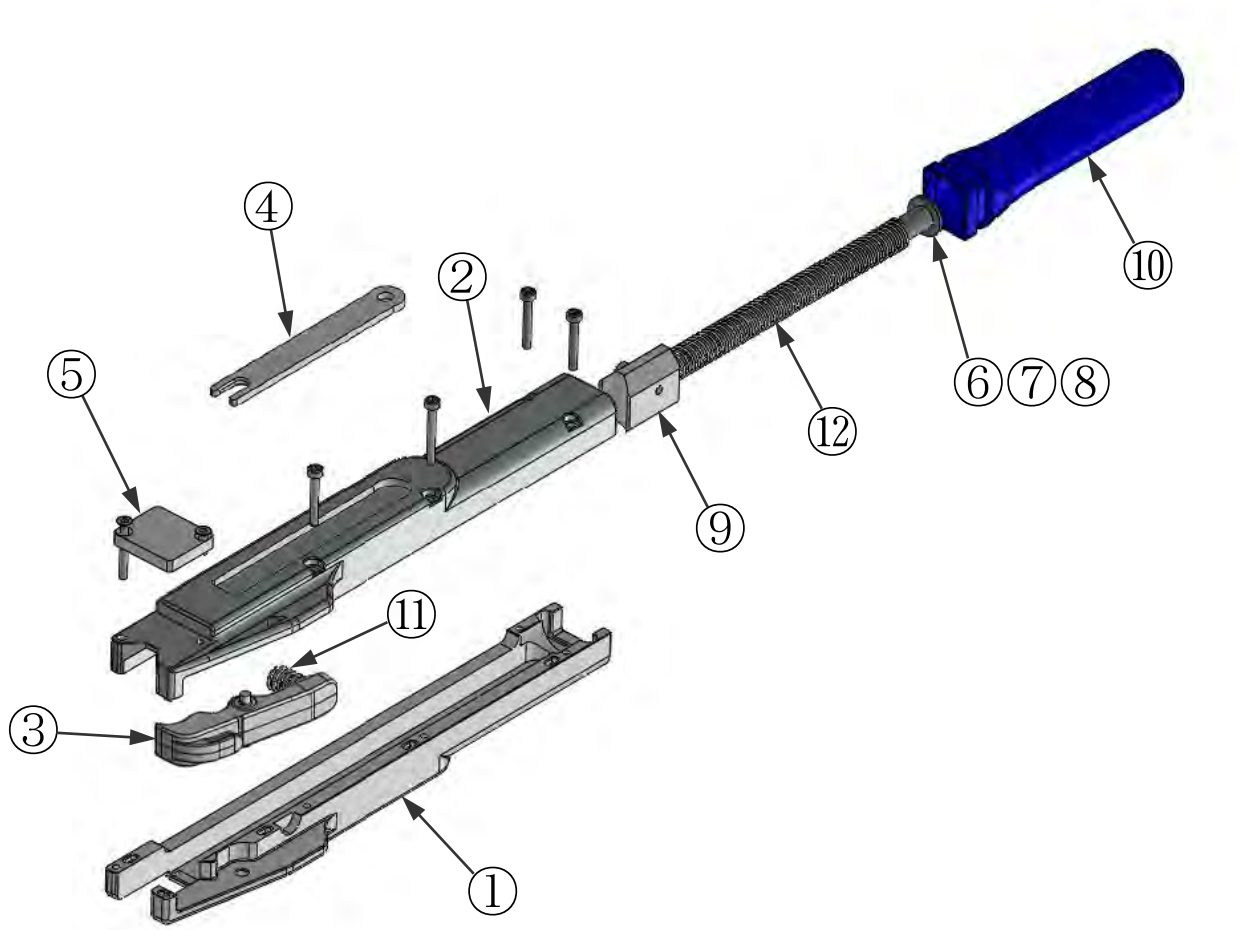
5) STC-1925U"For Upper Side : 6-9.5R (ϕ19) 25L"

No.	Name	Model	QTY
1	Vertical Magazine ϕ19,ϕ20 Upper Side No Key	STC-BD-1920-UP-EXB	1
2	Vertical Magazine ϕ19 Lower Side with Key	STC-BD-19-25-DWKY	1
3	Picker for ϕ19,ϕ20	STC-ALDC-PC1692	1
4	Extension bar	STC-EXB-01-001	1
5	Pressure Plate	STC-PPS-1920-25-01-001	1
6	Telescopic Bar 1	STC-TSP-01-001	1
7	Telescopic Bar 2	STC-TSP-02-001	1
8	Telescopic Bar 3	STC-TSP-03-001	1
9	Tip Push ϕ19	STC-PC19-01-001	1
10	Telesco Cover	STC-TSC-01-001-U-INS	1
11	Spring	11-1041	1
12	Spring	SUS 0.8*9.7_1D*122n*124N*500H	1



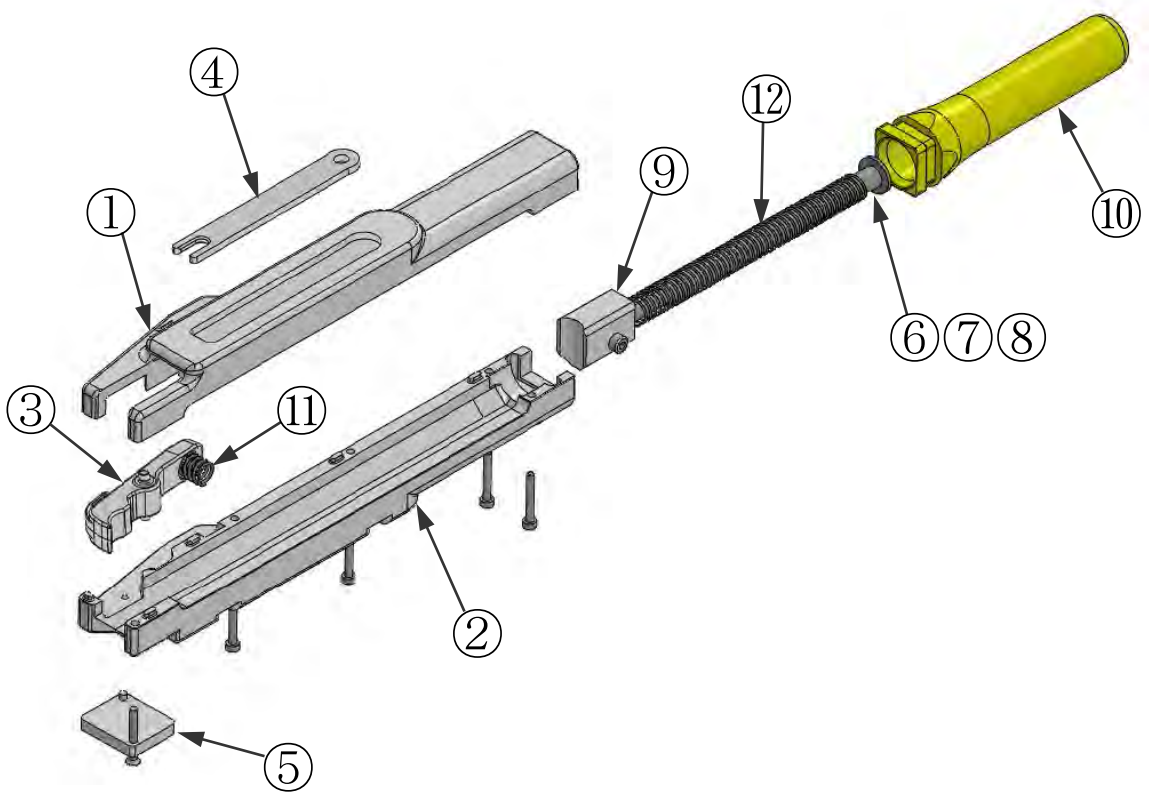
6) STC-1925L″For Lower Side : 6-9.5R (ϕ19) 25L″

No.	Name	Model	QTY
1	Vertical magazine ϕ19 Upper Side with Key	STC-BD-19-UPKY	1
2	Vertical magazine ϕ19 Lower Side No Key	STC-BD-19-25-DW-EXB	1
3	Picker for ϕ19,ϕ20	STC-ALDC-PC1692	1
4	Extension bar	STC-EXB-01-001	1
5	Pressure Plate	STC-PPS-1920-25-01-001	1
6	Telescopic Bar 1	STC-TSP-01-001	1
7	Telescopic Bar 2	STC-TSP-02-001	1
8	Telescopic Bar 3	STC-TSP-03-001	1
9	Tip Push ϕ19	STC-PC19-01-001	1
10	Telesco Cover	STC-TSC-01-001-L-INS	1
11	Spring	11-1041	1
12	Spring	SUS 0.8*9.7_1D*122n*124N*500H	1



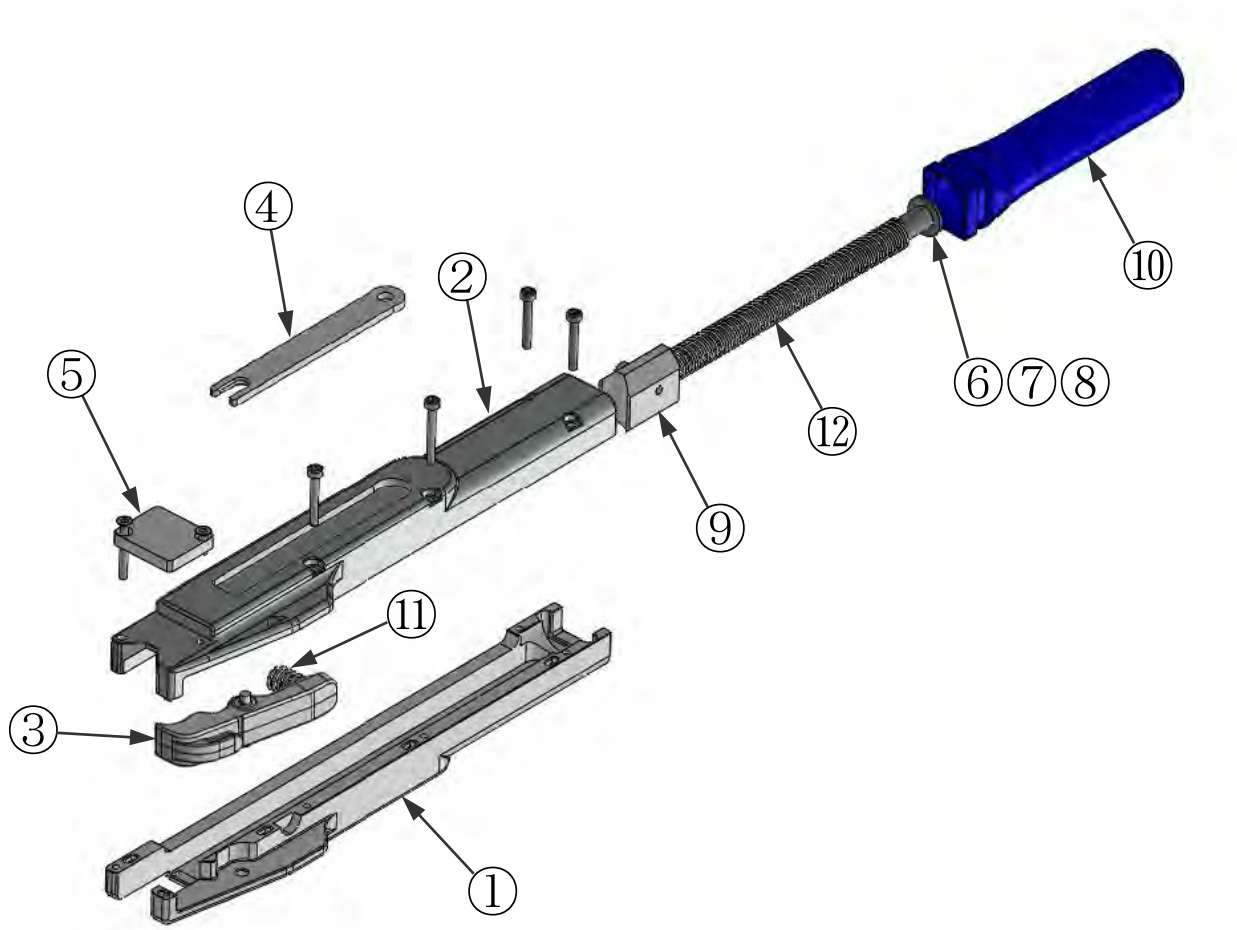
7) STC-2025U"For Upper Side : 6-10R (ϕ20) 25L"

No.	Name	Model	QTY
1	Vertical Magazine ϕ19,ϕ20 Upper Side No Key	STC-BD-1920-UP-EXB	1
2	Vertical Magazine ϕ20 Lower Side with Key	STC-BD-20-25-DWKY	1
3	Picker for ϕ19,ϕ20	STC-ALDC-PC1692	1
4	Extension bar	STC-EXB-01-001	1
5	Pressure Plate	STC-PPS-1920-25-01-001	1
6	Telescopic Bar 1	STC-TSP-01-001	1
7	Telescopic Bar 2	STC-TSP-02-001	1
8	Telescopic Bar 3	STC-TSP-03-001	1
9	Tip Push ϕ20	STC-PC20-01-001	1
10	Telesco Cover	STC-TSC-01-001-U-INS	1
11	Spring	11-1041	1
12	Spring	SUS 0.8*9.7_1D*122n*124N*500H	1



8) STC-2025L″For Lower Side : 6-10R (ϕ20) 25L″

No.	Name	Model	QTY
1	Vertical magazine ϕ20 Upper Side with Key	STC-BD-20-UPKY	1
2	Vertical magazine ϕ20 Lower Side No Key	STC-BD-20-25-DW-EXB	1
3	Picker for ϕ19,ϕ20	STC-ALDC-PC1692	1
4	Extension bar	STC-EXB-01-001	1
5	Pressure Plate	STC-PPS-1920-25-01-001	1
6	Telescopic Bar 1	STC-TSP-01-001	1
7	Telescopic Bar 2	STC-TSP-02-001	1
8	Telescopic Bar 3	STC-TSP-03-001	1
9	Tip Push ϕ20	STC-PC20-01-001	1
10	Telesco Cover	STC-TSC-01-001-L-INS	1
11	Spring	11-1041	1
12	Spring	SUS 0.8*9.7_1D*122n*124N*500H	1

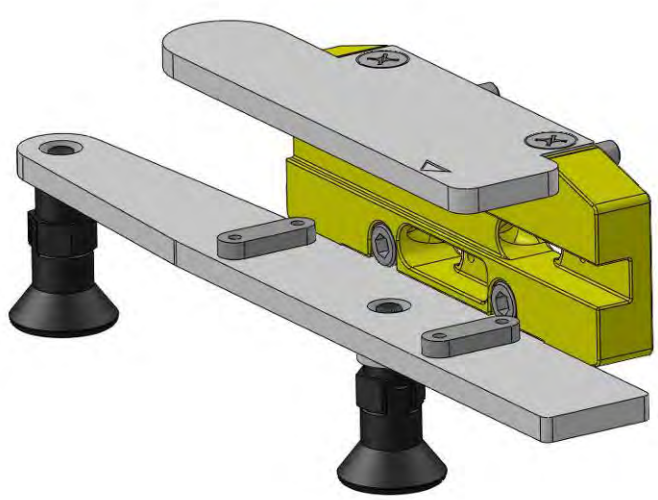


5. Adapter Block

※Adapter block [STC-ADB-**U or L-PP-SET] is the accessory product of our company's Tip Changer.

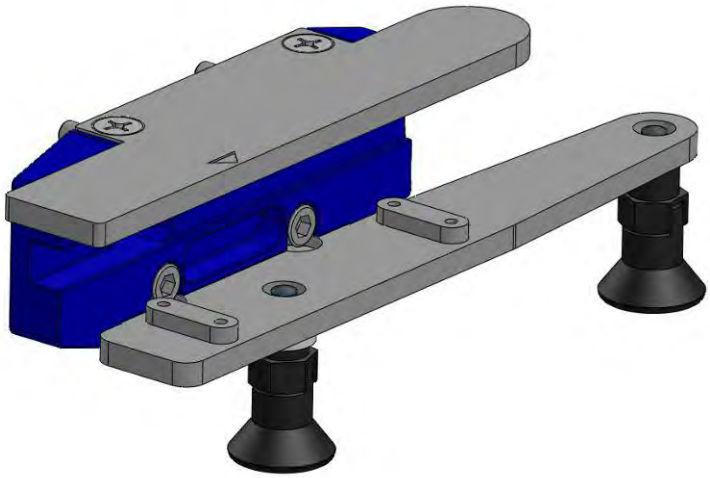
1) STC-ADB-**U-PP-SET for Upper Side

For φ13→13
For φ16→16
For φ19→19
For φ20→20



2) STC-ADB-**L-PP-SET for Lower Side

For φ13→13
For φ16→16
For φ19→19
For φ20→20

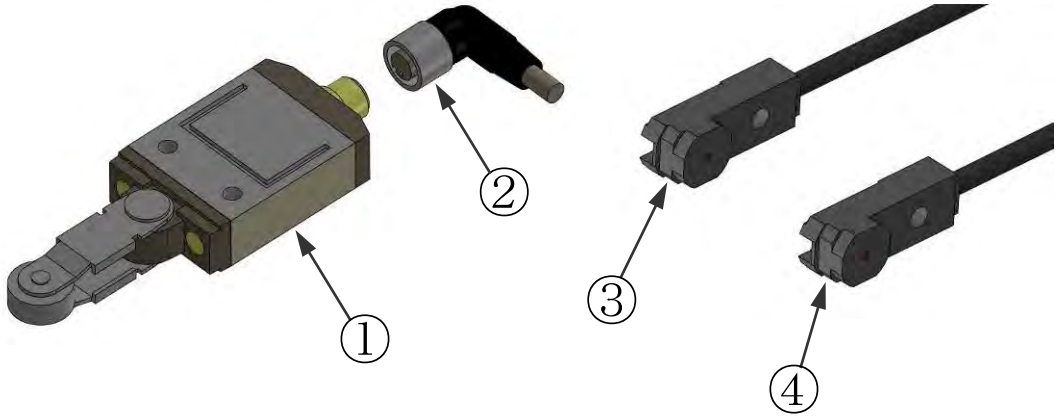


6. Sensor Pack (Option)

■KIKK-ELS-SE-Pac-NPN or PNP

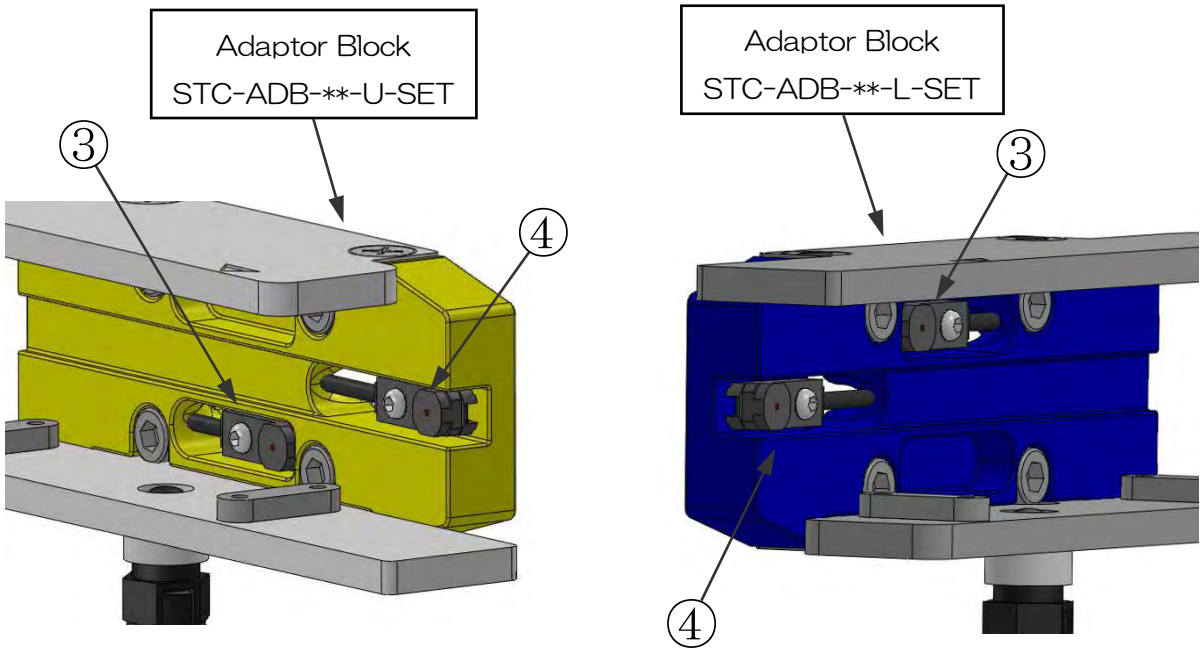
This sensor pack corresponds to the Tip Changer KIKK-EL/KIKK-SG of our company.

No.	Name	Model	QTY
1	Limit Switch	D4CC-4060(DC30V)	1
2	Plug	XS2F-D421-D-80F(2m)	1
3	Proximity Sensor NPN or PNP	GX-F8A or GX-F8A-P	2
4	Proximity Sensor NPN or PNP	GX-F8B or GX-F8B-P	2



Assemble the proximity sensor in the position below.

(Important) Please be careful not to make a mistake because the assembly position is fixed.



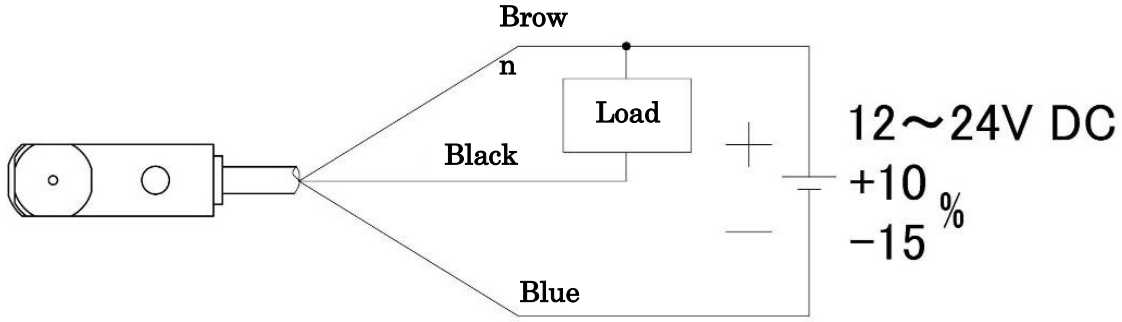
※ ** indicate cap tip outer diameters of the usage cap tip.

<Wire Reference>

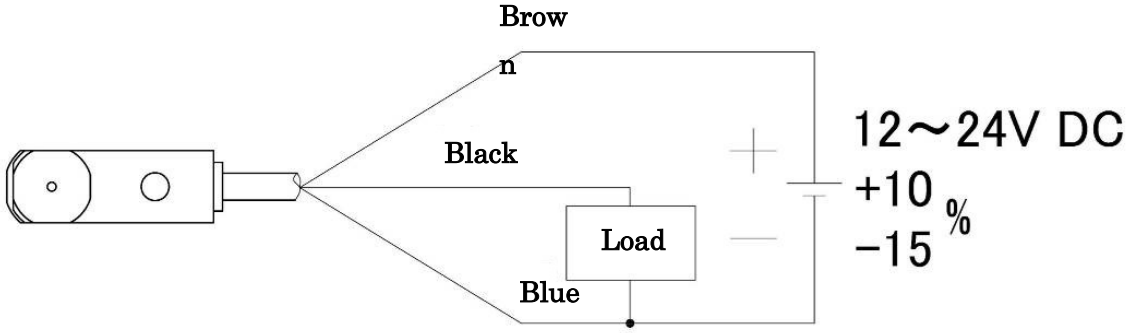
1) Limit Switch Wire Color (D4CC-4060)

Terminal No.	Wire Color	Terminal
1	Brown	COM
2	White	NC
3	Blue	Earth
4	Black	NO

2) Connection Diagram of Proximity Sensor NPN (GX-F8A/GX-F8B)



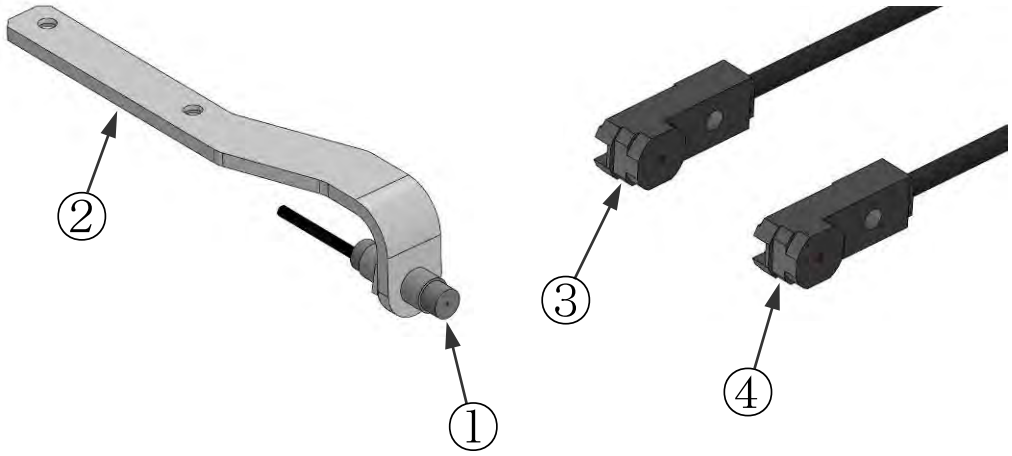
3) Connection Diagram of Proximity Sensor PNP (GX-F8A-P/GX-F8B-P)



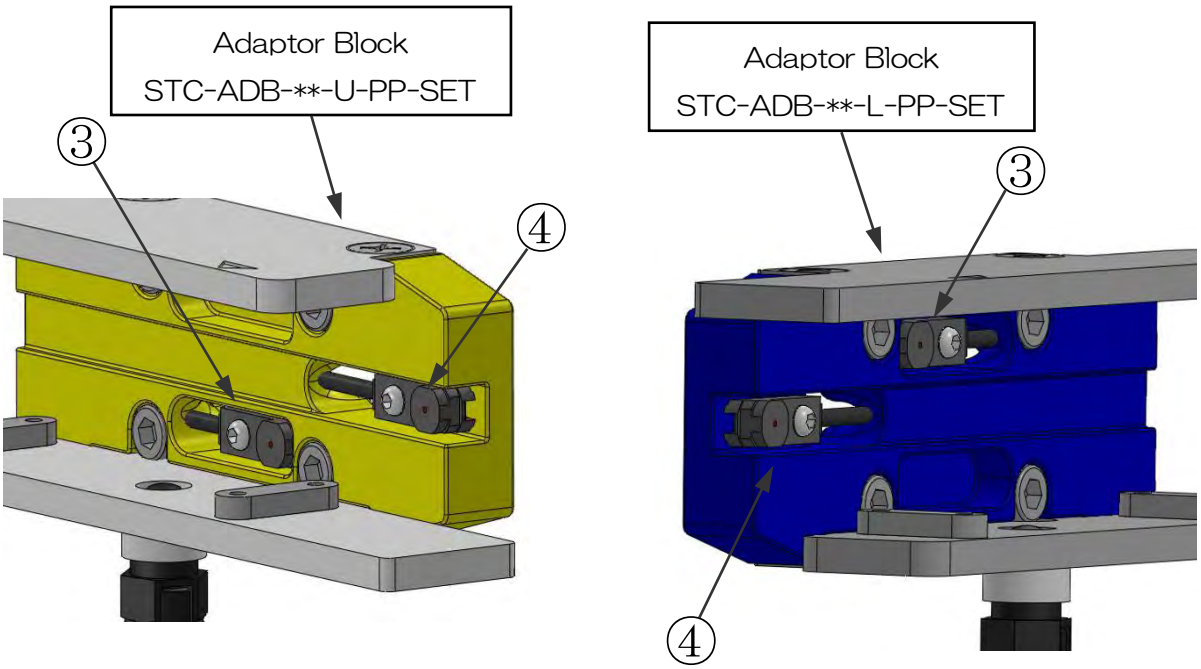
■SE-Pac-S-001-NPN or PNP

This sensor pack corresponds to the Tip Changer DH-SVR2 of our company.

No.	Name	Model	QTY
1	Proximity Sensor	GX-12MLU	1
2	Sensor Installation Plate	DHSVR2-SBR-01-001	1
3	Proximity Sensor NPN or PNP	GX-F8A or GX-F8A-P	2
4	Proximity Sensor NPN or PNP	GX-F8B or GX-F8B-P	2



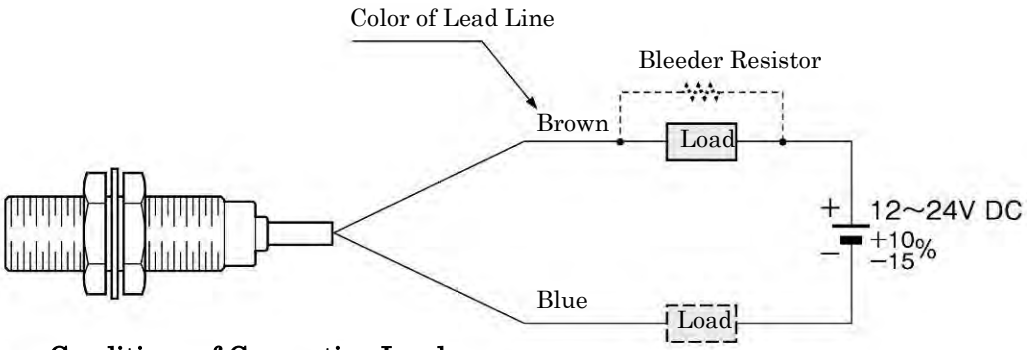
Assemble the proximity sensor in the position below.
(Important) Please be careful not to make a mistake because the assembly position is fixed.



※ ** indicate cap tip outer diameters of the usage cap tip.

<Wire Reference>

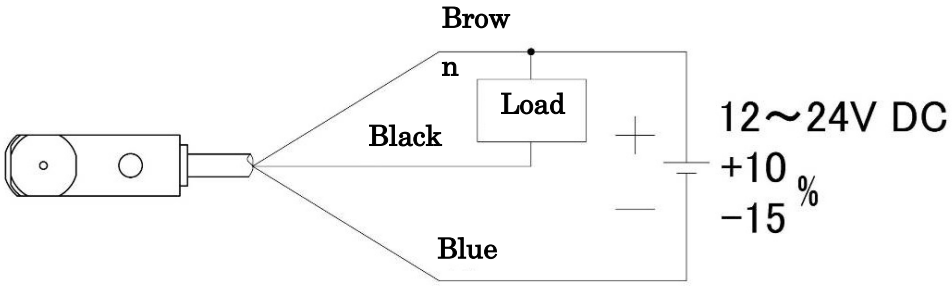
1) Connection Diagram of Proximity Sensor (GX-12MLU)



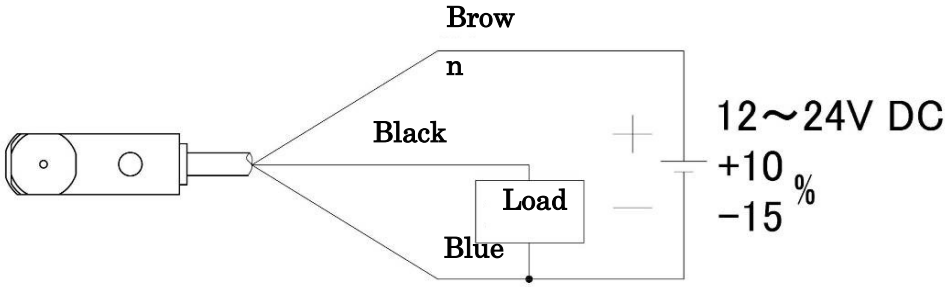
Conditions of Connection Load

(1) When OFF, load does not operate at leakage current (0.8 mA).
(2) When ON, load operates at power supply voltage (-3V).
(3) When ON, the current is in the range of 3-70mA.
[If less than 3mA, connect a bleeder resistor to flow at 3mA or above.]

2) Connection Diagram of Proximity Sensor NPN (GX-F8A/GX-F8B)



3) Connection Diagram of Proximity Sensor PNP(GX-F8A-P/GX-F8B-P)



7. Maintenance

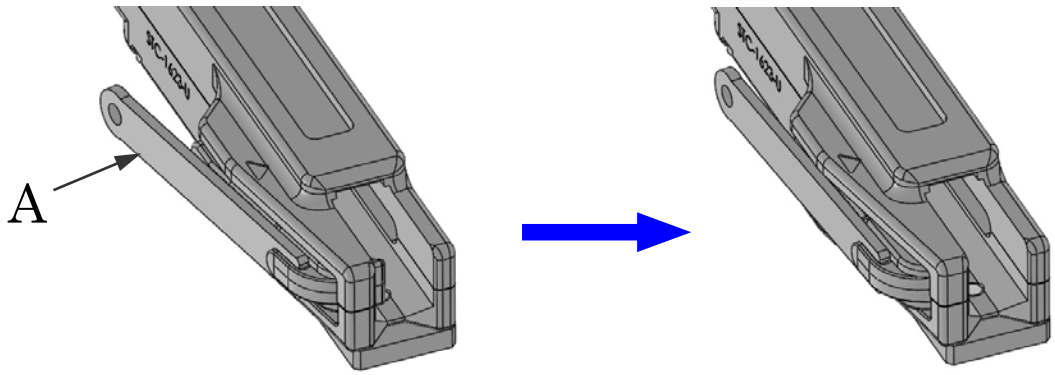
7-1. Cap Tip Loading Procedure

Protect your body sufficiently with protective goggles, gloves, etc. before starting operation.

1) Make sure that there are no foreign substances or dust accumulated in the cartridge. If it cannot be cleaned by air spray, etc., clean the inside of the cartridge after disassembly operation. **(Please refer to 7-2. Cartridge Disassembly Procedure)**

※This description corresponds to the cartridge for the upper side (STC-****U), but also applies to operational procedure for the cartridge for the lower side (STC-****L).

2) Before inserting the cap tip, please make sure that the fingernail is opened by pressing a part A approximately 4mm from this position.

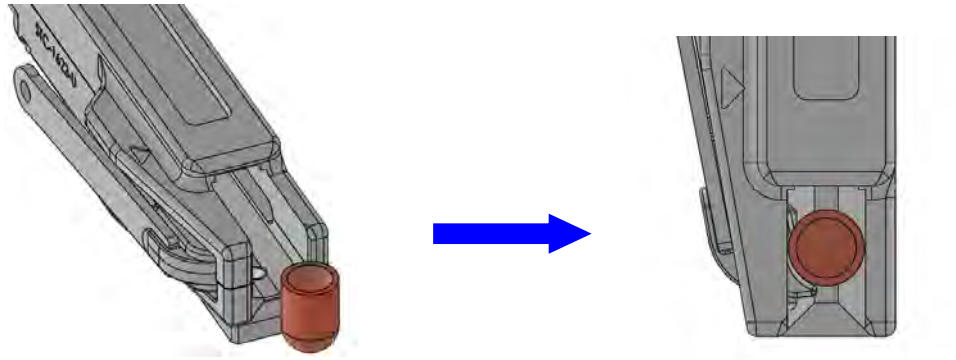


3) Please prepare a new cap tip for loading.

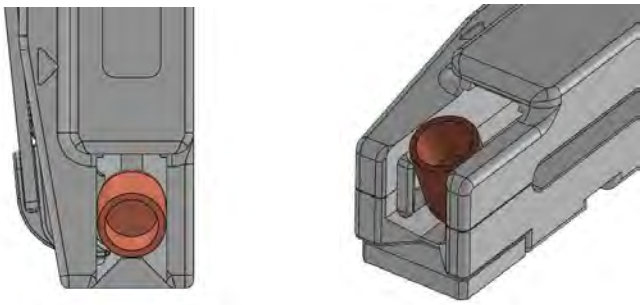
※Do not use used cap tips with scratches around the periphery or on taper.
The cap tip may not be inserted correctly.

◆ The maximum numbers of loading are for φ16 → 12pcs / for φ13 → 14pcs / for φ19,φ20 → 10pcs.

4) Push the picker as shown in the image and load the cap tip from the front while fingernail is open. After inserting cap tip up to the grooved position, release your finger.
After insertion, please make sure that the outer periphery of the cap tip matches the groove of the picker.

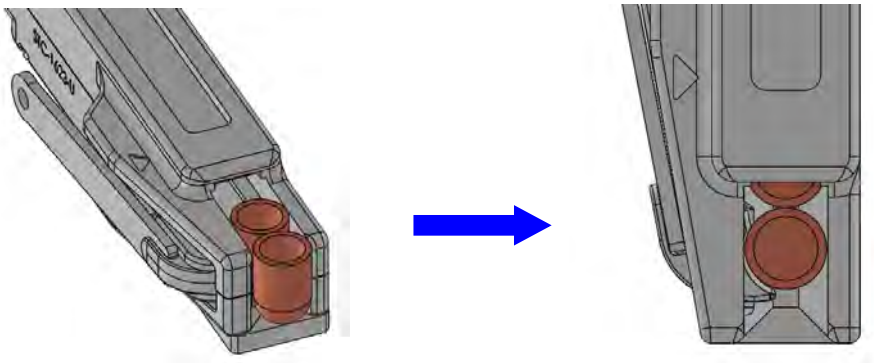


※If the cap tip does not match the groove of the picker or is tilted and loaded as shown below, position it correctly.



5) The loading of the second and subsequent cap tip opens the fingernail while pushing the cap tip from the front.

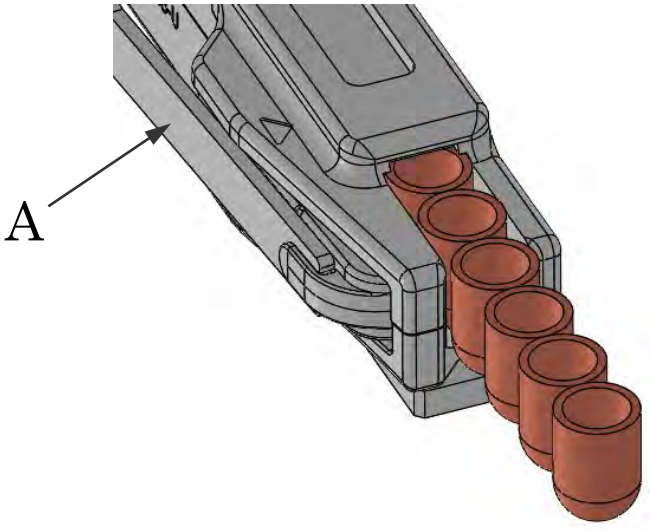
※Please be careful when first opening the fingernail part by pushing the picker because the cap tip will be discharged.



6) Once the loading of the total quantity is completed, make sure that the cap tip on the front matches the groove of the picker.

※When discharging the loaded cap tip, press the image sign A to open the part corresponding to the fingernail.

Open the fingernail part slowly because the cap tip will pop out strongly if the fingernail part is opened at once.



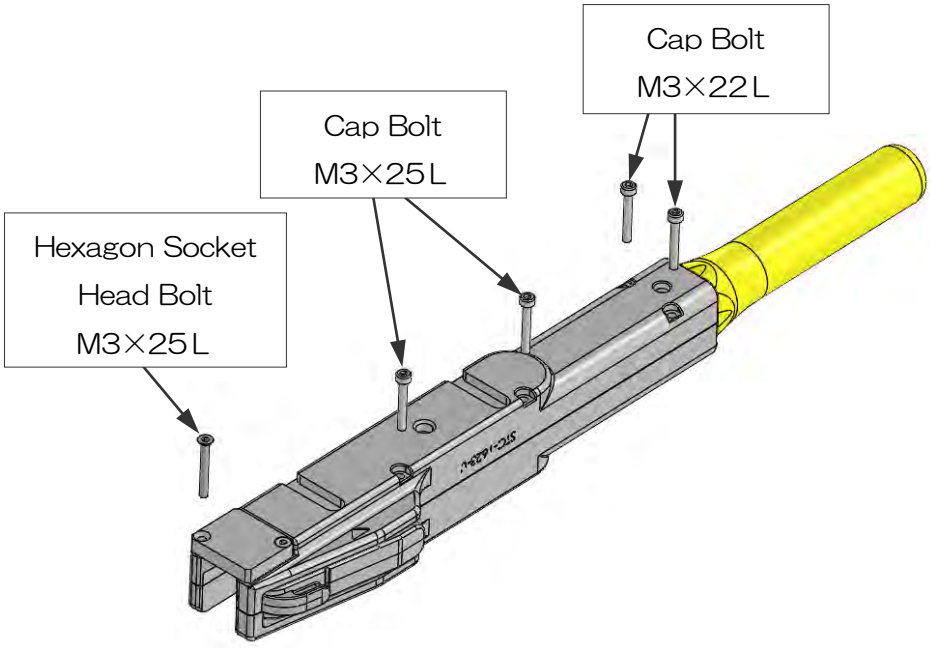
7-2. Cartridge Disassembly Procedure

Protect your body sufficiently with protective goggles, gloves, etc. before starting operation.

Disassembly operation must be performed when dust or foreign substances cannot be removed from the outside.

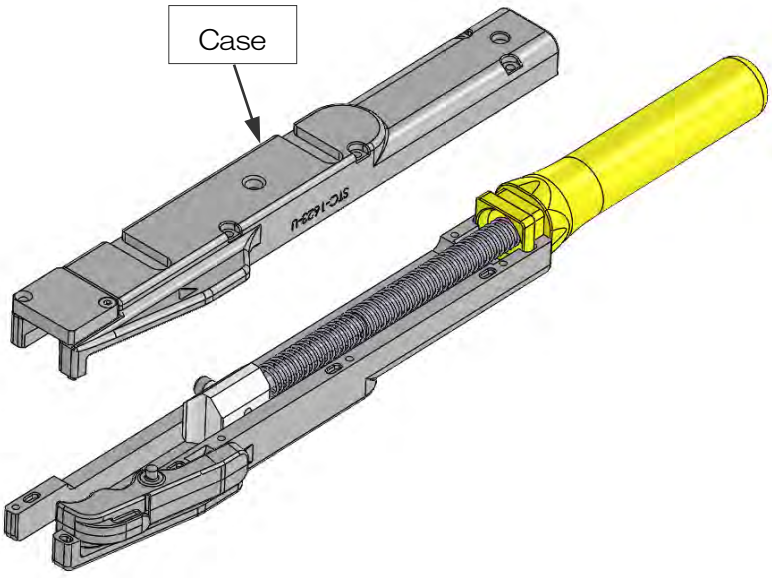
※Although this description is for the upper side cartridge, it can be also applied to the operation procedure for the lower side cartridge.

1) Separate 2 pieces of each of the cap bolts "M3×22L" and "M3×25L" and 1 piece of the hexagon socket head bolt "M3×25L".

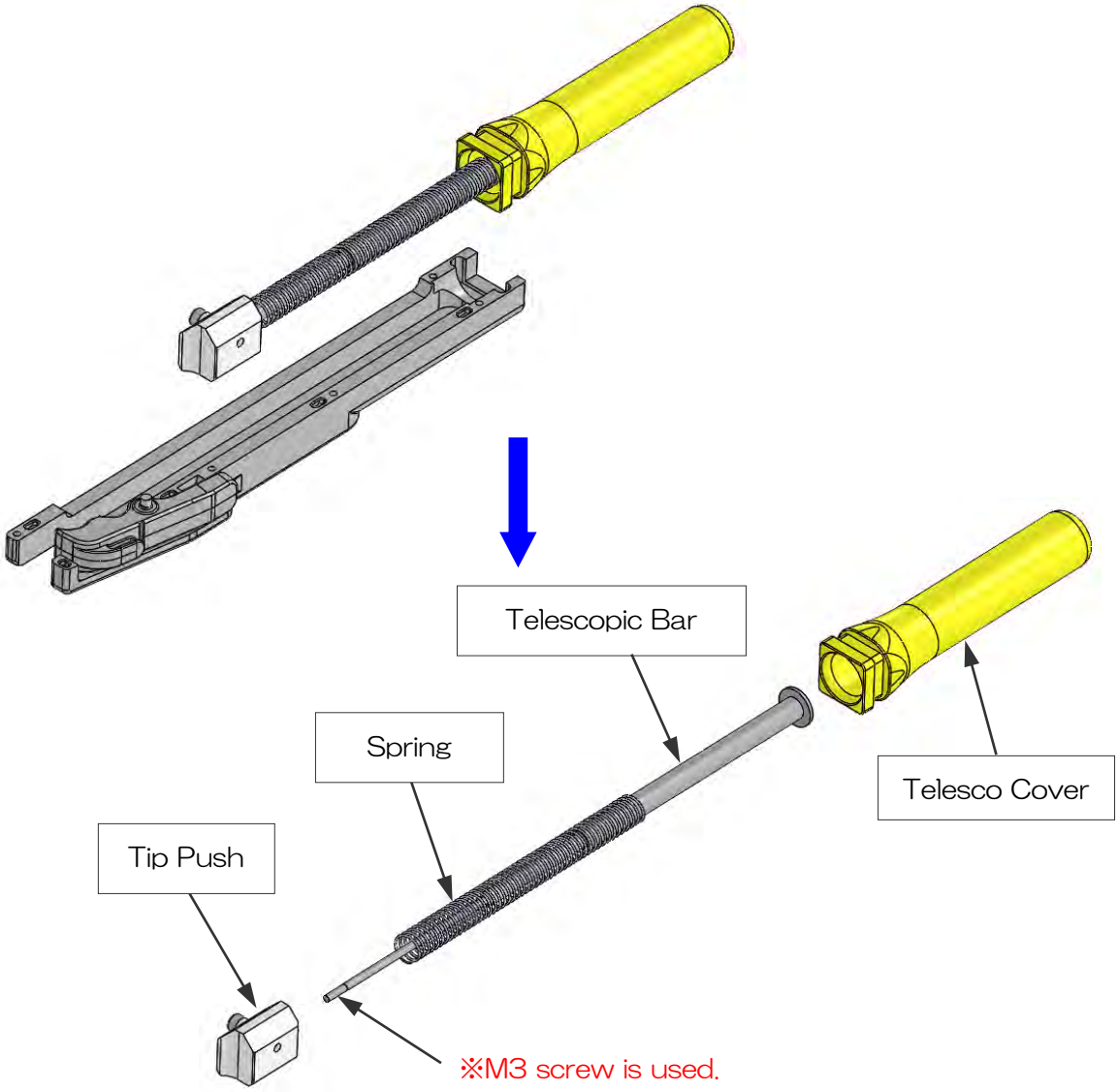


2) Separate the case.

※Remove slowly so that the spring does not pop out.

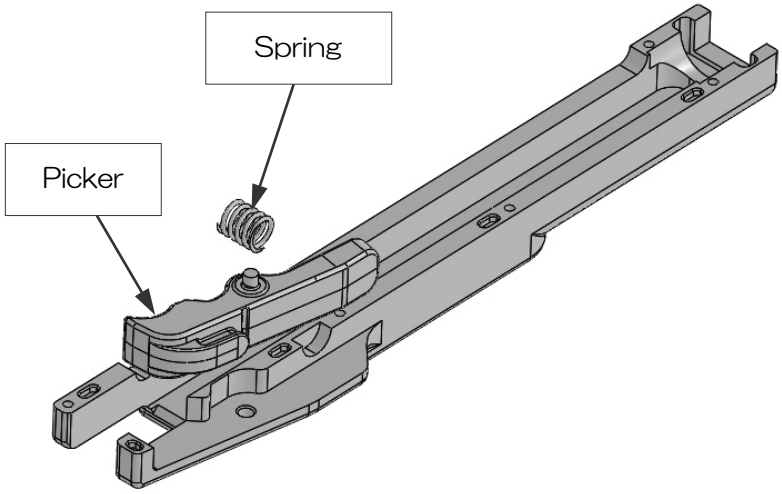


3) When removing the spring, remove the Telesco cover and tip push from the case and disassemble. Tip push can be disassembled by unscrewing the M3 screw at the end of the Telescopic bar.



4) Picker is removed when separated.

※Please be careful so that spring does not pop out.

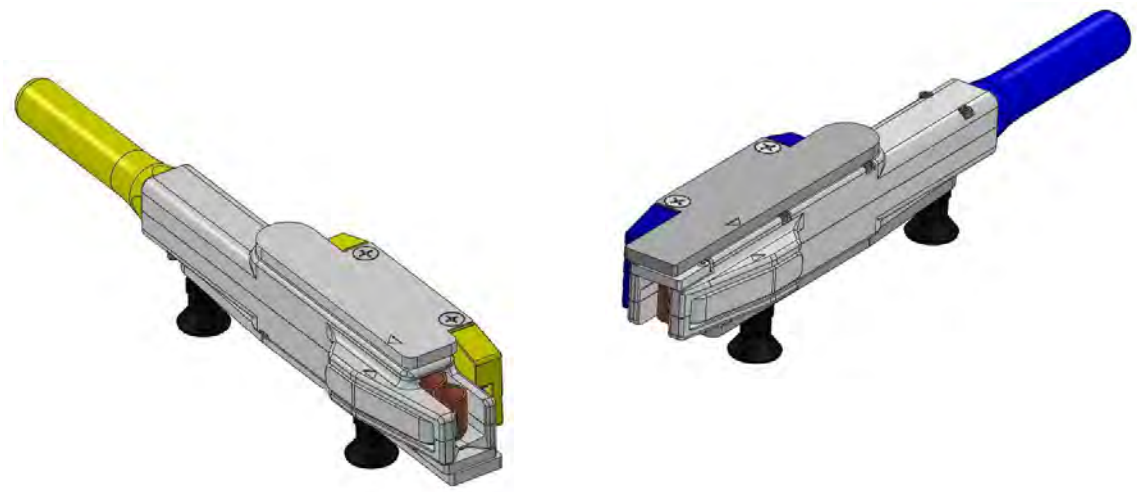


※To reassemble, perform the procedure 4) →1) in the opposite order.

7-3. Cartridge Mounting Procedure

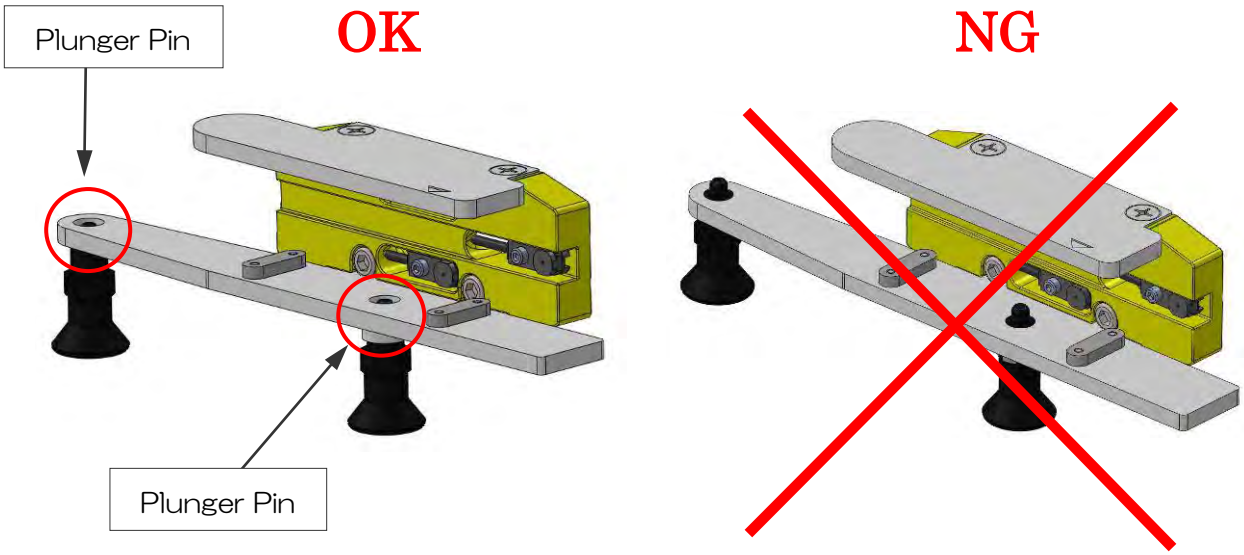
Protect your body sufficiently with protective goggles, gloves, etc. before starting operation.

◆The cartridge for the upper side (STC-****U) is assembled in the yellow adapter block (STC-ADB-**U-PP-SET).
◆The cartridge for the lower side (STC-****L) is assembled in the blue adapter block (STC-ADB-**L-PP-SET).
※The adapter block is attached to the main body of the Tip Changer of our company.



※Although this description is for the upper side cartridge, it can be also applied to the operation procedure for the lower side cartridge.

1) Make sure that 2 pieces of the plunger pin of the adapter block do not come out.
※The cartridge cannot be inserted when the pin comes out.

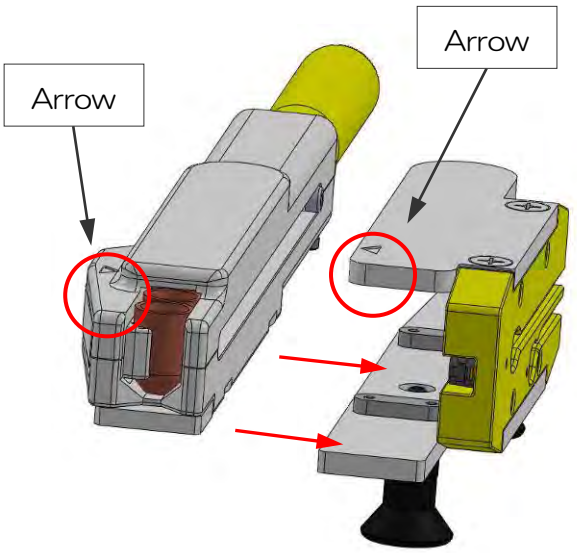


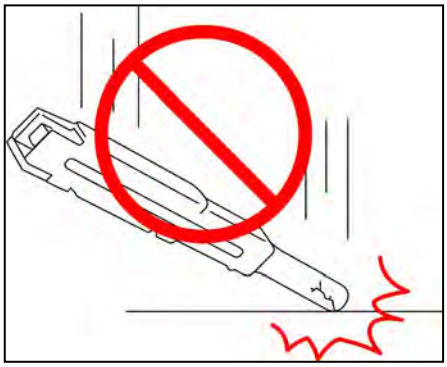
2) Firmly insert all the way to the inside by matching the key of the adapter block and the groove positions or the arrow signs of the cartridge.

※If the insertion position is not correct, it cannot be fixed with a plunger pin.

⚠ Caution

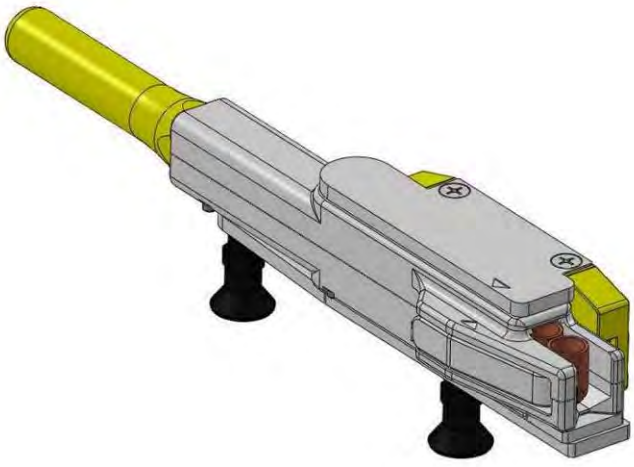
Do not drop this product. It could be broken.

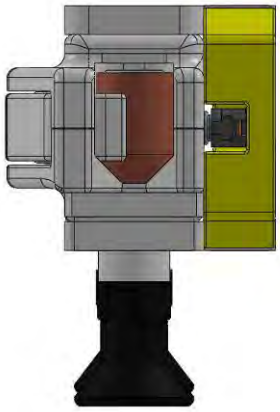




3) Tighten 2 pieces of the plunger pin to secure the cartridge.

※When the pin is not tightened, the cartridge has possibly not been inserted into the fixed position.





4) After completing the operation, make sure that the cartridge does not come off.

8. Example of Cap Tip Insertion Operation

■This is an example of operation when used with the switchboard of our company.

※Please start from the welding power supply OFF/stopped cooling water.

1) Start cap tip exchange ・ insertion operation

⬇

2) Confirm the presence of the upper and lower cartridges ・ the presence of the cap tip with ″proximity sensor″.

※The proximity sensor is assembled in the adapter block on Tip Changer

⬇

3) Move a lower side of robot gun to cap tip removal position.

⬇

4) Remove the lower side cap tip ※Be sure to remove the tip from the lower side.

⬇

5) Check the removal of the lower side cap tip with “Limit Switch or Proximity Sensor” on the Tip Changer.

⬇

6) Move the lower side of the robot gun to cap tip insertion position.

⬇

7) Insert the lower side cap tip (Applied Pressure: 120-150kgf)

⬇

8) Move the robot gun back to pull out a cap tip (Speed: 200-300mm/sec)

⬇

9) Check the insertion of the lower side cap tip with “Limit Switch or Proximity Sensor” on the Tip Changer.

⬇

10) Move the upper side of the robot gun to removal position.

⬇

11) Remove the upper side cap tip

⬇

12) Check the removal of the upper side cap tip with “Limit Switch or Proximity Sensor” on the Tip Changer.

⬇

13) Move the upper side of robot gun to removal position.

⬇

14) Insert the upper side cap tip (Applied Pressure: 120-150kgf)

⬇

15) Move the robot gun back to pull out a cap tip (Speed: 200-300mm/sec)

⬇

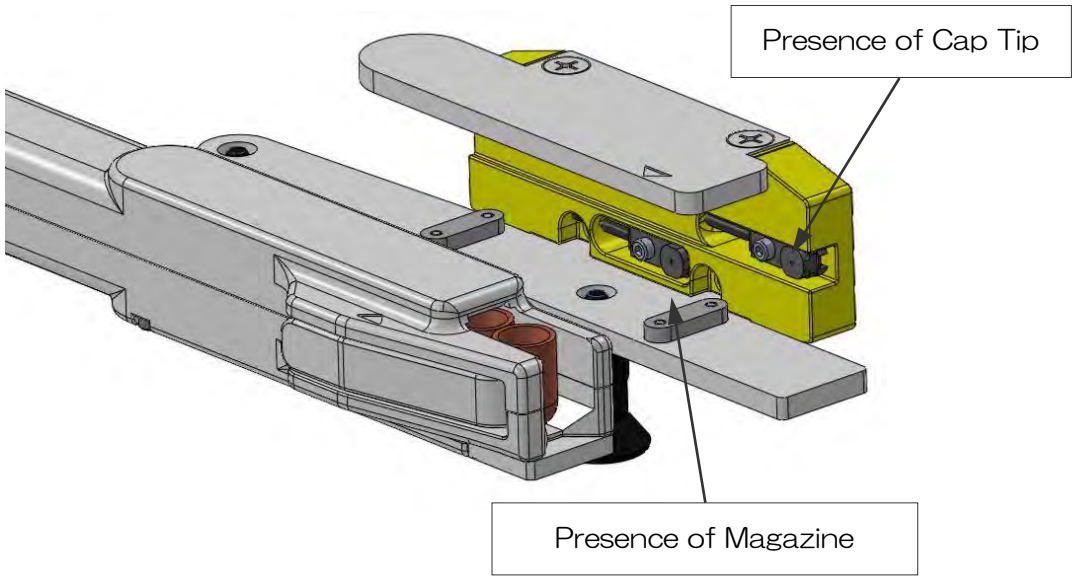
16) Check the insertion of the upper Side cap tip with ″Limit Switch or Proximity Sensor’ ″ on the Tip Changer

⬇

17) Complete the cap tip exchange ・ insertion operation

◆Supplementary Image

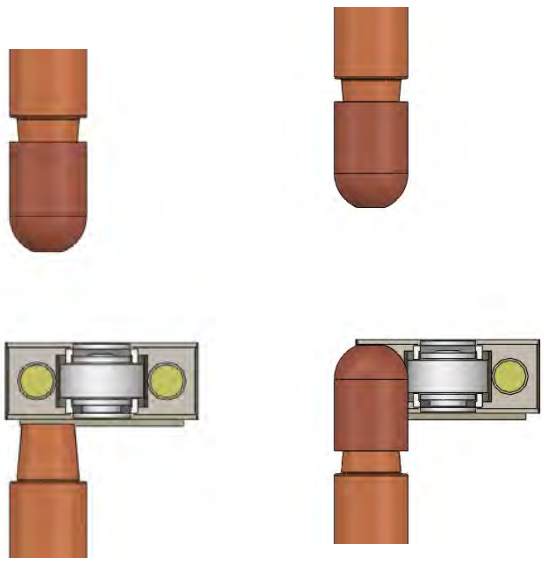
Check the presence of the cartridge and cap tips with ″proximity sensor’ ″.
This image is for the upper side (STC-****U), but it can also be applied for the lower side (STC-****L).



Check cap tip removal (LS)

※The image below shows an example of using the lower cap tip.

＜OK＞ ＜NG＞



◆For checking the cap tip removal, set as follows.

- If passing without contacting LS, OK
- If passing by hitting LS, NG

Check cap tip insertion (LS)

※The image below shows an example of using the lower cap tip.

＜OK＞ ＜NG＞

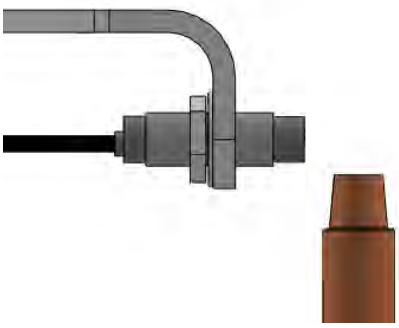
◆For checking the cap tip removal, set as follows.

- If passing by hitting LS, OK
- If passing without contacting LS, NG

Cap Tip Removal Check (Proximity Sensor)

※The following figures are illustrative, and the lower side cap tip was used.

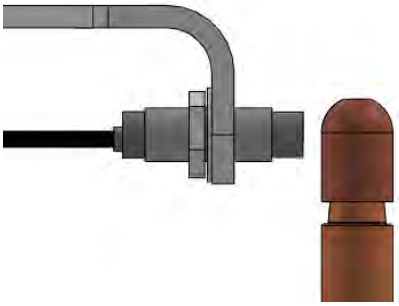
＜OK＞



◆When cap tip removal check is OK,
set as follows.

・If the proximity sensor does not turn when the cap tip is not attached, OK
If the proximity sensor turns ON, NG
※In case of NG, move it to a position where it cannot be turned ON.

＜NG＞



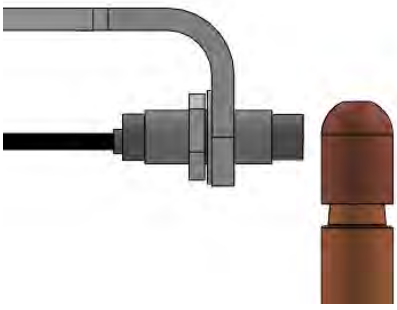
◆When cap tip removal check is NG,
set as follows.

・If turning ON when the cap tip is Brought close to the proximity sensor, OK
If the proximity sensor is not turned ON, NG
※In case of NG, move it to a position where it can be turned ON.

Check Cap Tip Insertion (Proximity Sensor)

※The following figures are illustrative, and the lower side cap tip was used.

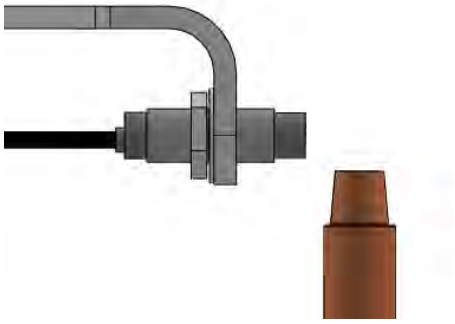
＜OK＞



◆When cap tip insertion check is OK,
set as follows.

・ If turning ON when the cap tip is brought close to the proximity sensor, OK
If the proximity sensor is not turned ON, NG
※In case of NG, move it to a position where it can be turned ON.

＜NG＞



◆When cap tip insertion check is NG,
set as follows.

・If the proximity sensor does not turn ON when the cap tip is not attached, OK
If the proximity sensor turns ON, NG
※In case of NG, move it to a position where it cannot be turned ON.

9. Robot Teaching

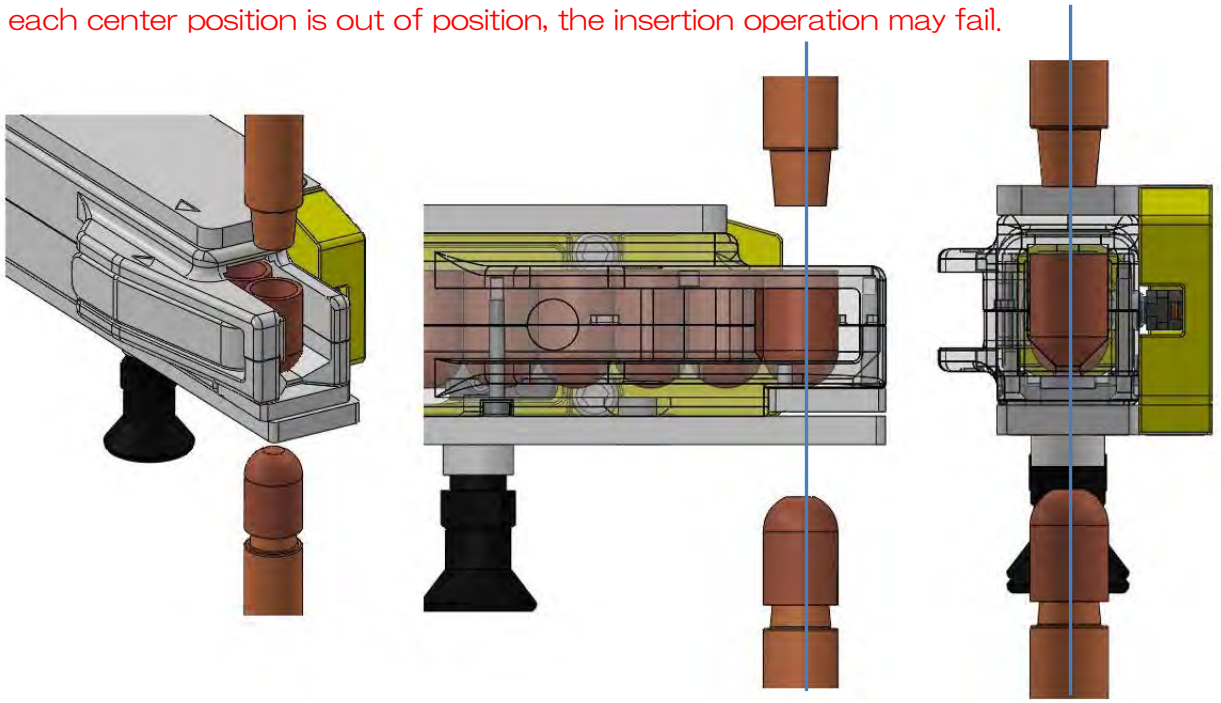
◆ Items to be Confirmed Before Robot Teaching

- Is the horizontal and the vertical of the robot gun correct?
- Are the shapes of the cartridge and cap tip appropriate?
- Is the cap tip loaded in the cartridge?
- Is the cartridge firmly fixed and does not move?

■Inserting Upper Side Cap Tip

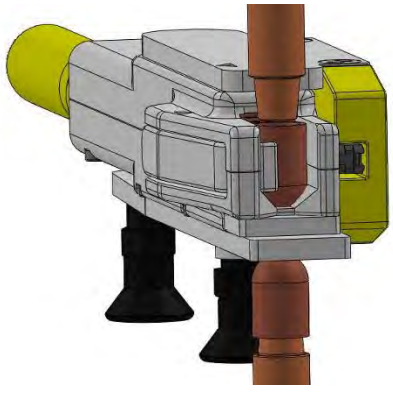
1) Move the robot gun from the front of the cartridge to the position where the cap tip is inserted.

※Fit as much as possible to the center position of the loaded cap tip and the shank.
If each center position is out of position, the insertion operation may fail.



2) The lower side moves to the position where the front end of the cap tip contacts the pressure plate. Push up from the contact within **1mm.**

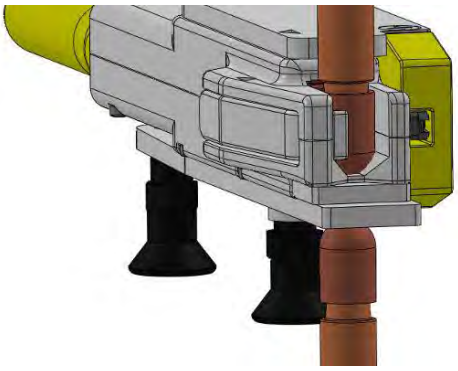
※Operation of pushing up too much will cause failure of cap tip insertion or product breakage. The upper side moves to the pressure position.



3) Insert the cap tip by applying pressure. (120kgf-150kgf recommended)

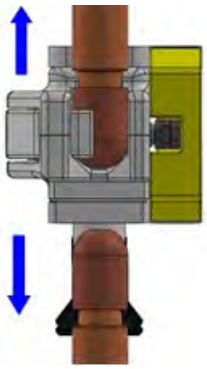
※If used at 150kgf or more, the product may be damaged.

※If used at 120kgf or less, the cap tip may not be inserted.



4) Make room at the front end of the cap tip by an interval of 1-2mm on the upper part. Move the lower part to a position where an interval of 1-5mm is opened at the pressure plate.

※When sending the robot to the rear without moving, there is a risk of scratches on the pressure plate ・ the front end of the cap tip.



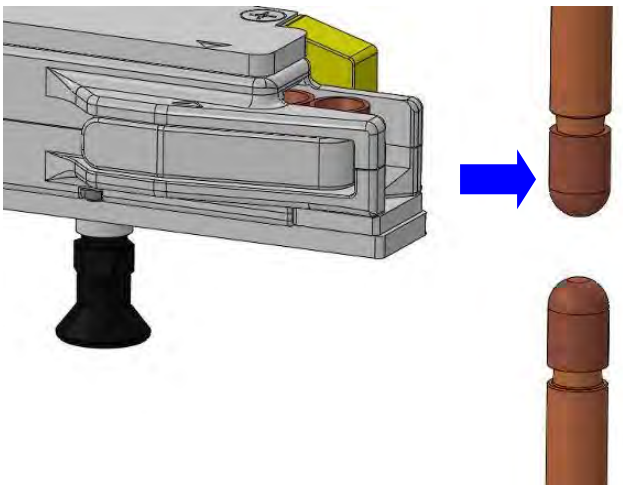
5) Send the robot gun backward without opening the robot gun up and down.

It is an important operation to insert the cap tip correctly. (Speed: 200-300mm/sec)

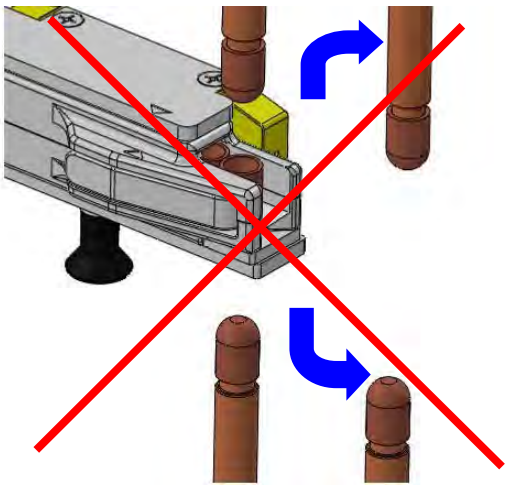
Note) The robot gun should not be sent backward after opening up and down.

If sending back after opening up and down, cap tip insertion and cap tip removal cannot be performed correctly.

Make sure that the next tip in the cartridge is forwarded correctly after sending backward.



OK



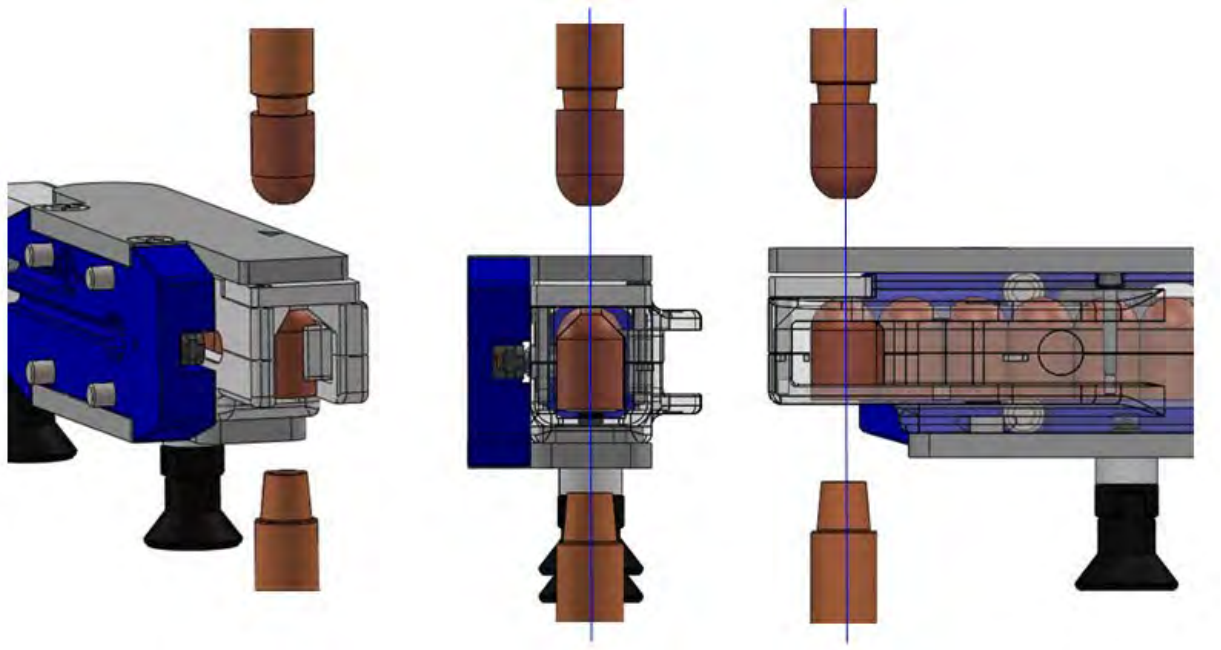
NG

■Inserting Lower Side Cap Tip

1) Move the robot gun from the front of the cartridge to the cap tip mounting position.

※Fit to the loading cap tip and the center position of shank as much as possible.

If each center location is out of position, the insertion operation may fail.

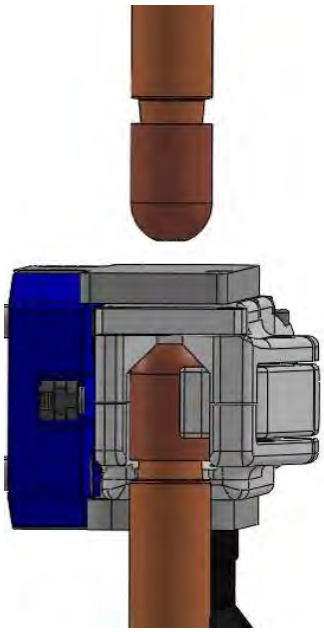


2) The lower side moves to the position where the cap tip contacts.

Push up from the contact within **1mm.**

※Operation of pushing up too much will cause failure of cap tip insertion or product breakage.

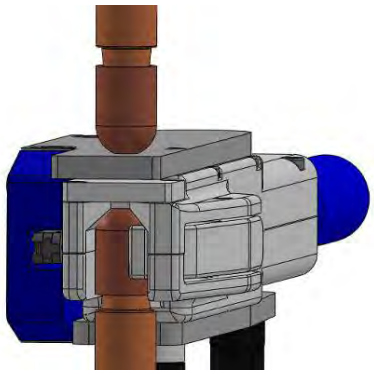
The upper side moves to the pressure position.



3) Apply pressure and insert the cap tip. (120kgf-150kgf recommended)

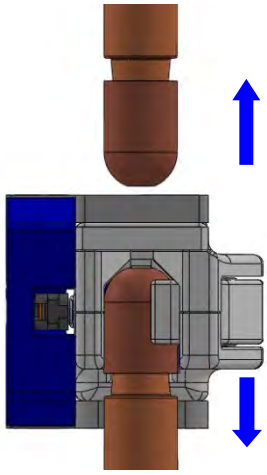
※When used at 150kgf or more, the product may be damaged.

※When used at 120kgf or less, the cap tip may not be inserted.



4) In the upper part, make room at the front end of the cap tip by an interval of 1-5mm.
Move the lower part to a position spread by an interval of 1-2mm.

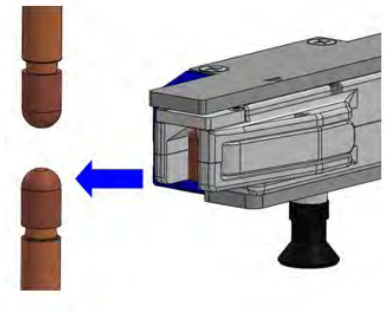
※When sending the robot to the rear without moving, there is a risk of scratches on the pressure plate ・ the front end of the cap tip.



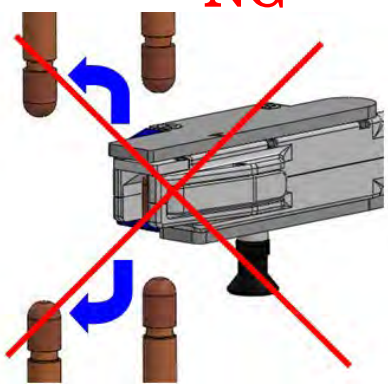
5) Send the robot gun backward without opening up and down.
It is an important operation to insert the cap tip correctly. (Speed: 200-300mm/sec)

Note) The robot gun should not be sent backward after opening up and down.
If sending back after opening up and down, cap tip insertion and cap tip removal cannot be performed correctly.
Make sure that the next tip in the cartridge is forwarded correctly after sending backward.

OK



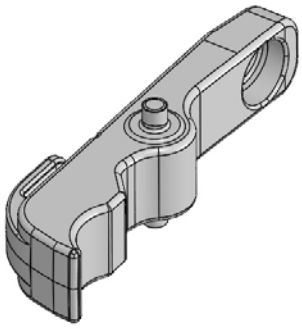
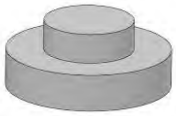
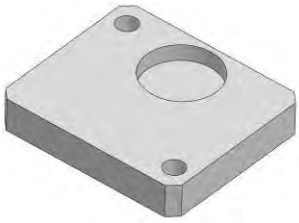
NG

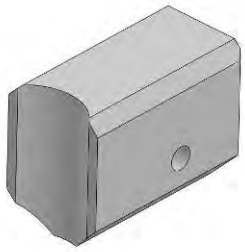
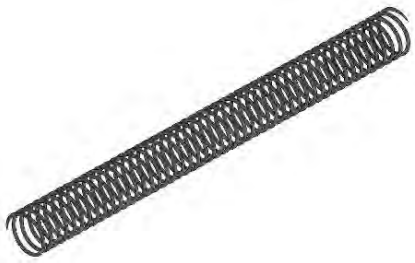


10. Problems and Solutions

Abnormal Condition	Causes and Solution
The cartridge cannot be assembled with the adapter or cannot be fixed.	* The plunger pin is out. → Push the plunger pin back in. * Foreign substances or dusts are stuck in the adapter block ・ cartridge. → Clean the foreign substances. * Positions of the cartridge groove and the adapter key do not match. → Change the positions.
The cap tip cannot be inserted to the cartridge.	* The cap tip shape ・ overall length do not match. → Prepare an appropriate tip for the cartridge. * There are contaminations or scratches around the periphery of the cap tip. → Replace with a new cap tip without scratches.
The cartridge does not forward the next tip.	* The inside of the cartridge is clogged with foreign substances or dust. → Remove foreign substances and clean. * Spring is damaged. → Disassemble the cartridge to replace the spring.
The cap tip cannot be inserted.	* Robot teaching is correct. → Adjust the horizontal ・ vertical of the robot gun. Perform the insertion operation at the cap tip center location. * Loading cannot be performed in the correct position of the tip cartridge. → Adjust the position so that the grooves of the cap tip and picker are aligned. * Applied pressure is low. → Set it the recommended applied pressure (100kgf-150kgf).

11. Replacement List

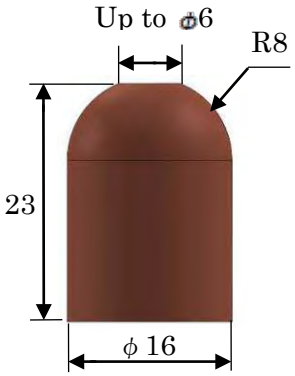
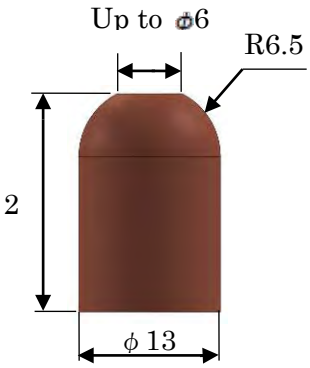
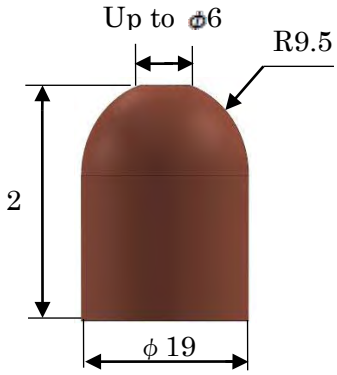
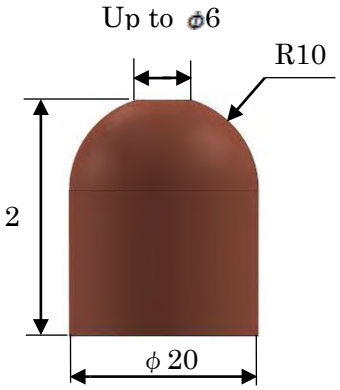
	Product Name: Picker Model (For ϕ13) : STC-ALDC-PC-13E (For ϕ16, ϕ19, ϕ20) : STC-ALDC-PC-1692 ◆ Required Quantity: 1 ◆ Exchange Cycle : 1 Year or 10,000 Times
	Product Name : Pressure Pin Model (For ϕ13) : STC-PP6-L5 (For ϕ16) : STC-PP6-L2 ◆ Required Quantity : 1 ◆ Exchange Cycle : 1 Year or 10,000 Times
	Product Name : Pressure Plate Model (For ϕ13, ϕ16) : STC-PPS-01-001 (For ϕ19, ϕ20) : STC-PPS-1920-25-01-001 ◆ Required Quantity : 1 ◆ Exchange Cycle : 1 Year or 10,000 Times
	Product Name : Telescopic Bar Model STC-TSP-01-001 STC-TSP-02-001 STC-TSP-03-001 ◆ Required Quantity : 1 for Each ◆ Exchange Cycle : 2 Years or 20,000 Times

	Product Name: Tip Push Model (For ϕ13) : STC-PC13-01-001 (For ϕ16) : STC-PC16-01-001 (For ϕ19) : STC-PC19-01-001 (For ϕ20) : STC-PC20-01-001 ◆ Required Quantity : 1 ◆ Exchange Cycle : 1 Year or 10,000 Times
	Product Name : Spring Model 11-1041 ◆ Required Quantity : 1 ◆ Exchange Cycle : 1 Year or 10,000 Times
	Product Name: Spring Model (For ϕ13,ϕ16) SUS 0.8*9.7_1D*122n*124N*450H (For ϕ19,ϕ20) SUS 0.8*9.7_1D*122n*124N*500H ◆ Required Quantity : 1 ◆ Exchange Cycle : 1 Year or 10,000 Times

12. Order Model

■Standard Model

[STC-****U] is for the upper side, and [STC-****L] is for the lower side.

Model	Corresponding Shape	Model	Corresponding Shape
STC-1623U		STC-1320U	
STC-1623L		STC-1320L	
STC-1925U		STC-2025U	
STC-1925L		STC-2025L	

※Model other than the above shapes is ″STC-SP***U or L″.
STC cartridge cannot accept off set cap tips.

MEMO

Contact

Contact us if there is any damage or machine defects in our products.

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