

INSTRUCTION HANDBOOK

1SDH002301A1001 - ECN000285442

TMAX XT XT7 Disassembly instructions



1. SCOPE

Scope of this document is to illustrate the step-by-step disassembly process of ABB SACE Tmax XT XT7 moulded case circuit breaker equipped with an electronic trip unit (type Ekip DIP LS/I).

Document is focused on Tmax XT XT7 3p IEC version, anyway it allows to cover other versions of Tmax XT XT7 circuit breaker with just few slight differences to be taken into account.

2. SAFETY NOTES

Before proceeding with any disassembly operation, it's mandatory to put the circuit breaker in open position.

Disassembly operations of circuit breakers must be performed by qualified and skilled personnel in the electrical field (IEV 195-04-01: person with relevant education and experience to enable him or her to perceive risks and to avoid hazards which electricity can create) and having a detailed knowledge of circuit breakers.

Disassembly activities must be performed in an ergonomic workspace able to ensure protection of persons demanded to perform disassembly activities.

Applicable national legislation and international standards in force at the time of disassembly of circuit breakers must be taken into account in addition to prescriptions illustrated in this document.

ABB declines any responsibility for injury to people or damage to property resulting from a failure to comply with the instructions set out in this document and with any applicable safety standard.

3. PERSONAL PROTECTIVE EQUIPMENT (PPE)

When performing disassembly, following safety Personal Protective Equipment (PPE) must be worn:



4. TOOLS

Disassembly operations require the use of tools (e.g. screwdriver, torx key, pliers, ...); tools to be used are specified inside each phase of the disassembly process (see Chapter 6).

5. SEPARATE TREATMENT

Table below lists parts requiring a separate treatment adding information about part location inside circuit breakers and related quantity.

| Description | Position inside circuit breaker | Quantity |
|-----------------------------------|---|----------|
| Cap kits | In correspondence of circuit breaker connection terminals | 6 |
| Support | Mounted on the upper part of the circuit breaker | 1 |
| Cables protection | Mounted on the back part of the trip unit | 1 |
| Rating plug case | Mounted on the front of the trip unit | 1 |
| Rating plug printed circuit board | In the rating plug case | 1 |
| Backplane | Mounted on the back part of the trip unit | 1 |
| Trip unit case | On the trip unit | 1 |
| Trip unit back cover | On the trip unit | 1 |
| Trip unit printed circuit board | In the trip unit | 1 |
| Left MID cover | Mounted on the left part of the circuit breaker | 1 |
| Left MID | Mounted on the left part of the circuit breaker | 1 |
| Left base | Mounted on the left part of the circuit breaker | 1 |
| Block lever | Mounted on the left part of the circuit breaker | 1 |
| Trip coil | In the trip coil group | 1 |
| Trip coil group | Mounted on the left part of the circuit breaker | 1 |
| Trip test support | Mounted on the right part of the circuit breaker | 1 |
| MID | Mounted on the right part of the circuit breaker | 1 |
| SY lever | Mounted on the MID | 1 |
| Wires cover | Mounted on the left part of the circuit breaker | 1 |
| Wiring | Mounted on the left part of the circuit breaker | 1 |
| Operating mechanism | Mounted on the center of the circuit breaker | 1 |
| Unlocking shaft appendices | Mounted on the pin of the operating mechanism | 2 |
| Lever extension | Mounted on the front toggle | 1 |
| Protections | Mounted on the upper case assembly | 2 |
| Fixed contacts protections | Mounted on the fixed contacts | 3 |
| Covers | Below the sensors | 3 |
| Sensors | In the bottom part of the circuit breaker | 3 |
| Insulation protections | On the moving contacts assembly | 3 |

If disassembled parts require a separate treatment a specific indication is provided inside each phase with reason why for the separate treatment (see Chapter 6).

6. DISASSEMBLY PROCESS

Circuit breakers disassembly process is constituted by a sequence of operations to be performed on products after their dismounting from original installation. For each phase following information are provided:

- Part/parts to be disassembled (title of the phase)
- Tools to be used
- Description of actions to be performed
- Pictures showing actions to be performed
- List, quantity and picture of disassembled parts with an indication about separate treatment (when applicable)
- In case of potential hazards signal below is reported



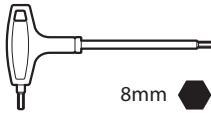
6.1 PHASE 1 – CAP KITS

Tools

Cross screwdriver



Allen key

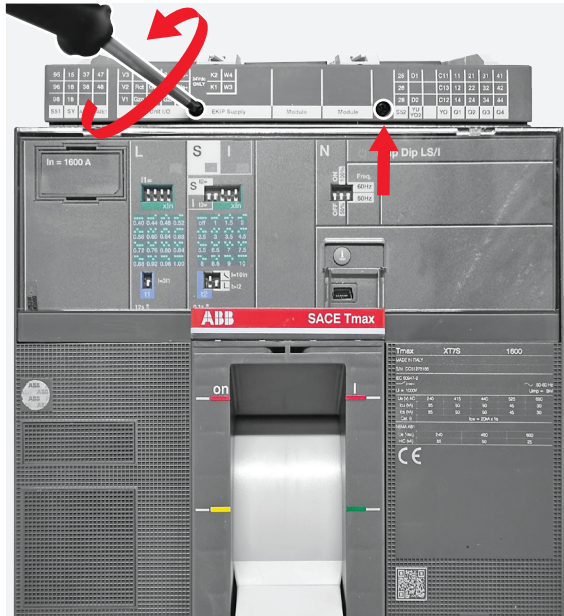


Flat screwdriver



Actions to be performed

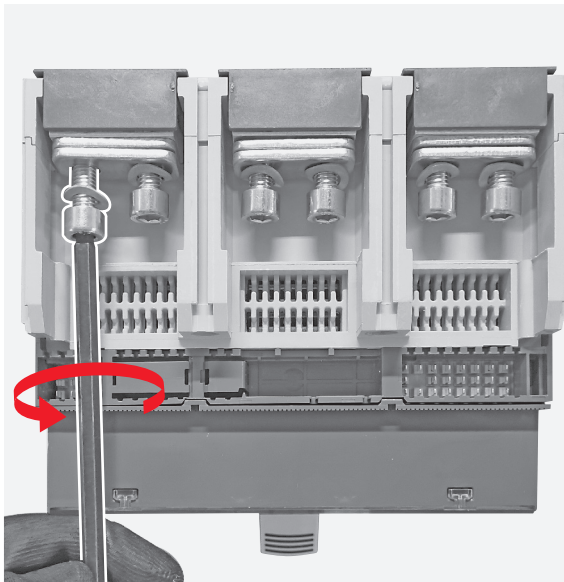
1 By means of the cross screwdriver unscrew the 2 screws fixing the terminal clamp to the circuit breaker main structure.



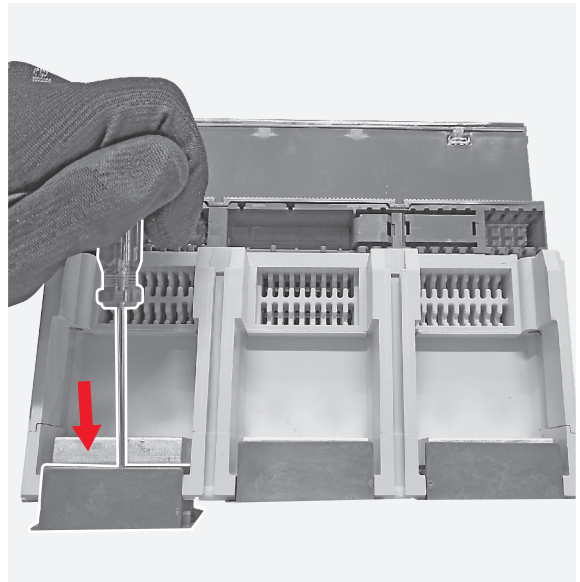
2 Manually remove the terminal clamp.



3 By means of the allen key remove the screws connected with the cap kits and after manually remove the plates.

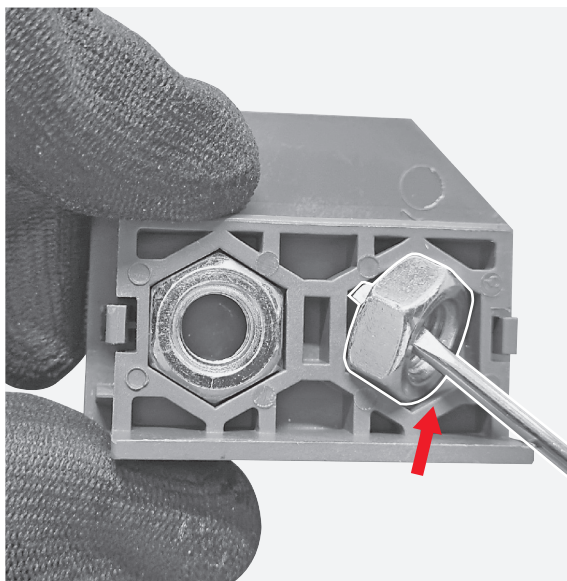


4 By means of the flat screwdriver push the cap kits in order to remove them from the circuit breaker main structure.

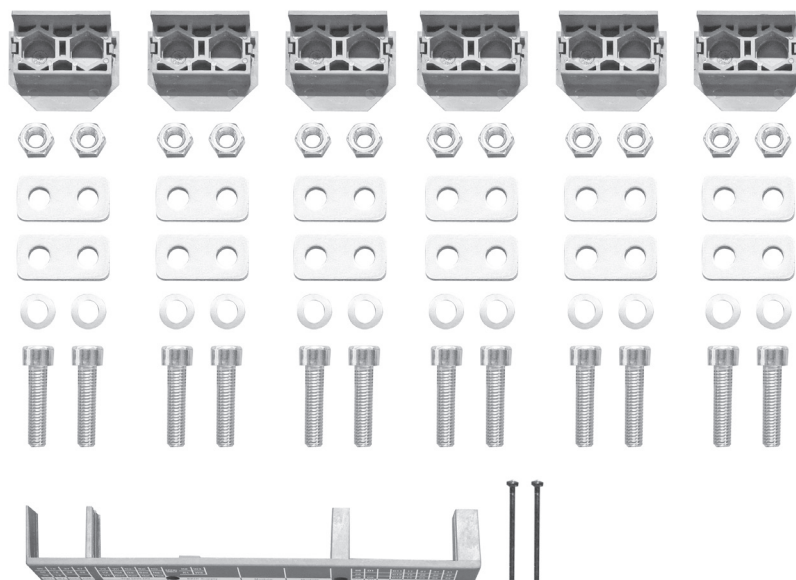


5

By means of the flat screwdriver remove the nuts mounted on the cap kits.



Disassembled parts



- 1 terminal clamp (Plastic)
- 2 screws (Metal)
- 12 screws and related washers (Metal)
- 12 plates (Metal)
- 6 cap kits (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 12 nuts (Metal)

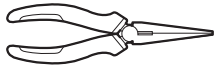
6.2 PHASE 2 – CIRCUIT BREAKER FRONT COVER AND OPERATING MECHANISM COVER

Tools

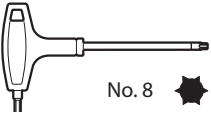
Cross screwdriver



Pliers



Torx key

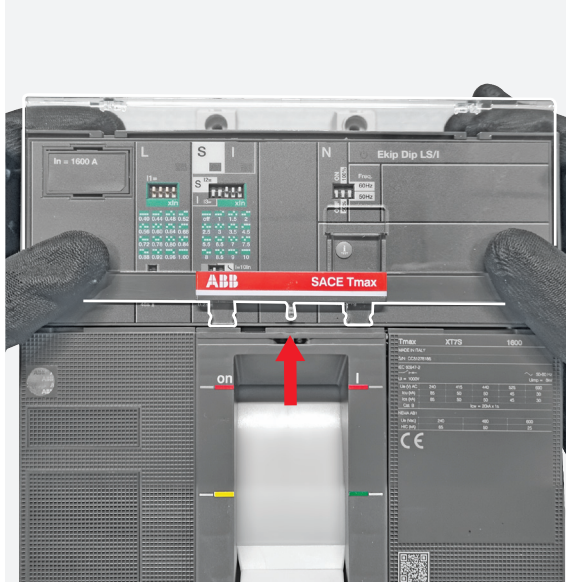


No. 8

Actions to be performed

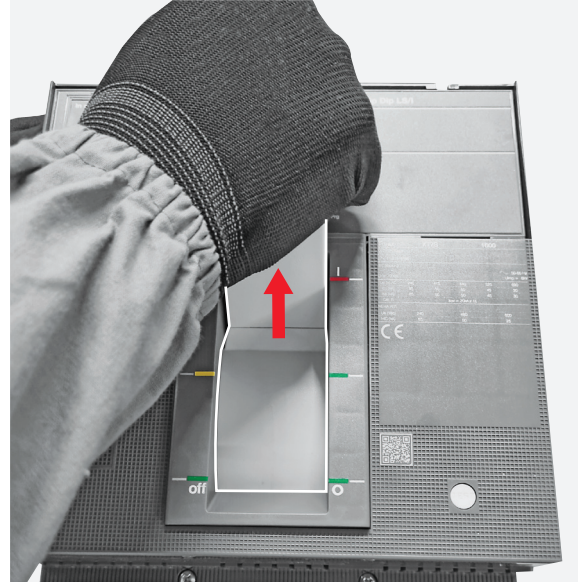
6

Manually push the trip unit transparent protection as indicated by the arrow and remove it.



7

Manually close the circuit breaker pushing the toggle in the direction indicated by the arrow.



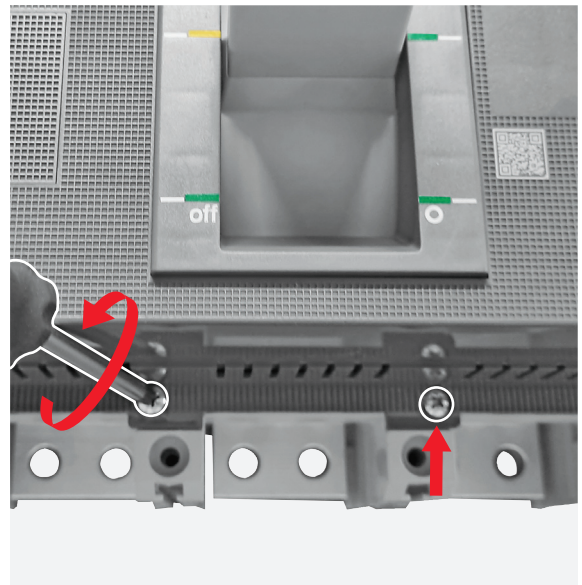
8

By means of the cross screwdriver push the trip test button.



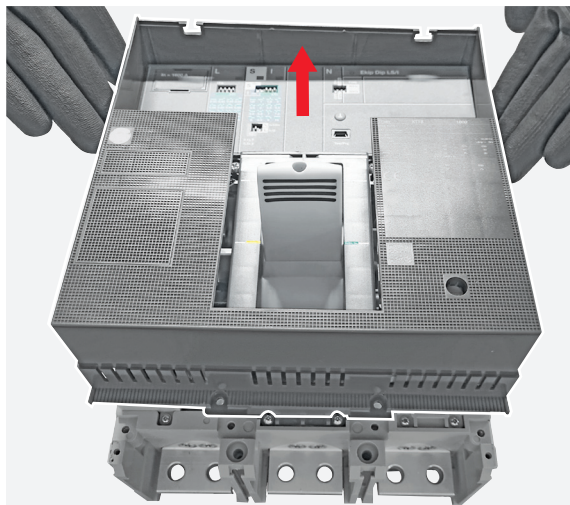
9

By means of the cross screwdriver unscrew the 2 screws located in the lower part of the circuit breaker fixing the circuit breaker front cover to the circuit breaker main structure.

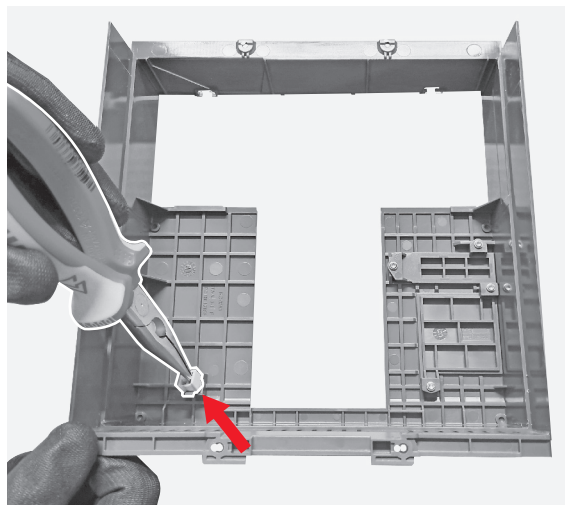


10

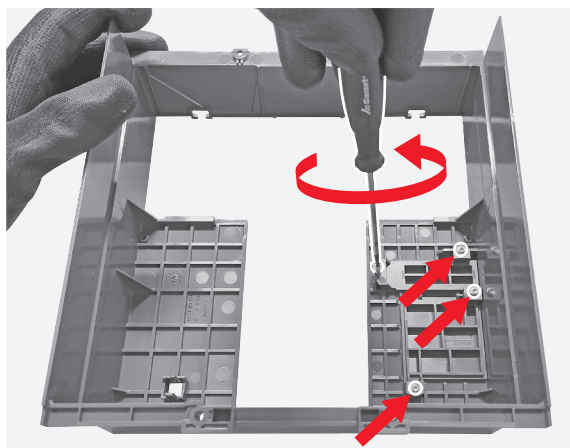
Manually lift the circuit breaker front cover to complete the removal.

**11**

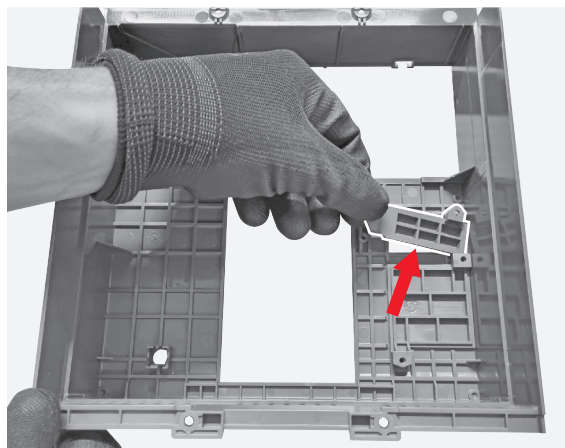
By means of the pliers remove the trip test button.

**12**

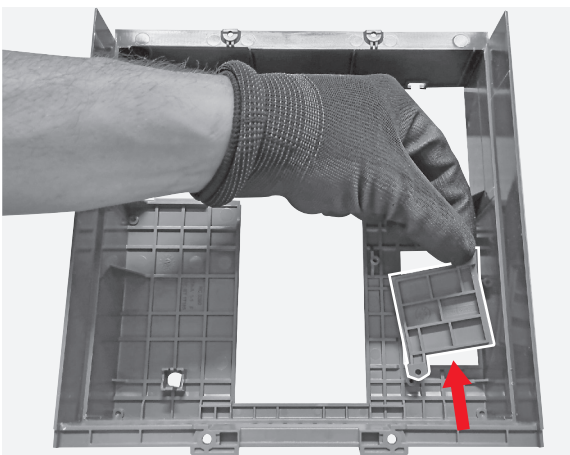
By means of the tork key remove the 4 screws fixing the 2 keylock caps to the circuit breaker front cover.

**13**

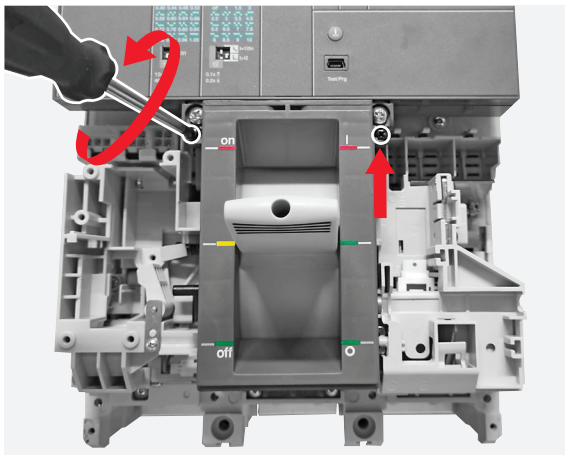
Manually remove the upper keylock cap.

**14**

Manually remove the lower keylock cap.

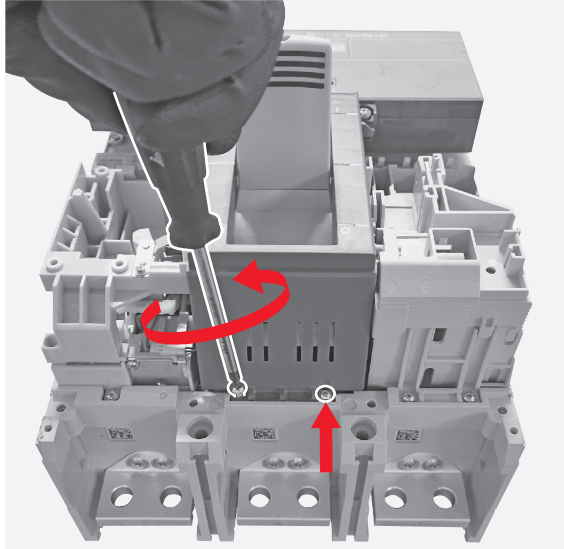
**15**

By means of the cross screwdriver, unscrew the 2 screws located in the upper part of the operating mechanism front cover fixing the operating mechanism cover to the circuit breaker main structure.

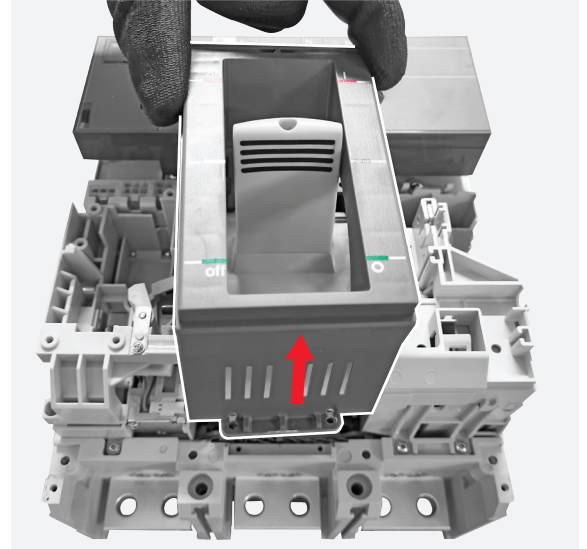


16

By means the cross screwdriver, unscrew the 2 screws located in the bottom part of the operating mechanism front cover fixing the operating mechanism cover to the circuit breaker main structure.

**17**

Manually lift the operating mechanism cover.

**Disassembled parts**

- 1 trip unit transparent protection (Plastic)
- 2 + 4 + 2 + 2 screws (Metal)
- 1 circuit breaker front cover (Plastic)
- 1 trip test button (Plastic)
- 2 keylock caps (Plastic)
- 1 operating mechanism cover (Plastic)

6.3 PHASE 3 – TRIP UNIT

Tools

Cross screwdriver



Torx key

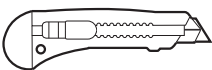


No. 8
No. 20

Flat screwdriver



Cutter



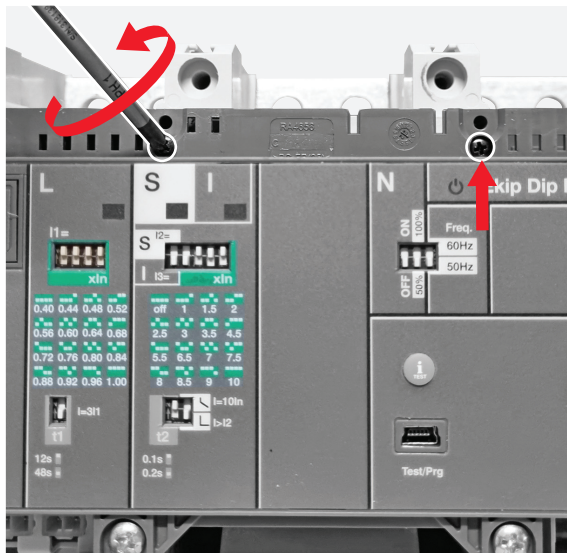
Pliers



Actions to be performed

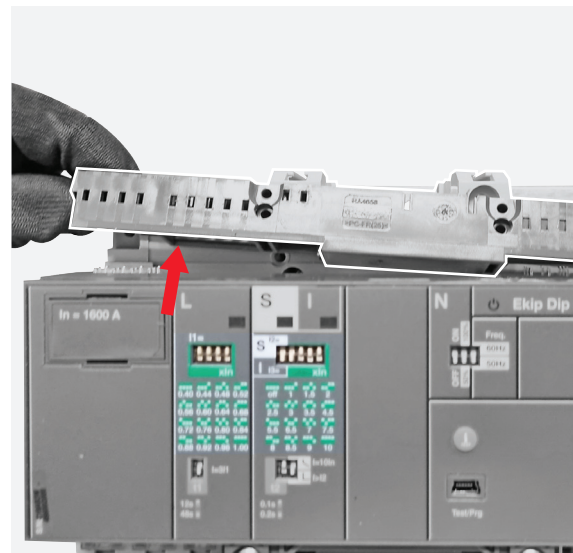
18

By means of a cross screwdriver unscrew the 2 screws fixing the support to the circuit breaker main structure.



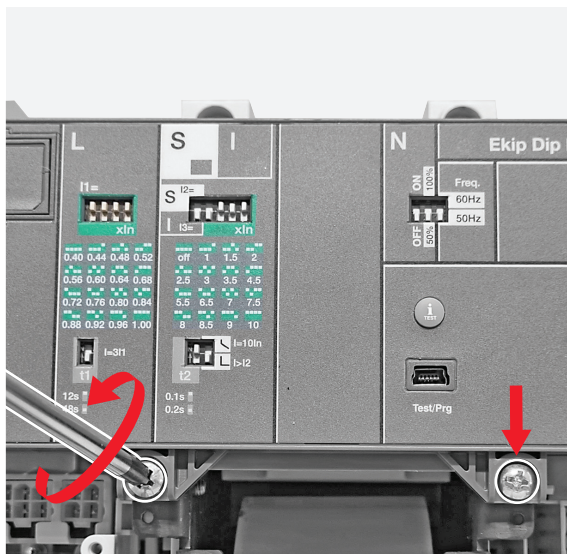
19

Manually remove the support.



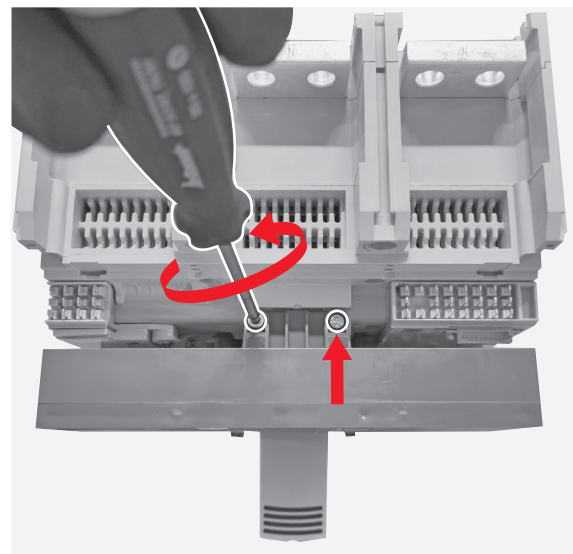
20

By means of the cross screwdriver unscrew the 2 screws located in the bottom part of the trip unit and fixing the trip unit to the circuit breaker main structure.



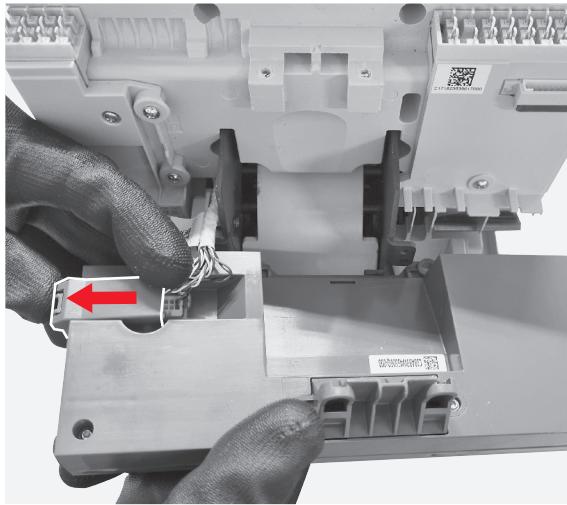
21

By means of the torx key (size 20) unscrew the 2 screws located over the trip unit fixing the trip unit to the circuit breaker main structure.

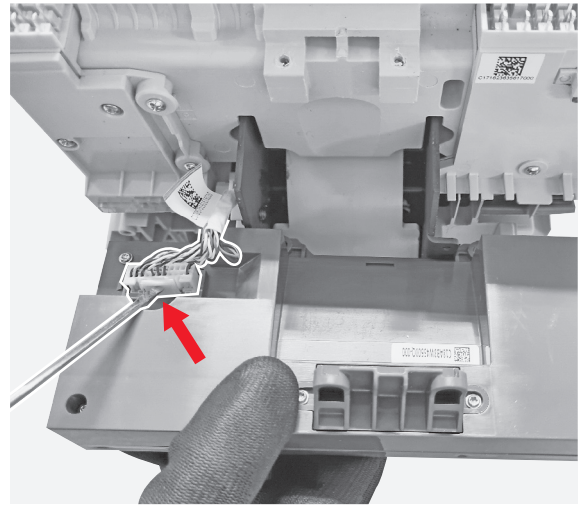


22

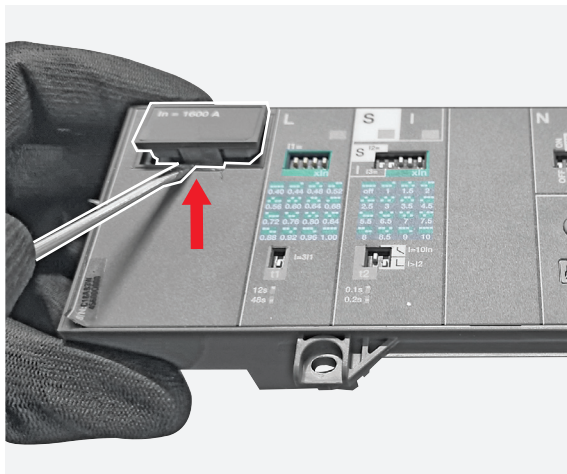
Manually push the cables protection as indicated by the arrow and remove it.

**23**

By means of the flat screwdriver disconnect the connector from the trip unit and after manually complete the removal of the trip unit.

**24**

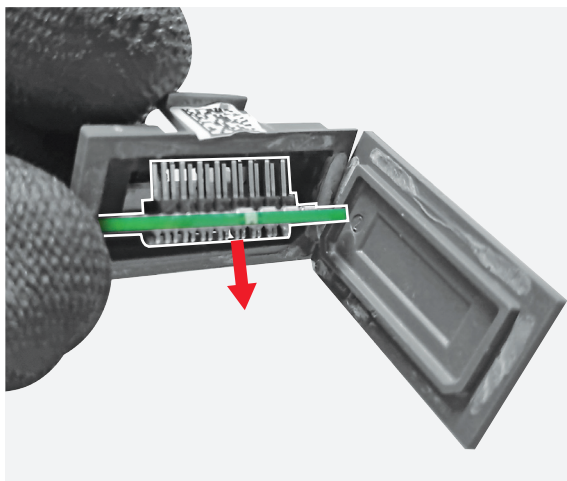
By means of the flat screwdriver remove the rating plug from the trip unit.

**25**

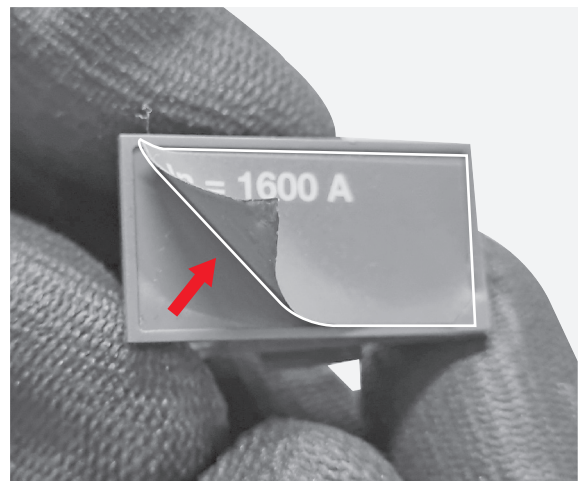
By means of the flat screwdriver open the rating plug.

**26**

Let the rating plug printed circuit board mounted inside the rating plug let fall by gravity.

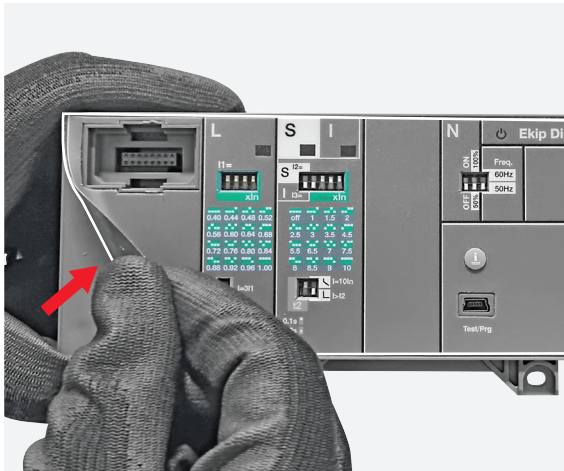
**27**

By means of the cutter start removing the label located on the front of the rating plug case and manually complete the operation.

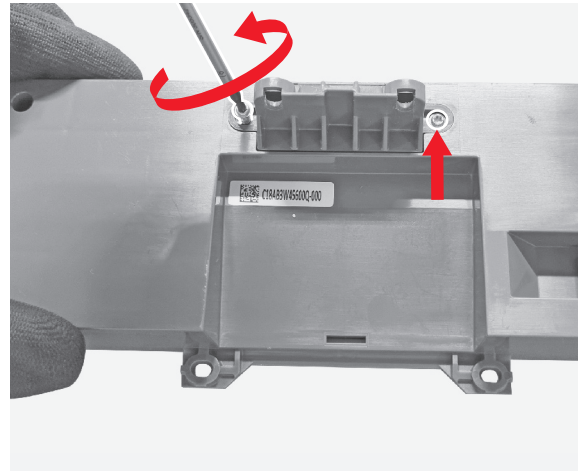


28

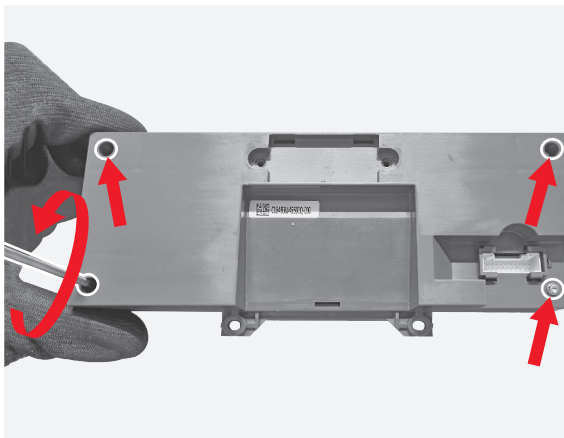
By means of the cutter start removing the label located on the front of the trip unit and manually complete the operation.

**29**

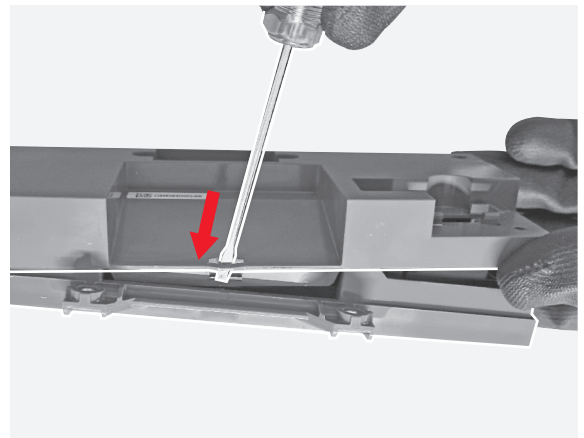
By means of the torx key (size 8) unscrew the 2 screws fixing the backplane to the trip unit and after manually remove the backplane.

**30**

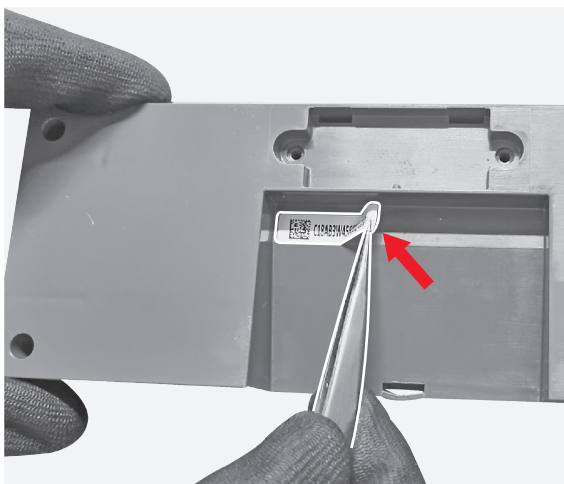
By means of the torx key (size 8) uncrew the 4 screws fixing the trip unit case to the trip unit back cover.

**31**

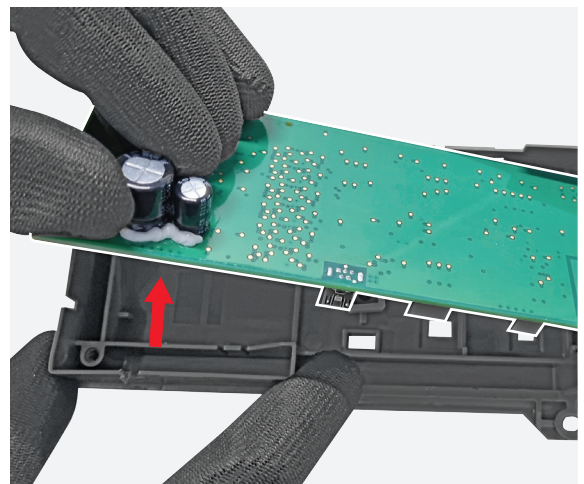
By means of the flat screwdriver separate the trip unit case from the trip unit back cover.

**32**

By means of the cutter start removing the trip unit Data Matrix label located on the trip unit back cover and by means of the pliers complete the operation.

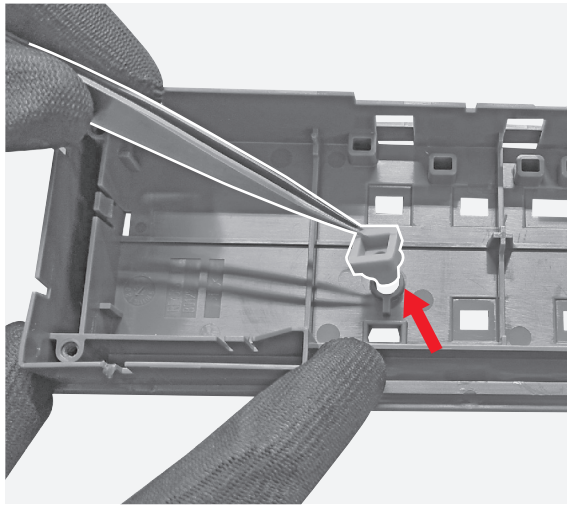
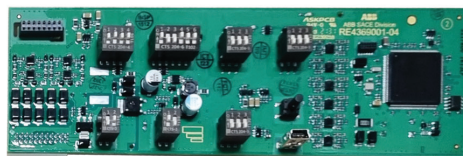
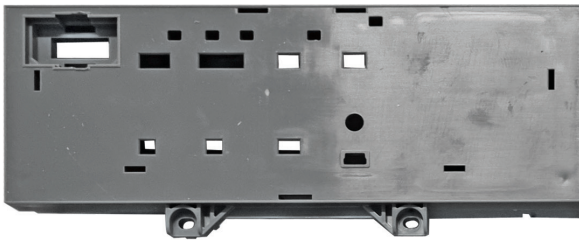
**33**

Manually remove the printed circuit board from the trip unit case.



34

By means of the pliers remove the “i TEST” pushbutton from the trip unit case.

**Disassembled parts**

- 1 support (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 2 + 2 + 2 + 2 + 4 screws (Metal)
- 1 cables protection (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 rating plug case (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 rating plug printed circuit board (Plastic, Metal and Electronic components) SEPARATE TREATMENT (Printed circuit board)
- 1 rating plug label (Adhesive paper)
- 1 trip unit label (Adhesive paper)
- 1 backplane (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 trip unit case (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 trip unit back cover (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 trip unit Datamatrix label (Adhesive paper)
- 1 trip unit printed circuit board (Plastic, Metal and Electronic components) SEPARATE TREATMENT (Printed circuit board)
- 1 “i TEST” pushbutton (Rubber)

6.4 PHASE 4 – ASSEMBLIES MOUNTED ON CIRCUIT BREAKER LEFT SIDE

Tools

Cross screwdriver



Torx key



No. 15

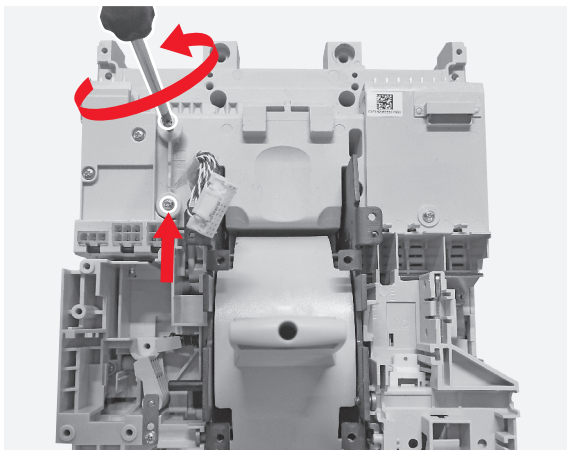
Flat screwdriver



Actions to be performed

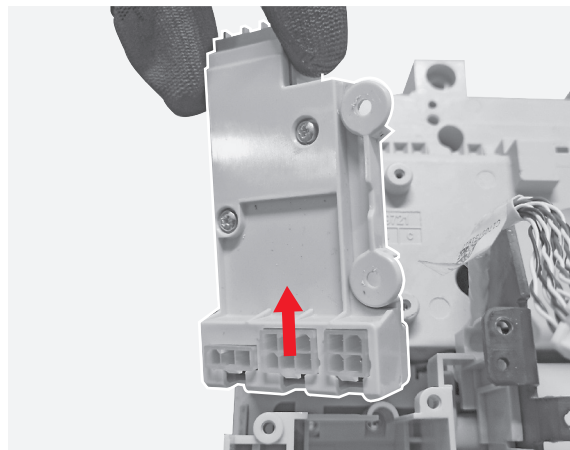
35

By means of the cross screwdriver unscrew the 2 screws fixing left MID to the circuit breaker main structure.



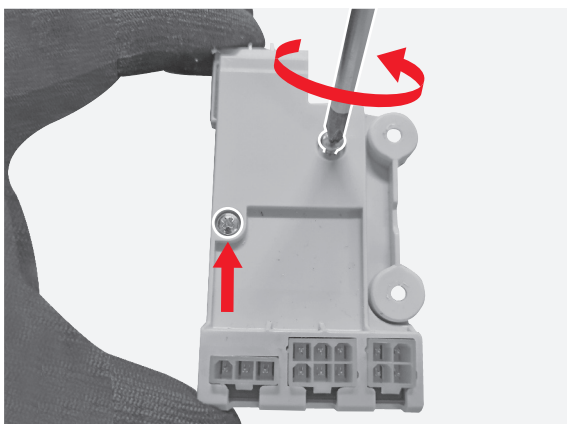
36

Manually remove the left MID.



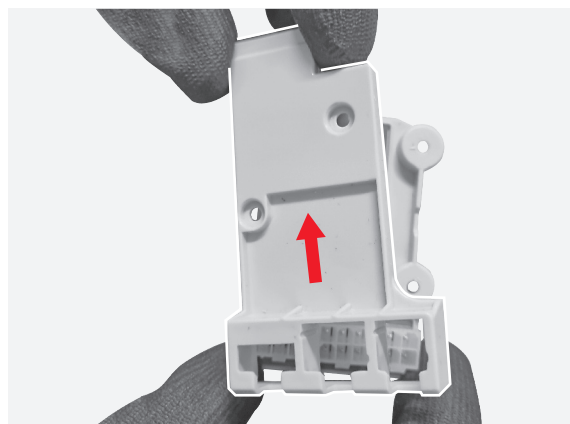
37

By means of the cross screw driver unscrew the 2 screws fixing the left MID cover to left MID main structure.



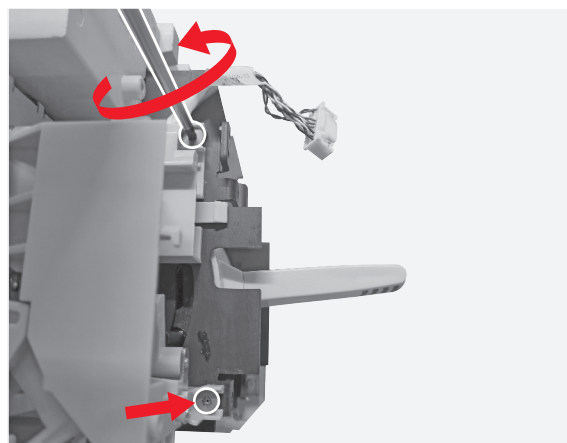
38

Manually remove the cover left MID cover.



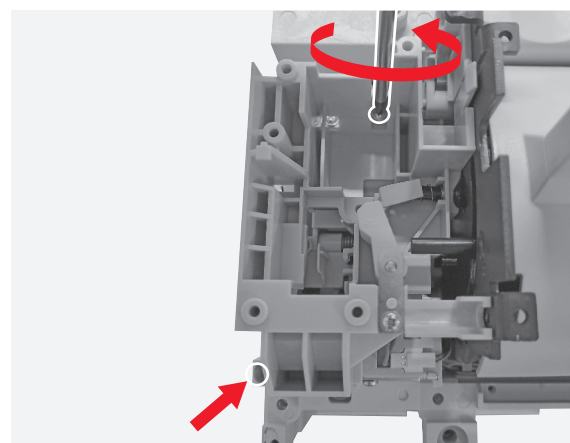
39

By means of the torx key unscrew the 2 screws fixing the left base group to the circuit breaker operating mechanism.



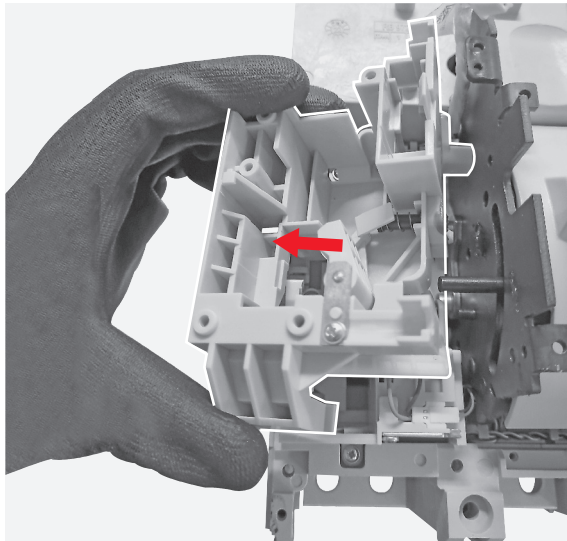
40

By means of the cross screw driver unscrew the 2 screws fixing the left base group to the circuit breaker main structure.

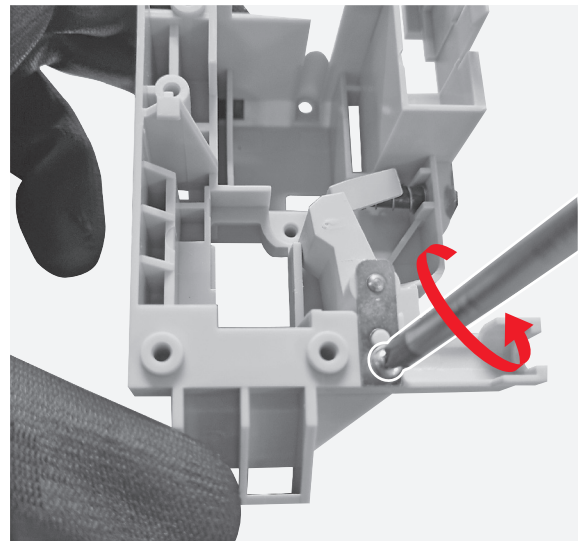


41

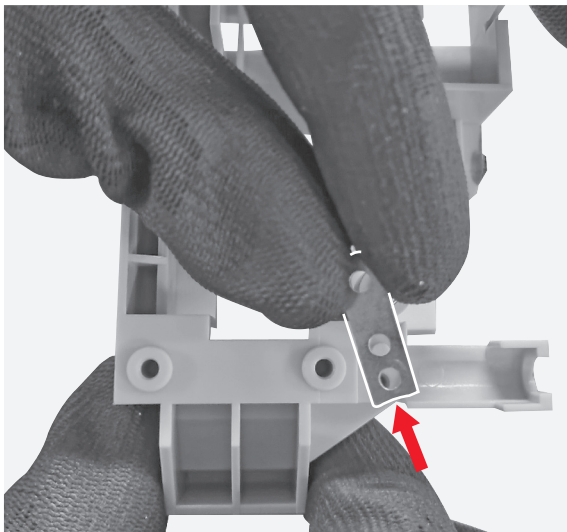
Manually pull the left base group as indicated by the arrow and after complete the removal.

**42**

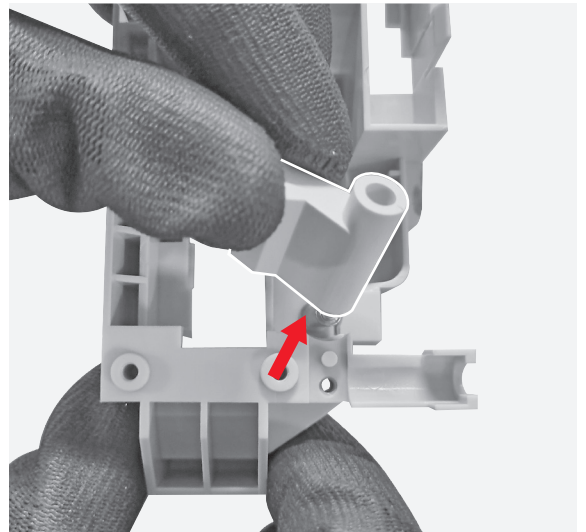
By means of the cross screwdriver unscrew the screw fixing the guide plate pin to the left base group.

**43**

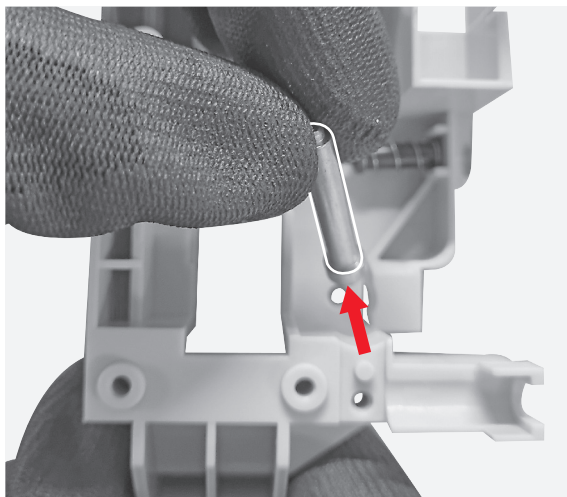
Manually remove the guide plate pin

**44**

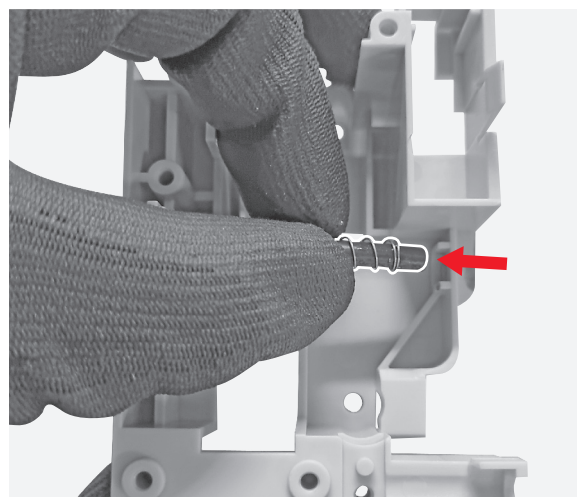
Manually remove the block lever.

**45**

Manually remove the pin.

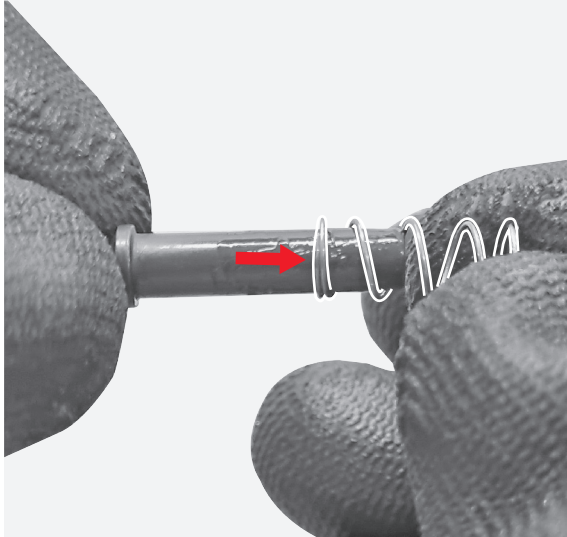
**46**

Manually remove the pin.

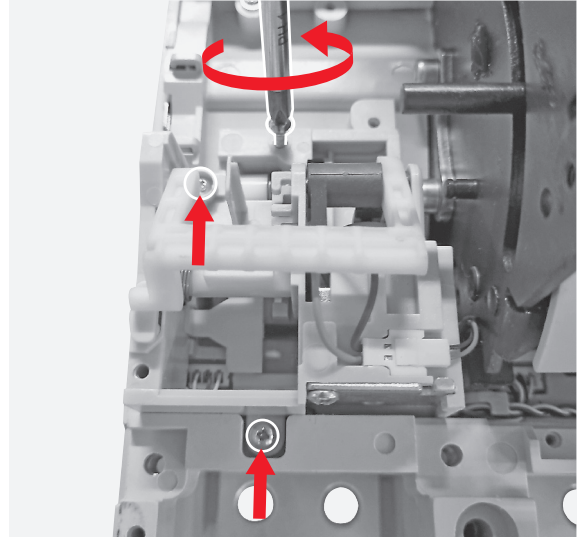


47

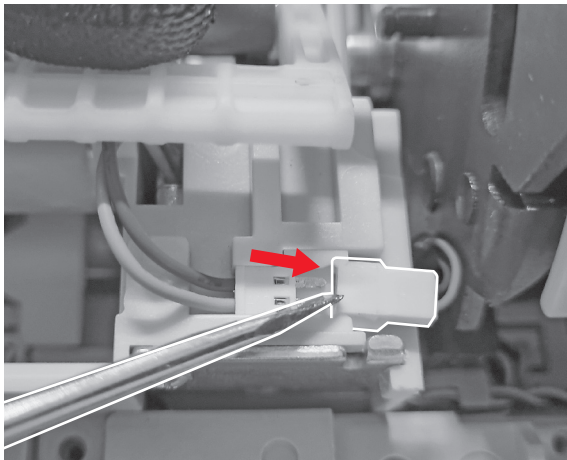
Manually separate the spring from the pin removed at picture 46.

**48**

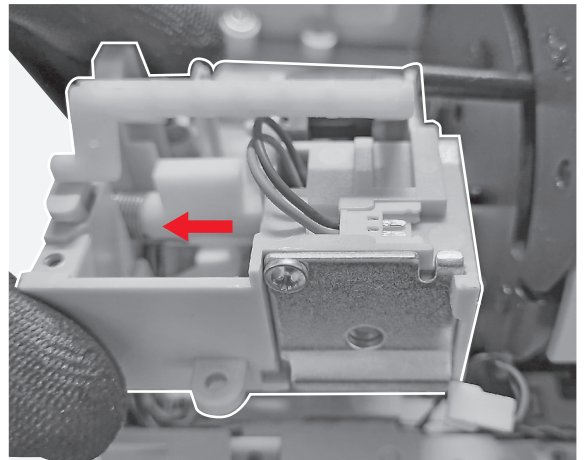
By means of the cross screwdriver unscrew the 3 screws fixing the trip coil group to the circuit breaker main structure.

**49**

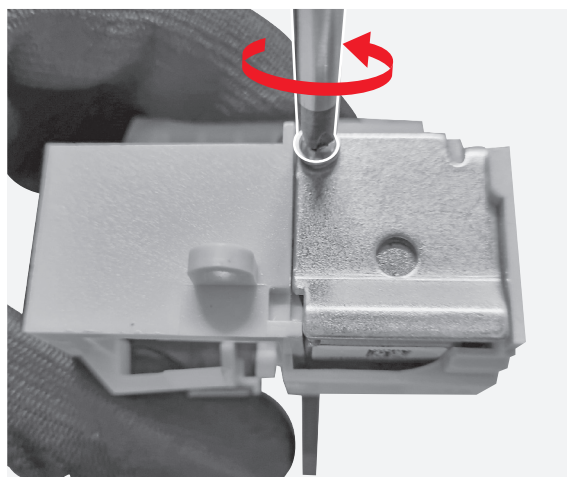
By means of the flat screwdriver unhook the connector from the trip coil group.

**50**

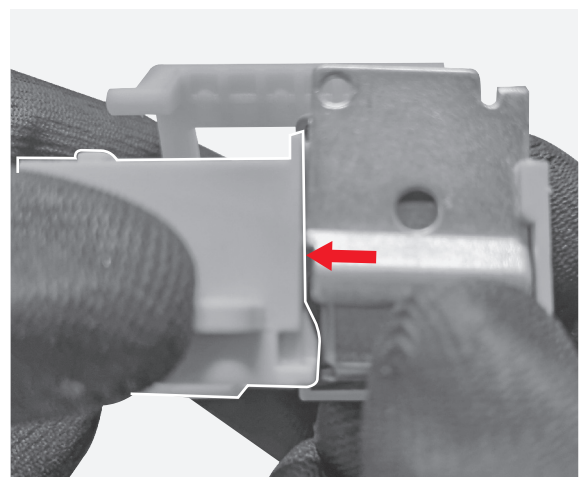
Manually remove the trip coil group pulling it in the direction indicated by the arrow.

**51**

By means of the cross screwdriver unscrew the screw fixing the lower plate to the trip coil.

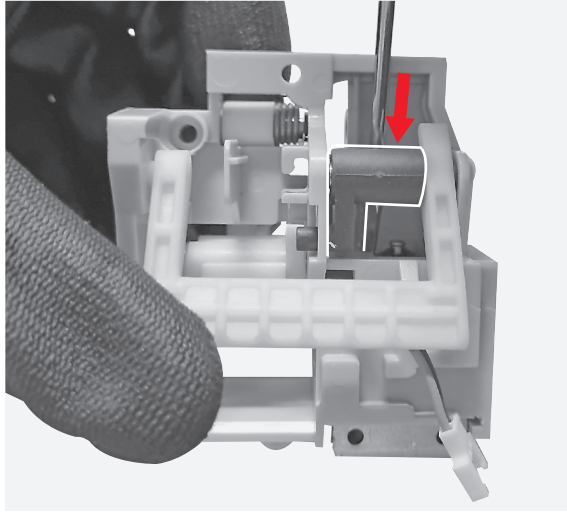
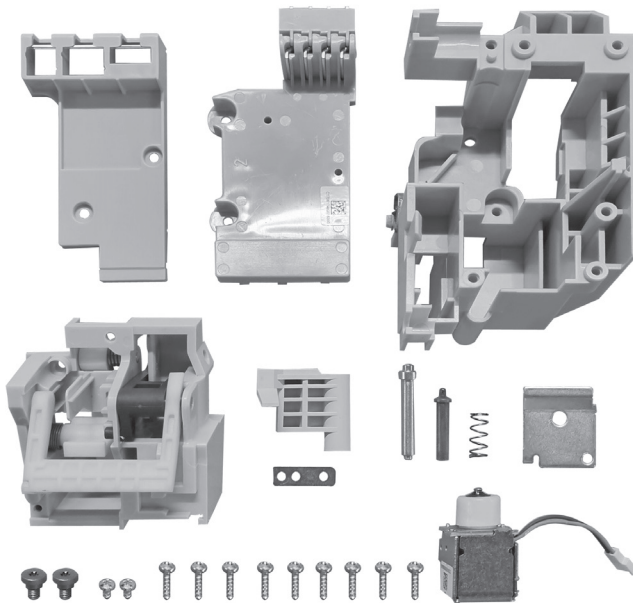
**52**

Manually push the lower plate in order to complete the removal.



53

By means of the flat screwdriver push out from the trip coil group the trip coil.

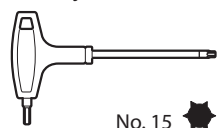
**Disassembled parts**

- 2 + 2 + 2 + 2 + 1 + 3 + 1 screws (Metal)
- 1 left MID cover (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 left MID (Plastic, Metal and Electronic components) SEPARATE TREATMENT (Printed circuit board)
- 1 left base (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 guide plate pin (Metal)
- 1 lower plate (Metal)
- 1 block lever (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 + 1 pins (Metal)
- 1 spring (Metal)
- 1 trip coil (Plastic, Metal and Magnets) SEPARATE TREATMENT (Magnets)
- 1 trip coil group (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)

6.5 PHASE 5 – ASSEMBLIES MOUNTED ON CIRCUIT BREAKER RIGHT SIDE

Tools

Torx key

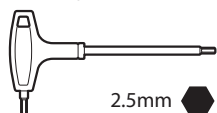


No. 15

Cross screwdriver



Allen key



2.5mm

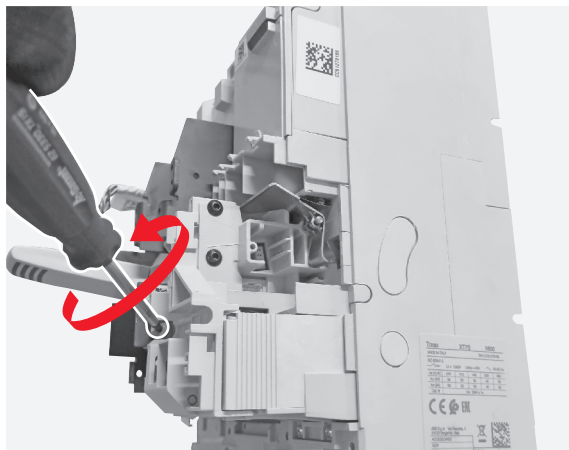
Flat screwdriver



Actions to be performed

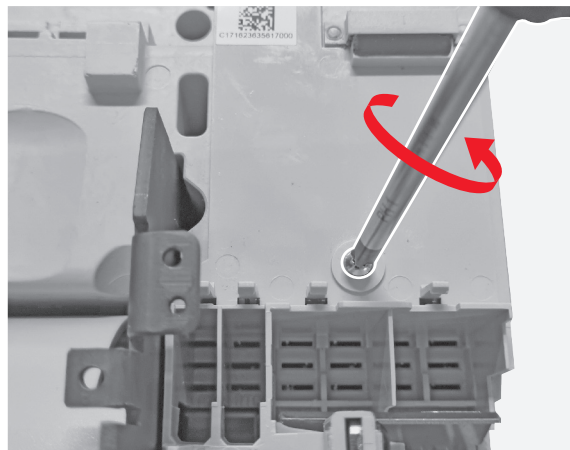
54

By means of the torx key unscrew the screw fixing the trip test group to the operating mechanism.



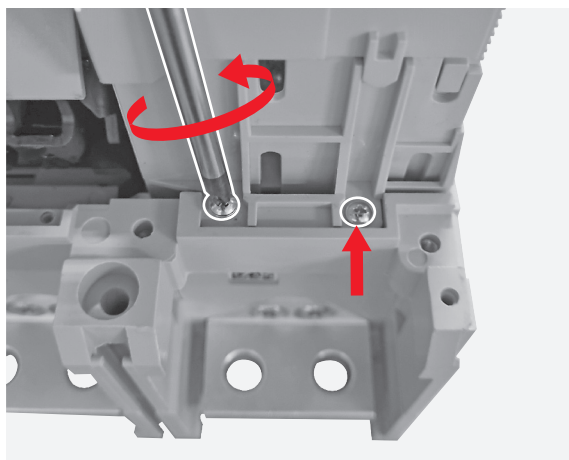
55

By means of the cross screwdriver unscrew the screw located in the upper part of the MID.



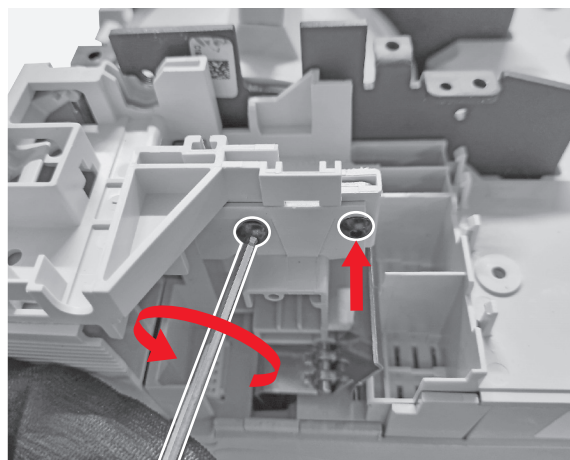
56

By means of the cross screwdriver unscrew the 2 screws located in the lower part of the MID.



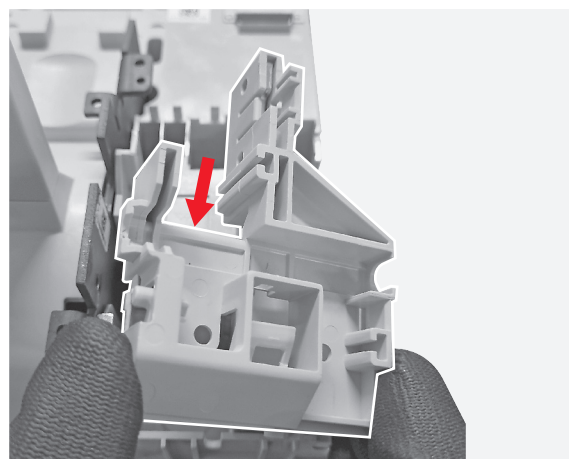
57

By means of the allen key unscrew the 2 screws fixing the trip test group to the MID.



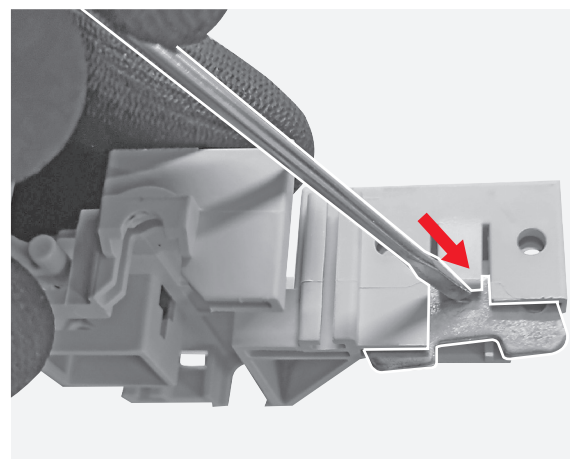
58

Manually complete the removal of the trip test group.



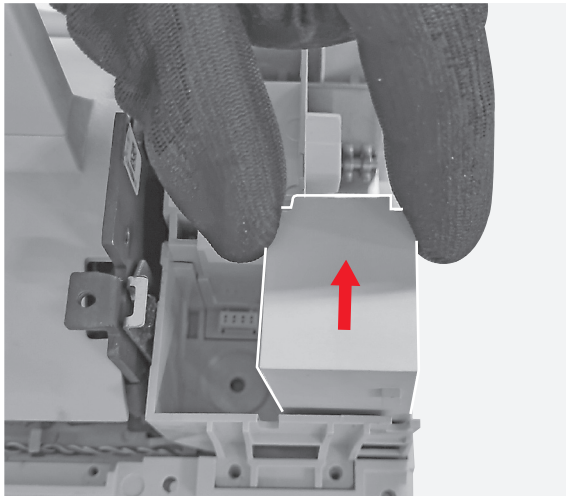
59

By means of the flat screwdriver push out from the trip test group the plate.

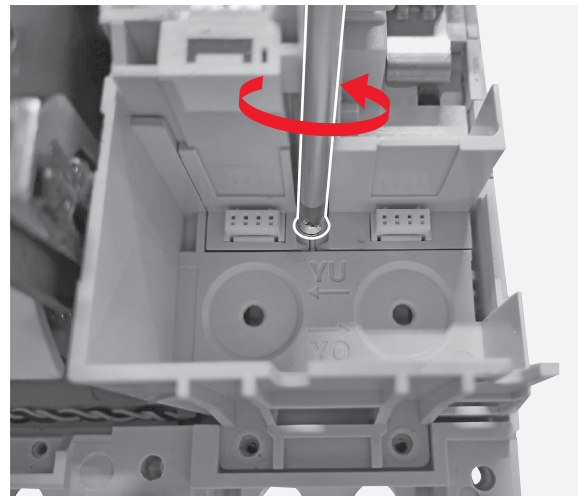


60

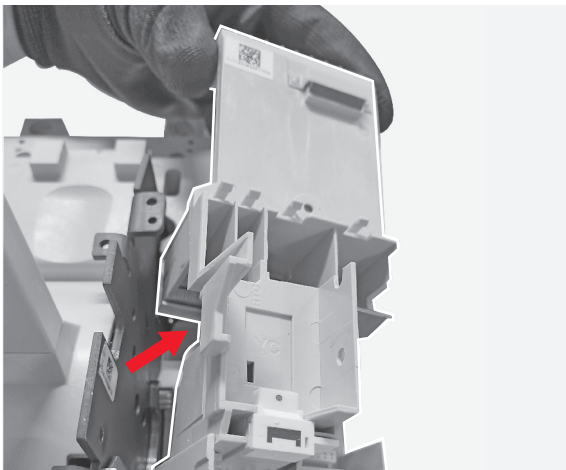
Manually lift and remove the shunt opening release plug.

**61**

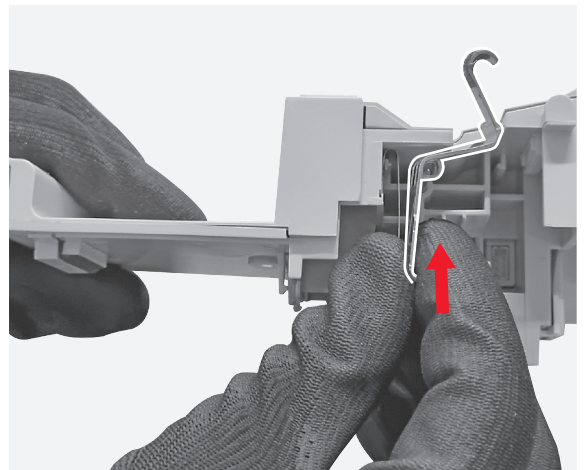
By means of the cross screwdriver unscrew the screw fixing the MID to the circuit breaker main structure.

**62**

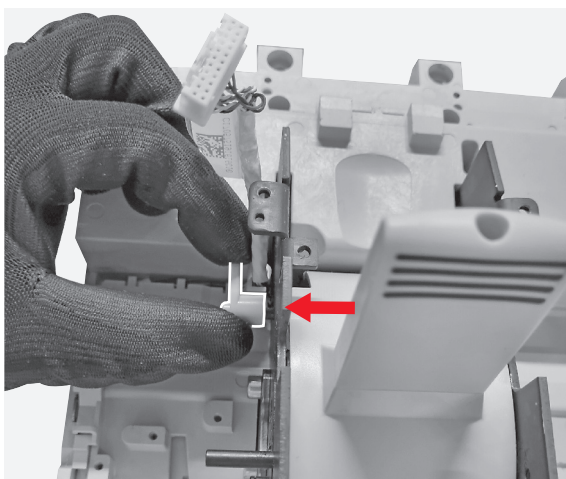
Manually complete the removal of the MID.

**63**

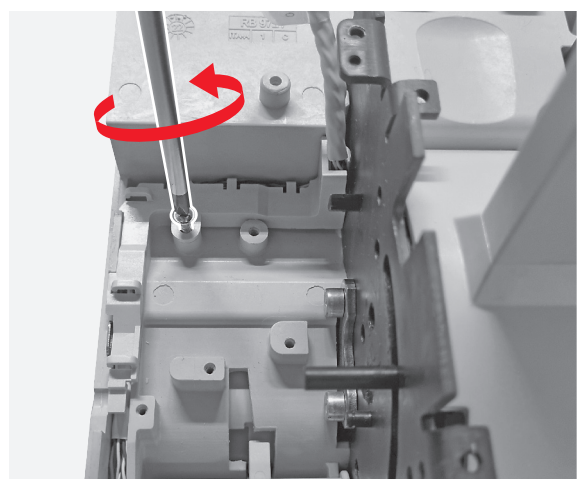
Manually remove the auxiliary contacts lever mounted on the MID.

**64**

Manually remove the SY lever mounted on the left side of the operating mechanism.

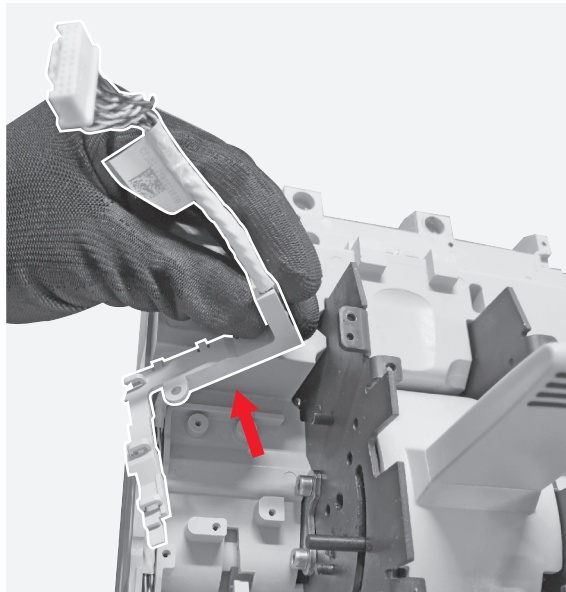
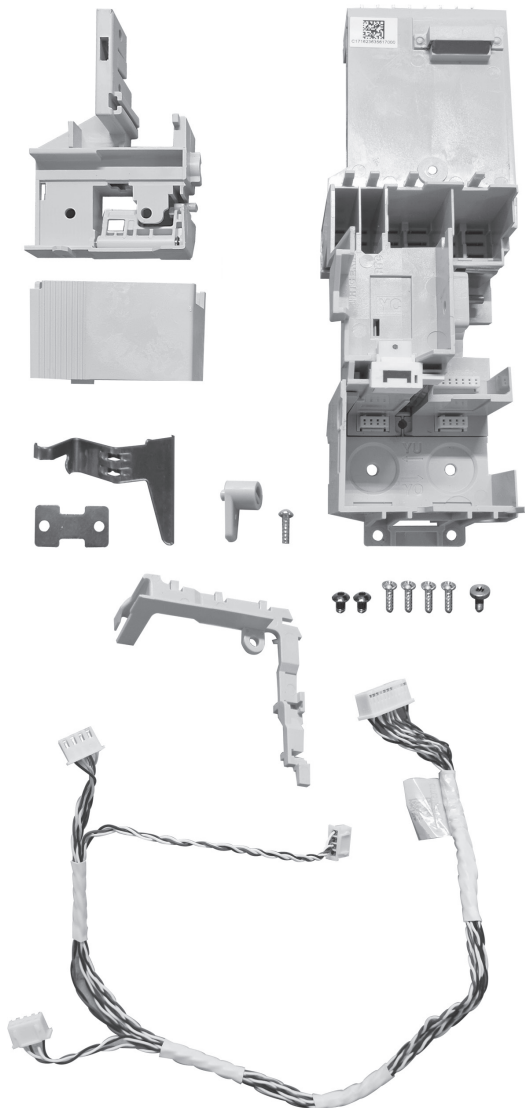
**65**

By means of the cross screwdriver unscrew the screw fixing the wires cover to the circuit breaker main structure.



66

Manually remove the wires cover and the wiring.

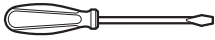
**Disassembled parts**

- 1 + 1 + 2 + 2 + 1 + 1 screws (Metal)
- 1 trip test support (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 plate (Metal)
- 1 shunt opening release plug (Plastic)
- 1 MID (Plastic, Metal and Electronic components) SEPARATE TREATMENT (Printed circuit board)
- 1 auxiliary contacts lever (Metal)
- 1 SY lever (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 wires cover (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 wiring (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)

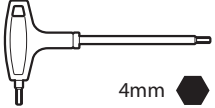
6.6 PHASE 6 – OPERATING MECHANISM

Tools

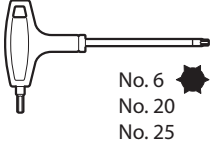
Flat screwdriver



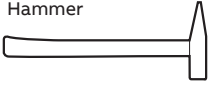
Allen key



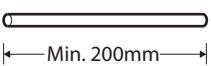
Torx key



Hammer



Rod Ø5mm



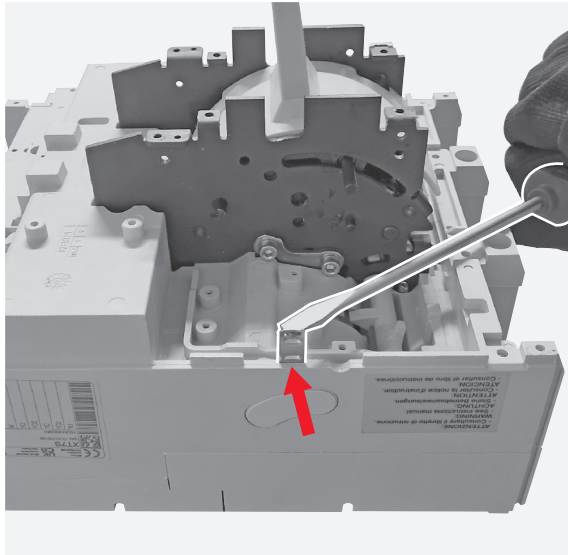
Cross screwdriver



Actions to be performed

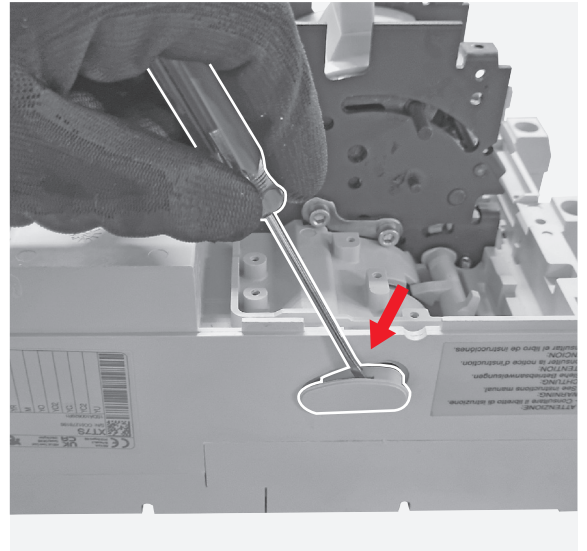
67

By means of the flat screwdriver lift the lever mounted on the left side of the circuit breaker and remove it.



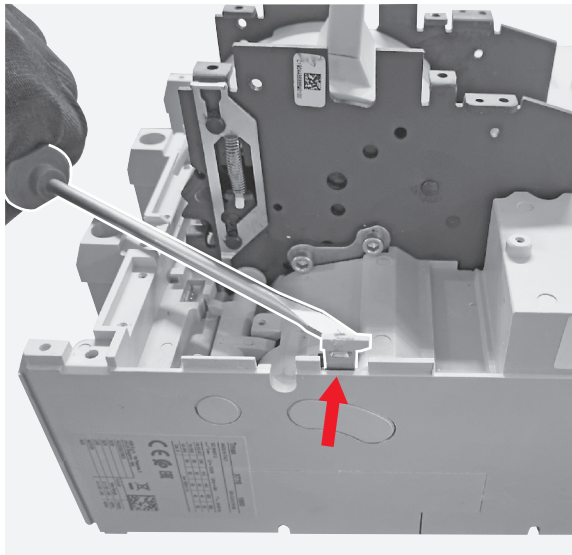
68

By means of the flat screwdriver remove the cover cap on the left side of the circuit breaker.



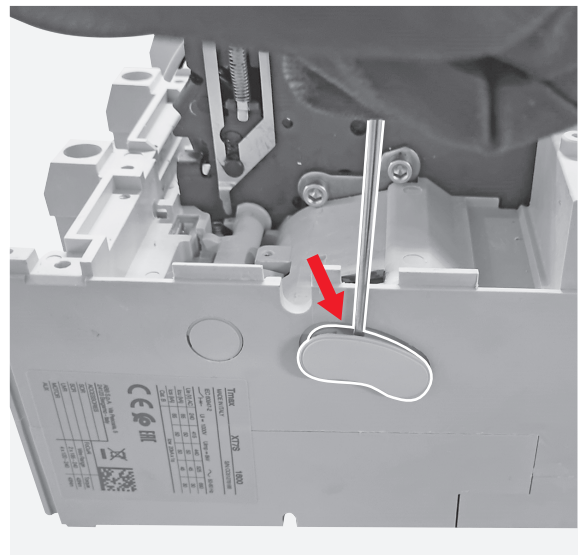
69

By means of the flat screwdriver lift the lever mounted on the right side of the circuit breaker and remove it.



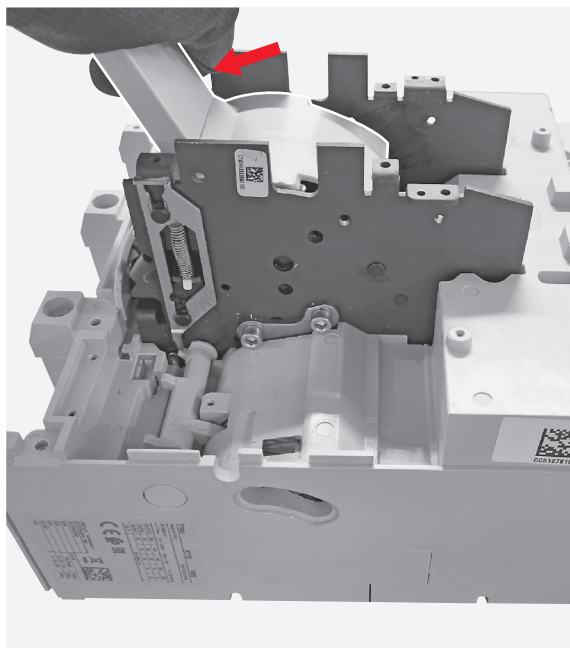
70

By means of the flat screwdriver remove the cover cap on the right side of the circuit breaker.

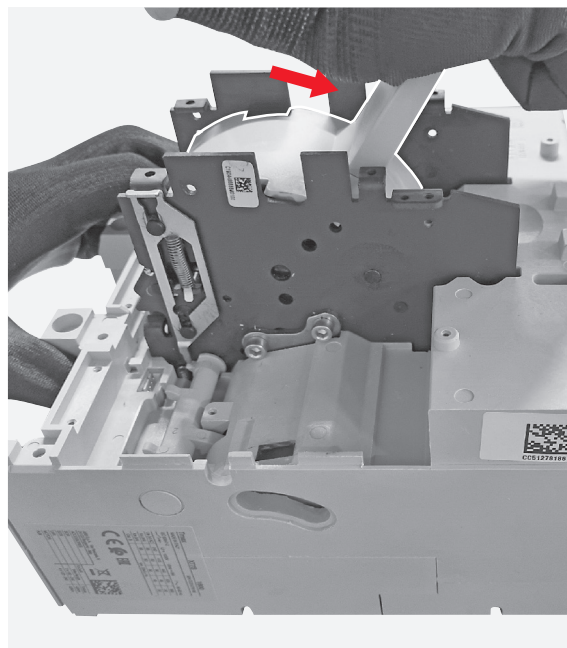


71

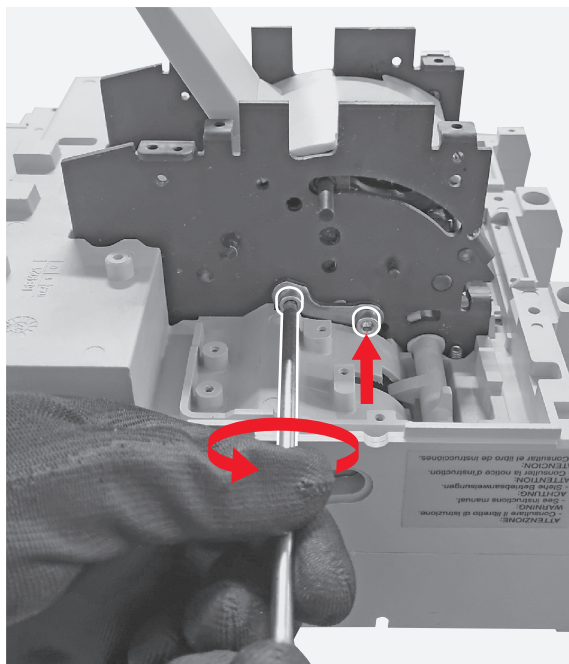
Manually open the circuit breaker.

**72**

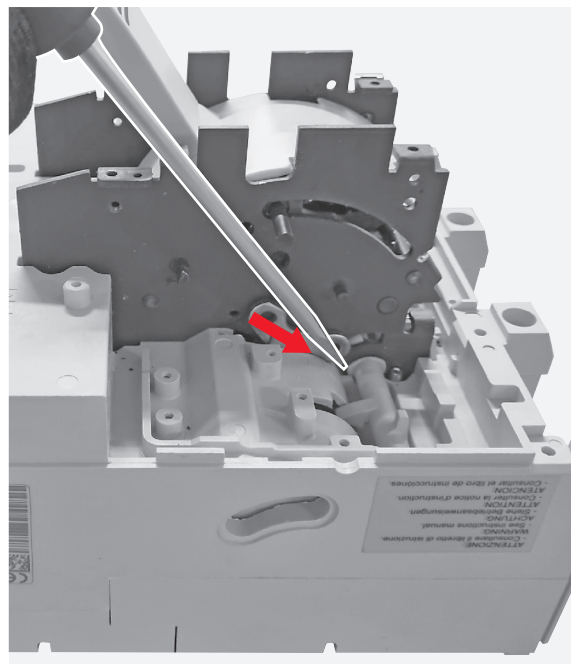
Manually close the circuit breaker.

**73**

By means of the allen key unscrew the 2 screws located on the left side of the operating mechanism.

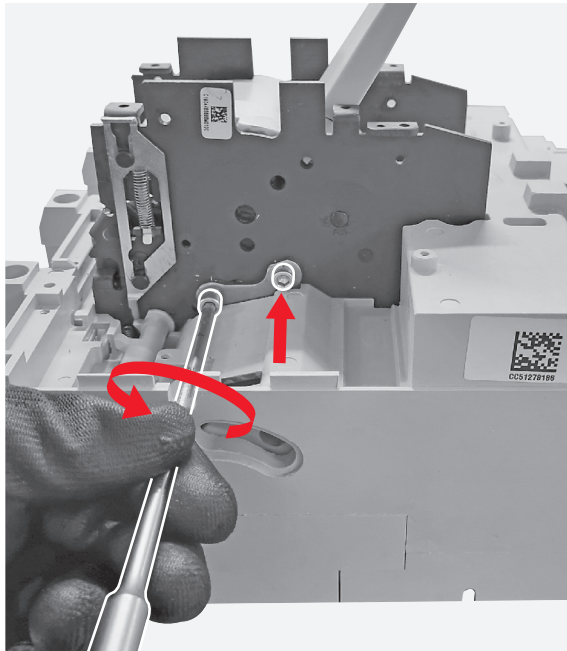
**74**

By means of the flat screwdriver push the shaft support as indicated by the arrow.

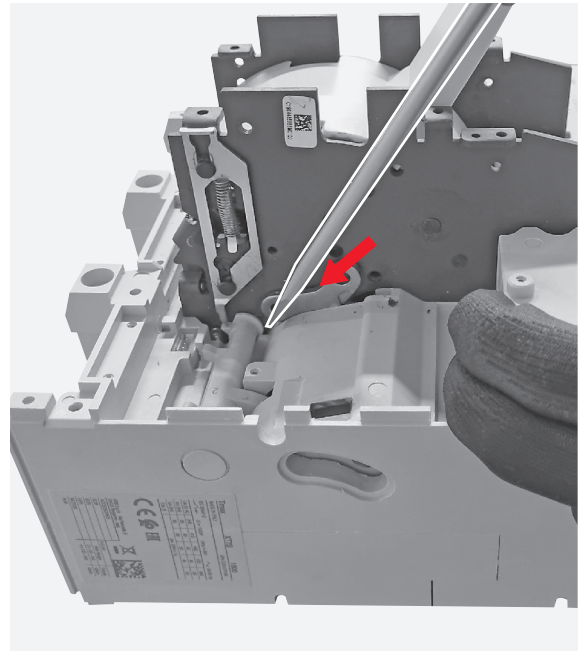


75

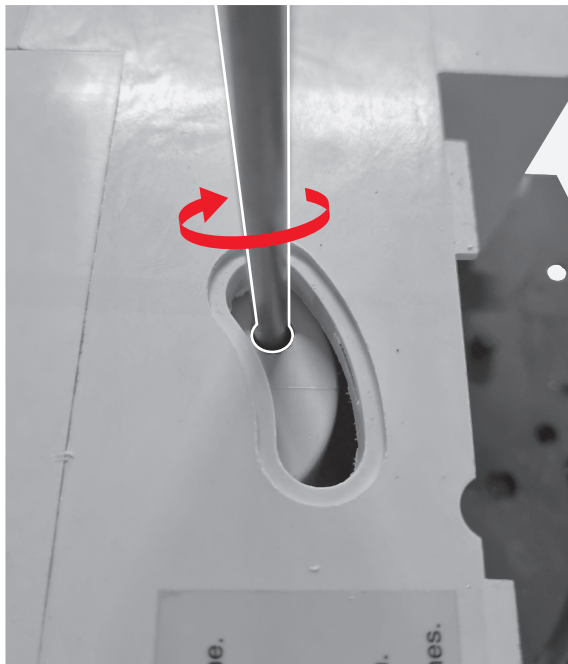
By means of the allen key unscrew the 2 screws located on the right side of the operating mechanism.

**76**

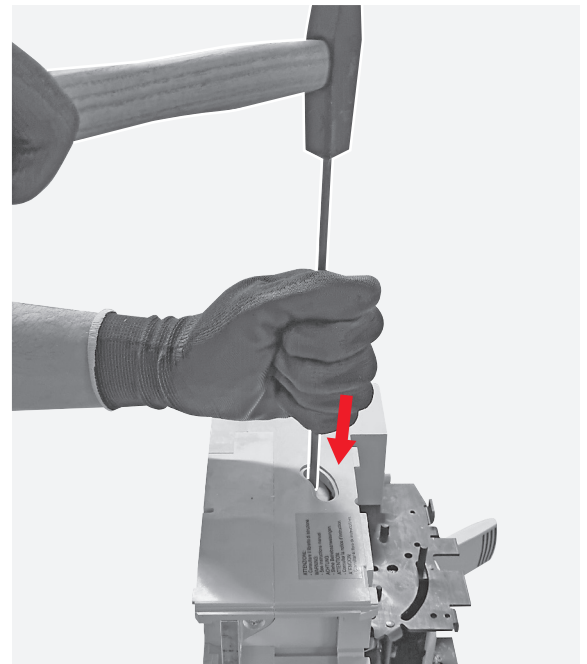
By means of the flat screwdriver push the shaft support as indicated by the arrow.

**77**

Put the circuit breaker with the left side up and insert the rod in the hole left by the cover cap.

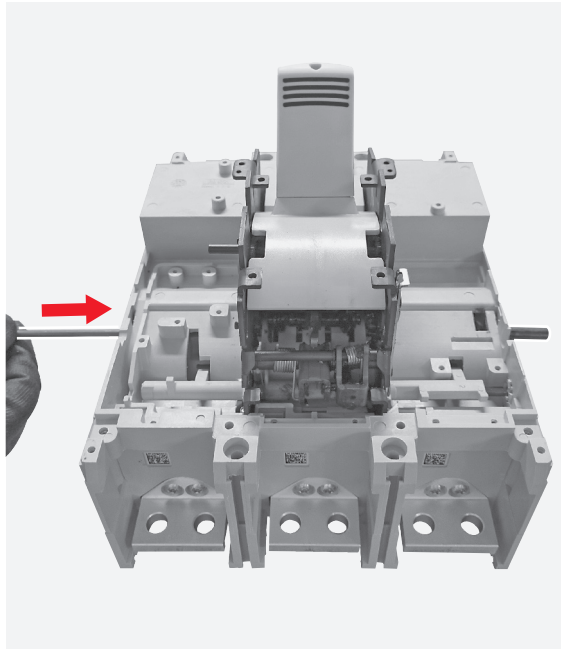
**78**

Push down the rod using the hammer.

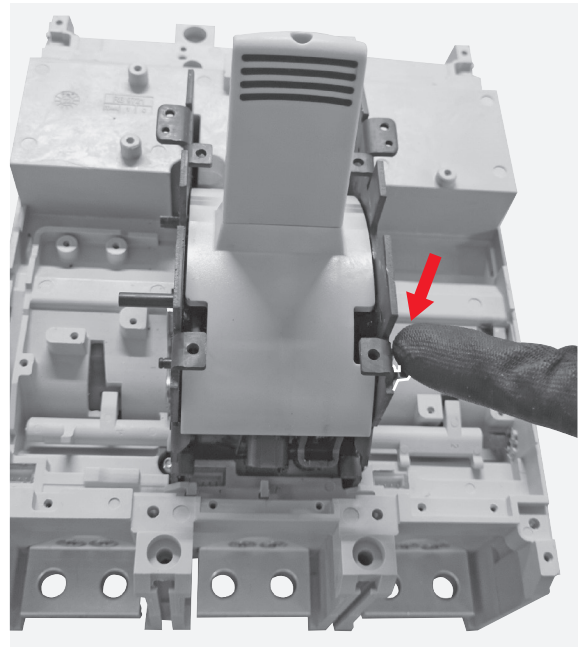


79

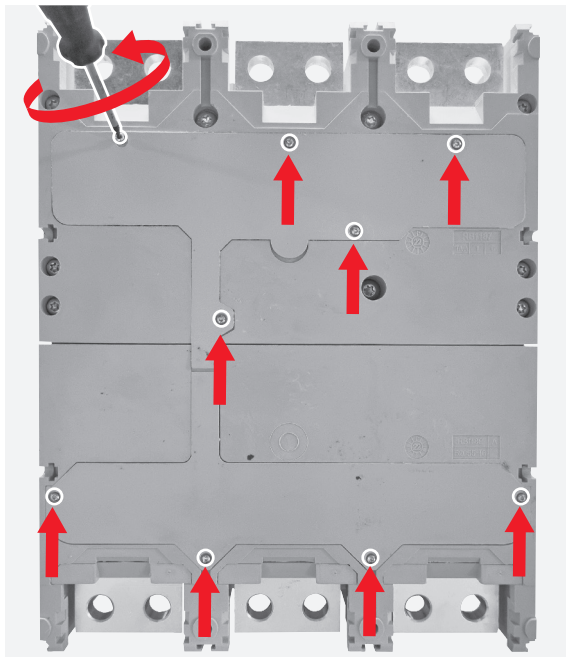
Put the circuit breaker with front up and push the rod as indicated by the arrow until the pin comes out from the hole left by the cover cap on the right side of the circuit breaker and after remove the rod.

**80**

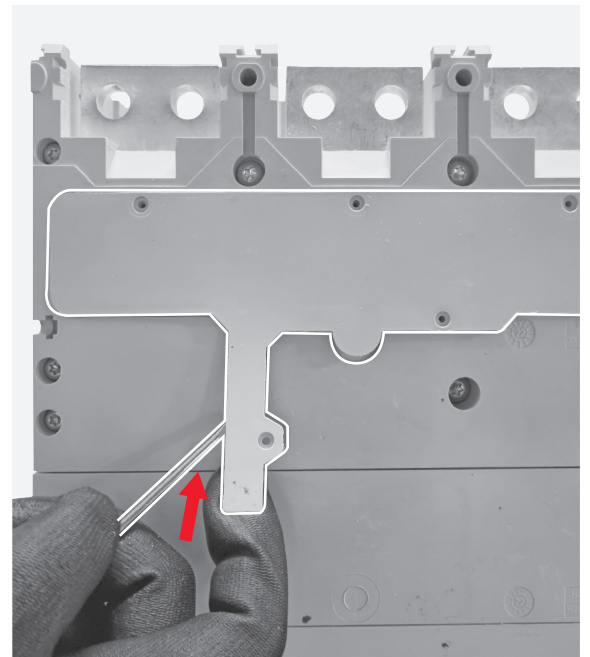
Manually push the lever mounted on the right side of the operating mechanism in order to put the circuit breaker in trip position.

**81**

By means of the torx key (size 6) unscrew the 9 screws fixing the 2 rear plates mounted on the back part of the circuit breaker.

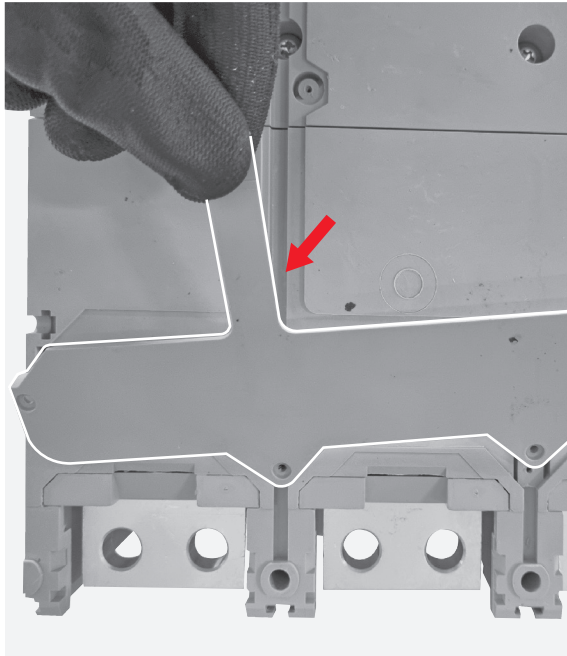
**82**

By means of the flat screwdriver remove the rear plate mounted on the upper part of the circuit breaker.

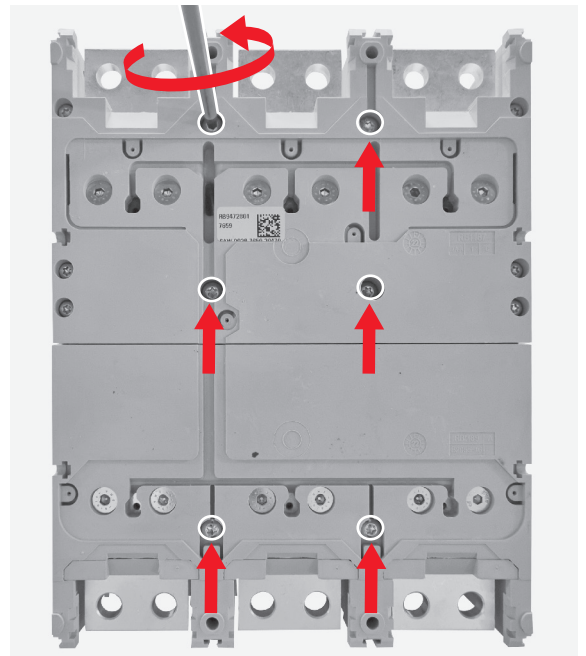


83

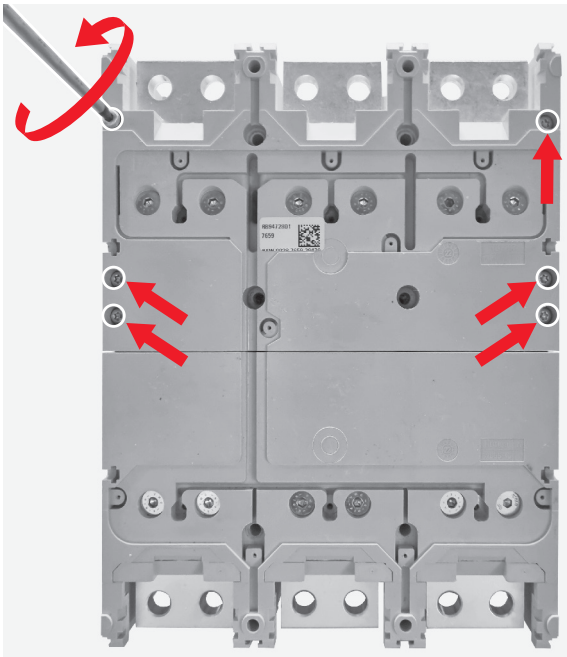
Manually remove the rear plate mounted on the lower part of the circuit breaker.

**84**

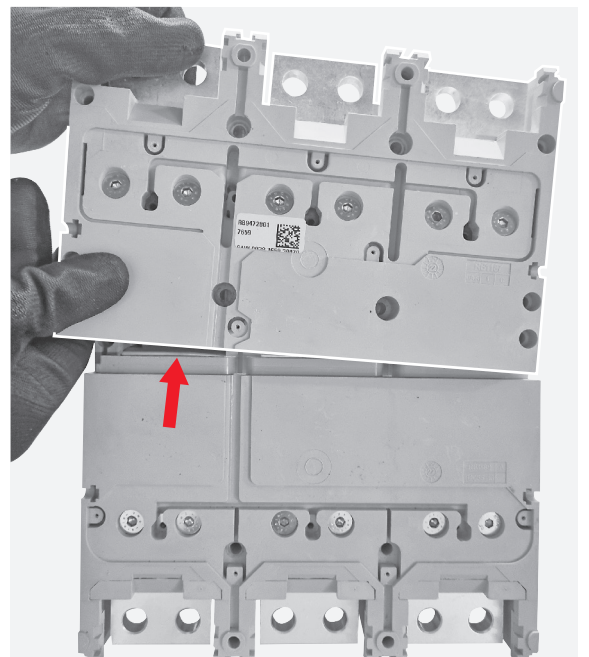
By means of the torx key (size 25) unscrew the 6 screws located in the back part of the circuit breaker.

**85**

By means of the torx key (size 20) unscrew the 6 screws located in the back part of the circuit breaker.

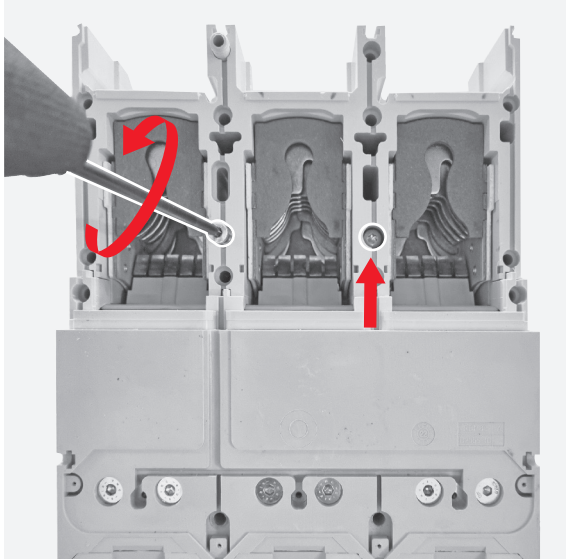
**86**

Manually remove the upper case assembly.

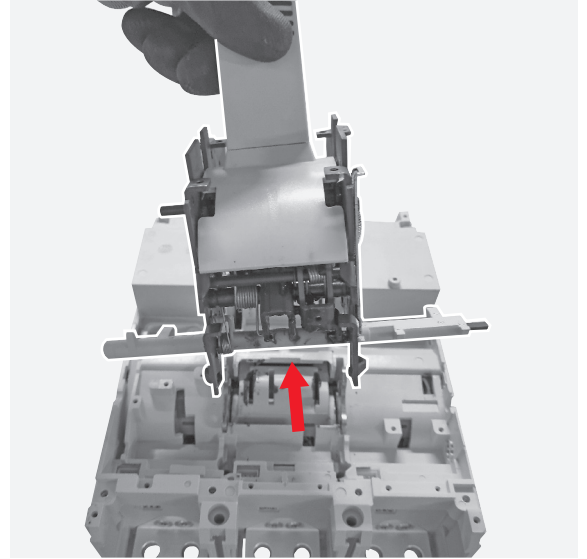


87

By means of the torx key (size 25) unscrew the 2 screws located in the back part of the circuit breaker.

**88**

Manually lift the operating mechanism and remove it from circuit breaker main structure.

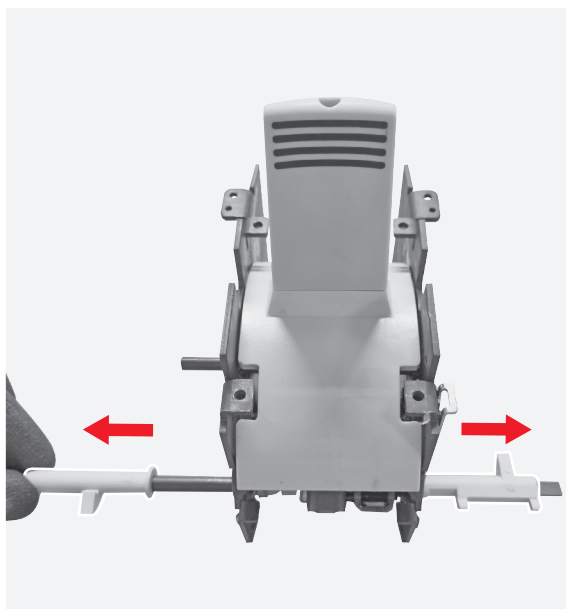


Operating mechanism contains springs: their removal constitutes a potential hazard if not performed in the proper way and using dedicated tools.

Based on this ABB indication is not to remove them from the operating mechanism and to manage the assembly with the maximum level of attention during disassembly and dismantle phases.

89

Manually remove the 2 unlocking shafts appendices mounted on the pin of the operating mechanism.

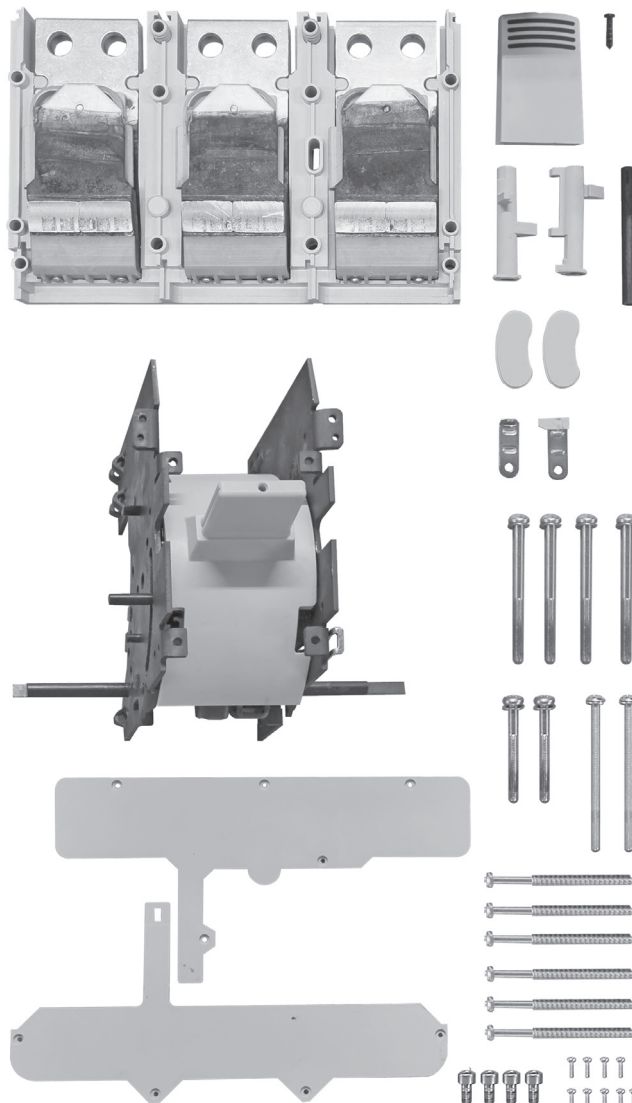
**90**

By means of the cross screwdriver uncrew the screw fixing the toggle extension to the toggle base.



91

Manually remove the toggle extension

**Disassembled parts**

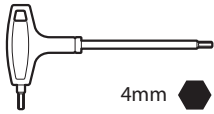
- 1 lever (Metal)
- 1 lever (Plastic and Metal)
- 2 cover caps (Plastic)
- 4 + 9 + 6 + 6 + 2 + 1 screws (Metal)
- 1 pin (Metal)
- 2 rear plates (Plastic)
- 1 upper case assembly (Plastic and Metal) *
- 1 operating mechanism (Plastic and Metal)
SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 2 unlocking shaft appendices (Plastic)
SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 lever extension (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)

* Upper case assembly will be furtherly disassembled (see phase 6.7)

6.7 PHASE 7 – UPPER CASE ASSEMBLY AND UPPER FIXED CONTACTS

Tools

Allen key



4mm

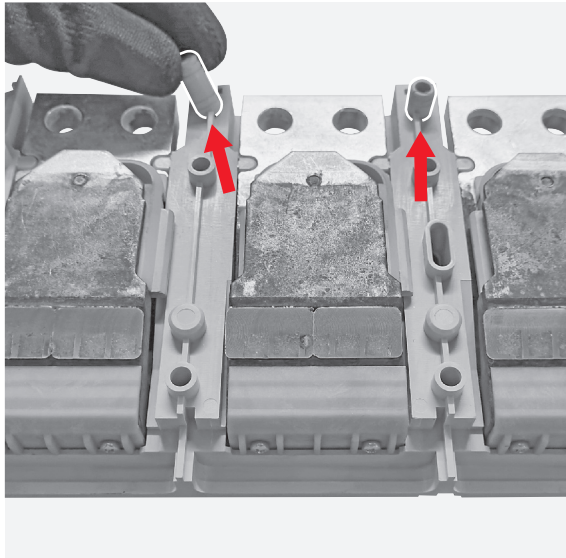
Cross screwdriver



Actions to be performed

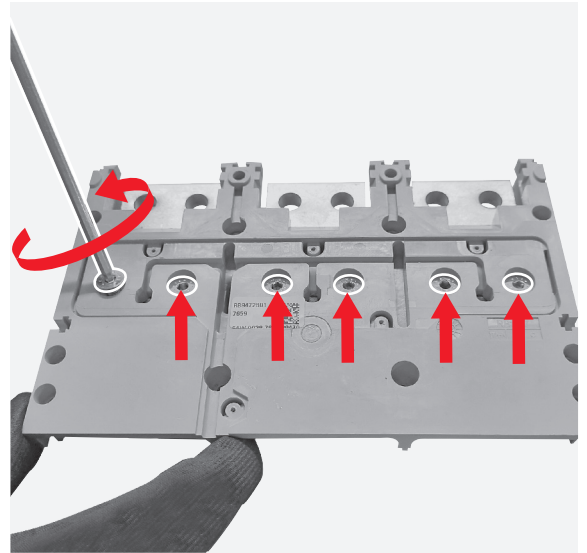
92

Manually remove the 2 protections located in the upper part of the upper case assembly.



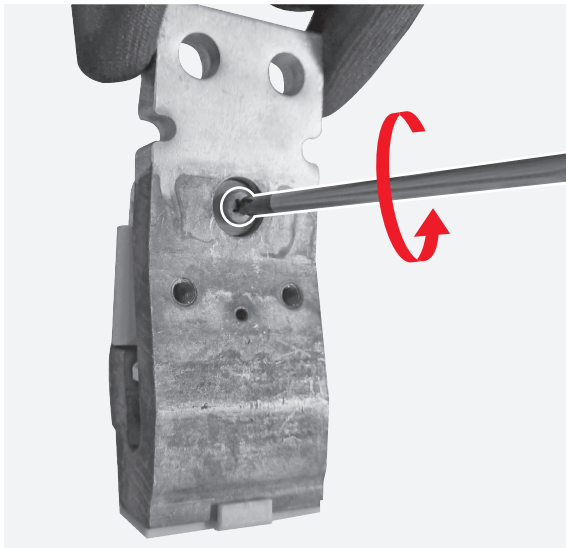
93

By means of the allen key unscrew the 6 screws fixing the fixed contacts and make them fall down by gravity.



94

By means of the cross screwdriver unscrew the screw present on the upper fixed contact.



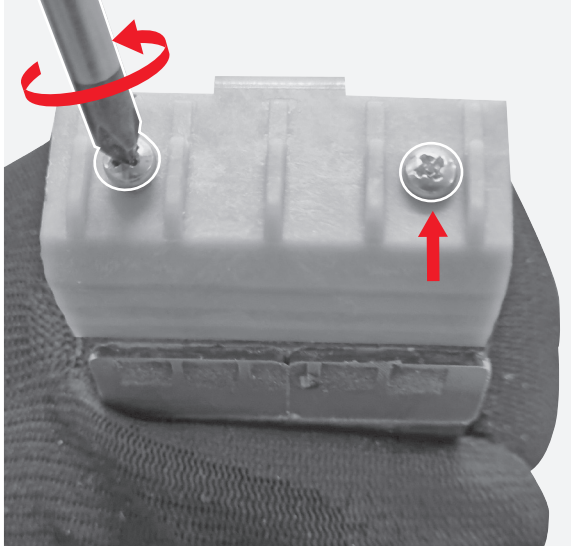
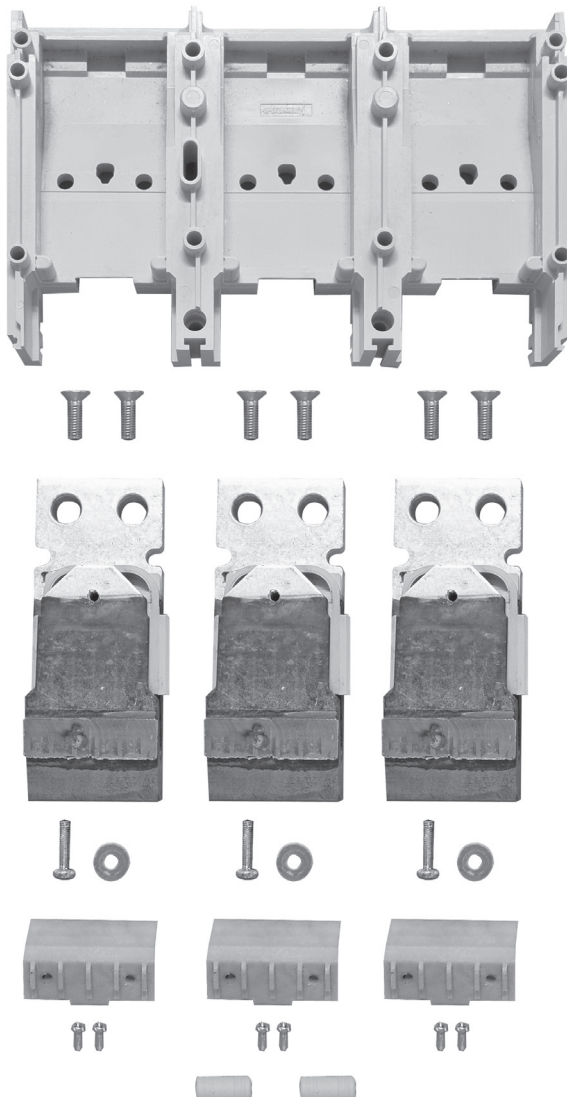
95

By means of the cross screwdriver remove the washer from the upper fixed contact.



96

By means of the cross screwdriver unscrew the 2 screws fixing the fixed contact protection to the upper fixed contact and manually complete the removal operation.

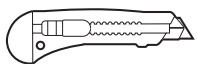
**Disassembled parts**

- 2 protections (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 6 + 3 + 6 screws (Metal)
- 3 washers (GP0-3)
- 3 fixed contacts protections (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 3 fixed contacts (Plastic and Metal)
- 1 upper case (Plastic)

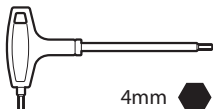
6.8 PHASE 8 – LOWER CASE ASSEMBLY, MOVING CONTACTS ASSEMBLY AND SENSORS

Tools

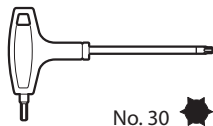
Cutter



Allen key



Torx key



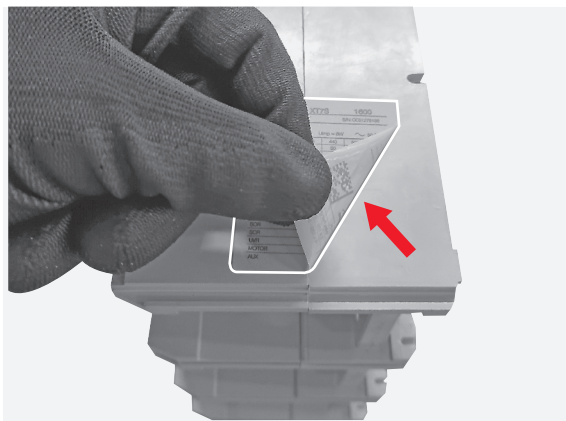
Flat screwdriver



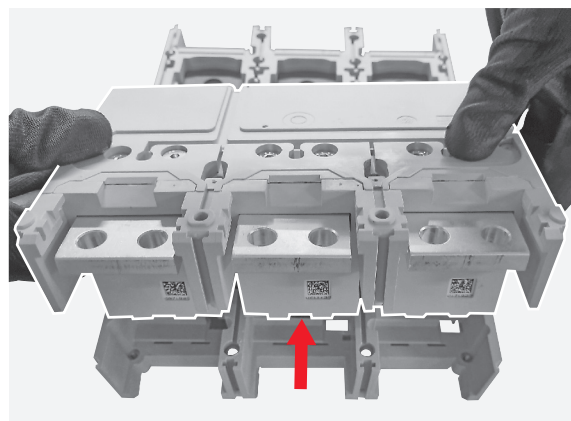
Actions to be performed

97

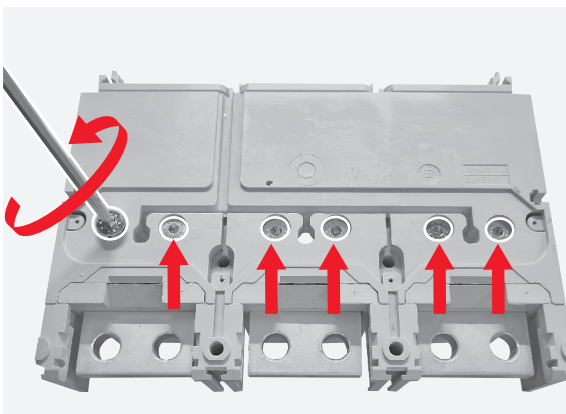
By means of the cutter start removing the label located on the side of the lower case assembly and manually complete the removal.

**98**

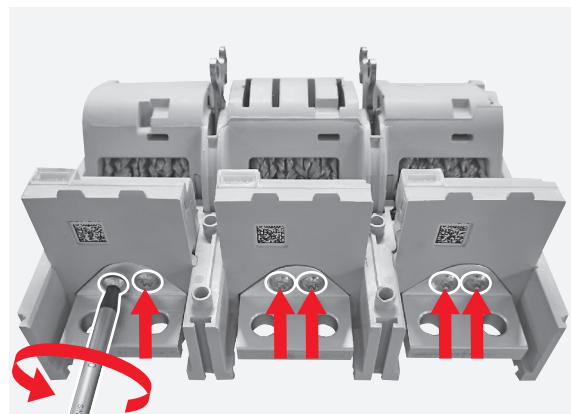
Manually lift the lower case assembly and complete the removal

**99**

By means of the allen key unscrew the 6 screws located in the back part of the lower case assembly.

**100**

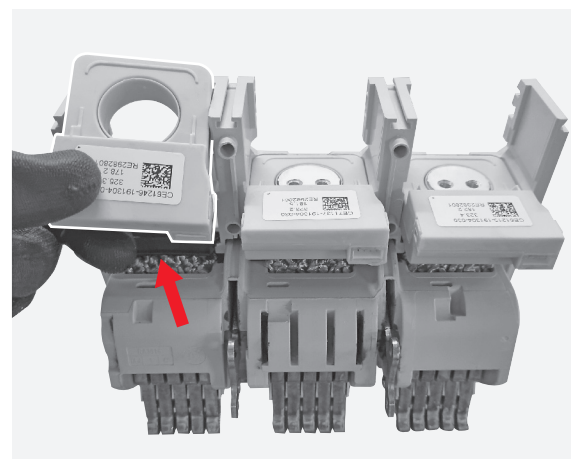
By means of the torx key unscrew the 6 screws fixing the fixed contacts to the lower case assembly and after manually complete the removal operation.

**101**

Manually push the cover mounted below the sensors as indicated by the arrow.

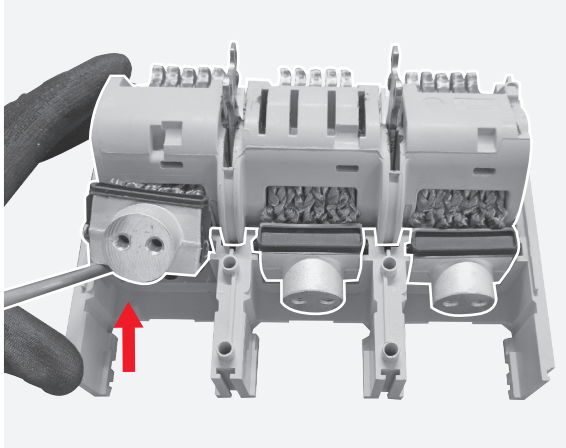
**102**

Manually remove the sensors.

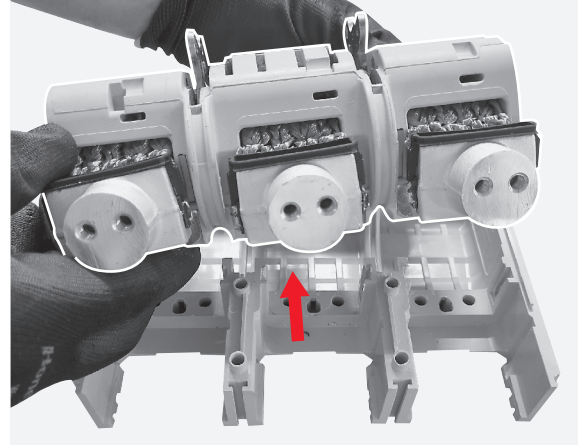


103

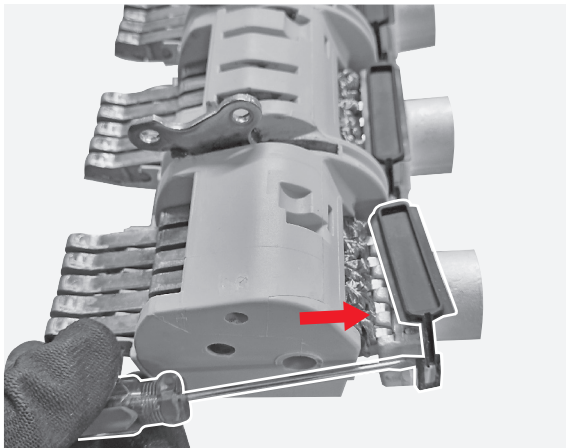
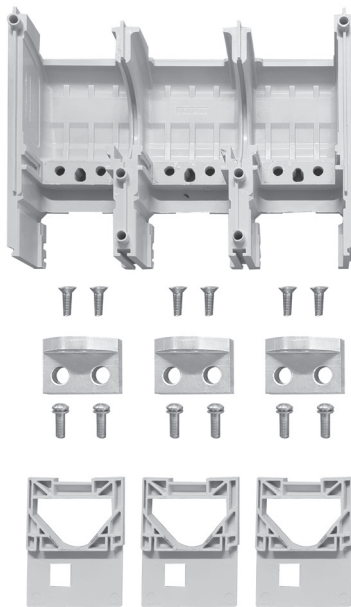
By means of the flat screwdriver lift the moving contacts assembly until it's unhooked from the lower case.

**104**

Manually remove the moving contacts assembly.

**105**

By means of the flat screwdriver unhook from both sides the insulation protections and after manually complete the removal.

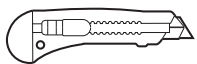
**Disassembled parts**

- 1 label (Adhesive paper)
- 6 screws (Metal)
- 6 screws and related washers (Metal)
- 3 fixed contacts (Metal)
- 3 covers (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 3 sensors (Plastic and Mixture) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 moving contacts assembly (Plastic and Metal)
- 3 insulation protections (Thermoplastic Rubber) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 lower case (Plastic)

6.9 PHASE 9 – ARCHING CHAMBERS AND CIRCUIT BREAKER COVER

Tools

Cutter



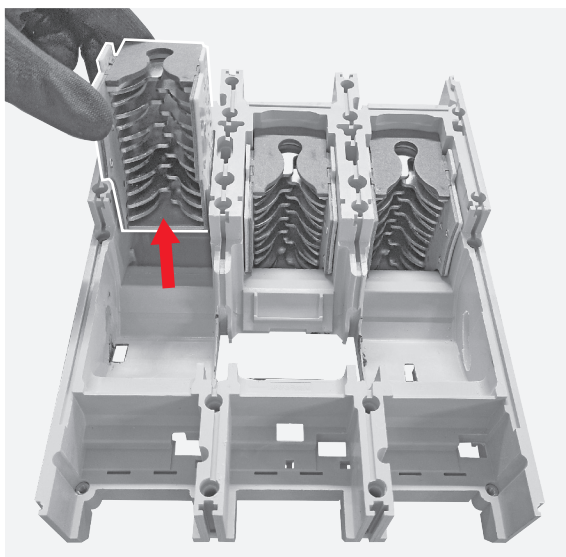
Flat screwdriver



Actions to be performed

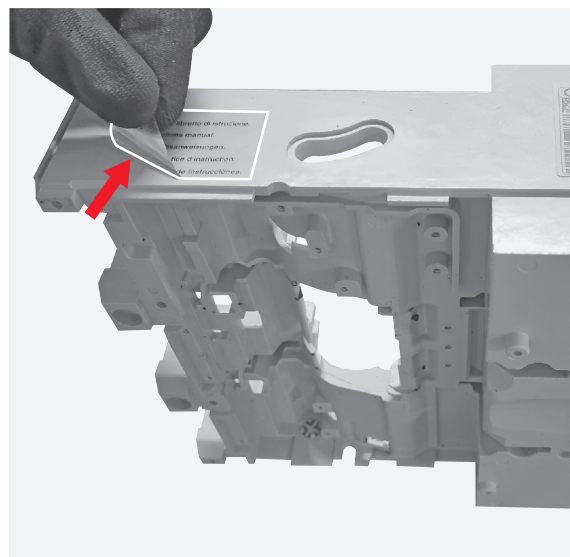
106

Manually remove the arching chambers.



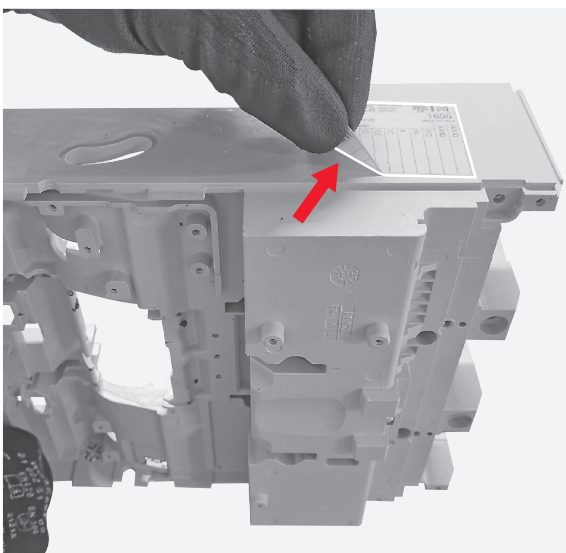
107

By means the cutter, lift the label located on the side of the circuit breaker cover and manually complete the removal.



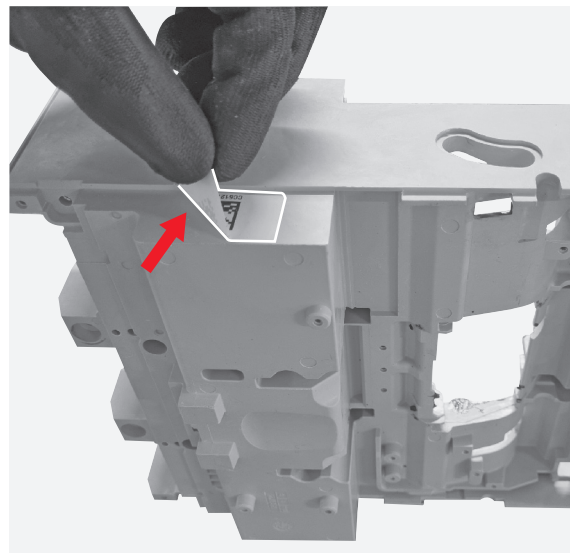
108

By means the cutter, lift the label located on the side of the circuit breaker cover and manually complete the removal.



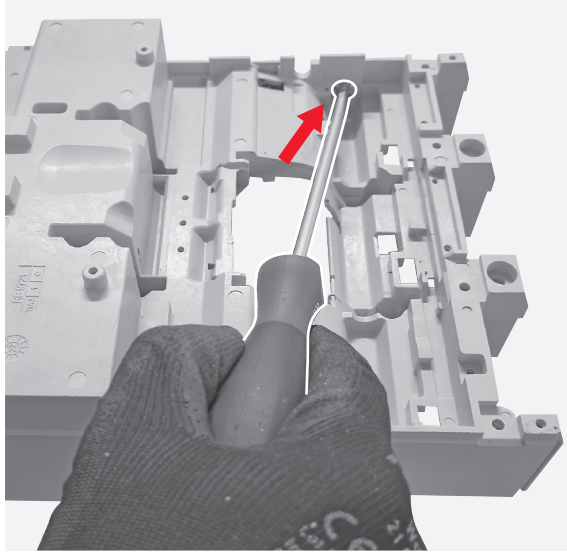
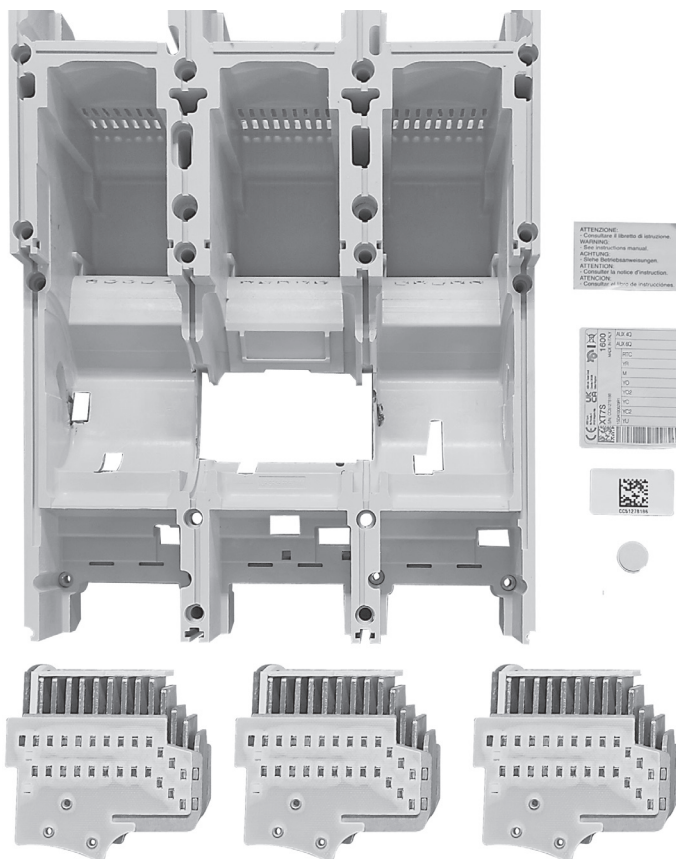
109

By means the cutter, lift the label located on the side of the circuit breaker cover and manually complete the removal.



110

By means of the flat screwdriver remove the plug from the circuit breaker cover base structure.

**Disassembled parts**

- 3 arcing chambers (Plastic and Metal)
- 3 labels (Adhesive paper)
- 1 plug (Plastic)
- 1 circuit breaker cover (Plastic)

7. ENERGY CONSUMPTION FOR CIRCUIT BREAKERS DISASSEMBLY

Since all disassembly operations illustrated in this document are manual, the CO₂ equivalent emissions can be considered null/negligible.



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