

INSTRUCTION HANDBOOK

1SDH002305A1001 - ECN000285442

EMAX 2 E4.2

Disassembly instructions



1. SCOPE

Scope of this document is to illustrate the step-by-step disassembly process of ABB SACE Emax 2 E4.2 air case circuit breaker equipped with an electronic trip unit (type Ekip TOUCH).

Document is focused on Emax 2 E4.2 3p IEC version, anyway it allows to cover other versions of Emax 2 E4.2 circuit breaker equipped with an electronic trip unit 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 and make sure that the springs of the operating mechanism are discharged.

For handling and lifting circuit breakers refer to section "Unpacking and handling" of Emax 2 "Installation, operation and maintenance instructions for the installer and the user" document. Improper lifting can result in death, serious injury to persons and damage to the equipment; never lift a circuit breaker above other people. The trained personnel in charge of handling and lifting must use appropriate safety equipment.

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
Base	In sliding contacts block	1
Cover	In sliding contacts block	1
Auxiliary position contacts cap	In sliding contacts block	1
Right side wall	In sliding contacts block	1
Flat cables assembly	In sliding contacts block	3
Connector cables assembly	In sliding contacts block	1
Sliding contacts base	In sliding contacts block	1
Ekip measuring blind module printed circuit board	Mounted on the trip unit	1
Plug	Mounted on the trip unit	1
Rating plug printed circuit board	Mounted on the trip unit	1
Rating plug case	Mounted on the trip unit	1
Ekip signalling 4K plug	Mounted on the trip unit	1
Battery cover	Mounted in the trip unit	1
Battery	Mounted in the trip unit	1
Display printed circuit board	Mounted in the trip unit	1
Display	Mounted on the trip unit	1
Backplane	Mounted on the trip unit	1
Trip unit case	Mounted on the trip unit	1
Trip unit back cover	Mounted on the trip unit	1
Trip unit printed circuit board	Mounted in the trip unit	1
4 micro I/O assembly base	Mounted on the terminal box	1
4 auxiliary contacts	Mounted in the terminal box	1
Connectors	Mounted on the terminal box	2
Connector with 2 microswitches	Mounted on the terminal box	1
I/O shaft	Mounted on the terminal box	1
Terminal box case	Mounted on the terminal box	1
Left MID	On the left part of the circuit breaker	1
CD block cover	Mounted in the CD	1
Front of the CD	Mounted on the CD	1
Position indicator	Mounted in the CD	1
Feeler	Mounted in the CD	1
CD block cover	Mounted on the CD	1
Releases door	Mounted on the MID	1
MID pawl	Mounted on the MID	1
Spacers	Mounted in the MID	2
MID reset lever	Mounted in the MID	1
Mechanical reset anchor	Mounted in the MID	1
Trip coil support base	Mounted in the MID	1
Trip coil cover	Mounted in the MID	1
Trip coil	Mounted in the MID	1
Flat cover	Mounted on the MID	1

Description	Position inside circuit breaker	Quantity
Auxiliary flat assembly	Mounted on the MID	1
RTC micro lever	Mounted in the MID	1
MID main structure	Mounted in the MID	1
Springs charging lever	Mounted on the operating mechanism	1
Operating mechanism	Mounted on the center of the circuit breaker	1
Auxiliary contacts cam	Mounted on operating shaft assembly	1
Cam	Mounted on operating shaft assembly	1
Lever	Mounted on operating shaft assembly	1
Measuring module connector	Mounted behind the trip unit and connected with poles	1
Protections	Mounted in correspondence of rear terminals	6
Spacers	Mounted in correspondence of rear terminals	30*
Arc quenchings	Mounted in arcing chambers	6
Spacers	Mounted in arcing chambers	3
Sensors plugs	Mounted in poles	3
Sensors	Mounted in poles	3
Cables	Mounted in poles	3
Insulating protection	Mounted in poles	3
Insulation protection	Mounted in poles	3
Contacts spacer	Mounted in poles	3

*For circuit breakers in UL version characterized by a current rating up to 2500A

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 – CIRCUIT BREAKER FRONT COVER AND OPERATING MECHANISM COVER

Tools

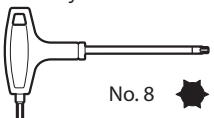
Flat screwdriver



Cross screwdriver

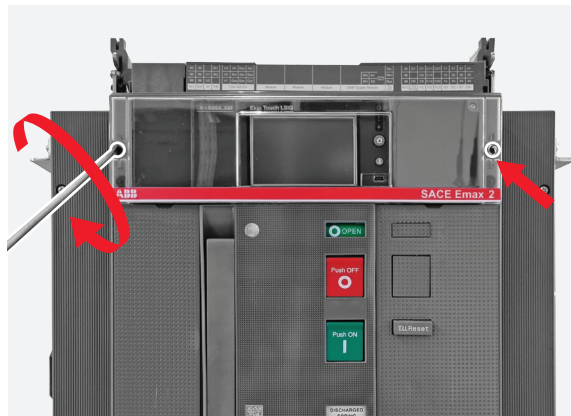


Torx key

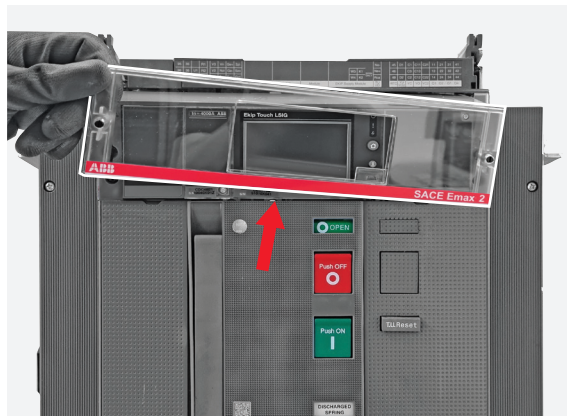


Actions to be performed

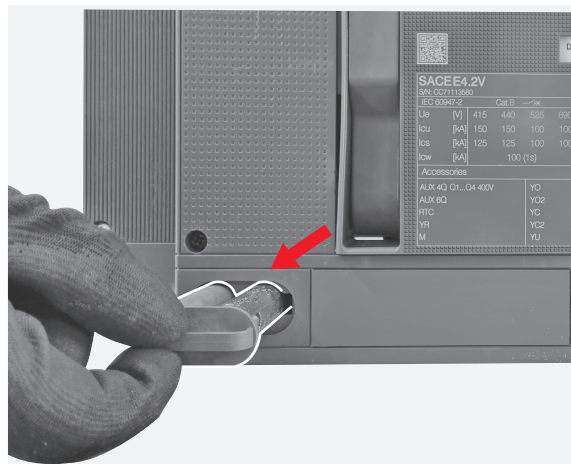
1 By means of the flat screwdriver turn of 90° the 2 screws fixing the trip unit transparent protection to the circuit breaker.



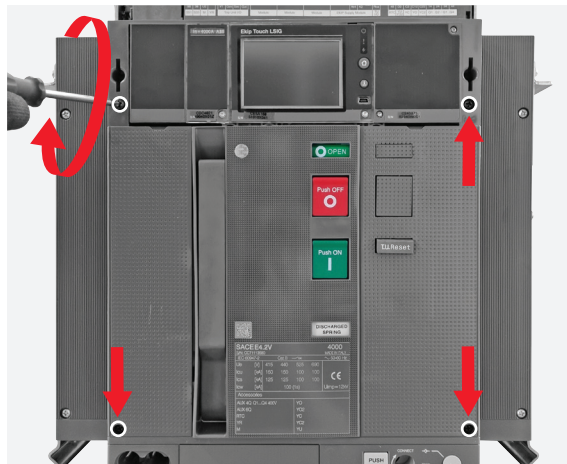
2 Manually remove the trip unit transparent cover.



3 Manually remove the racking in and out lever located in the bottom part of the circuit breaker.



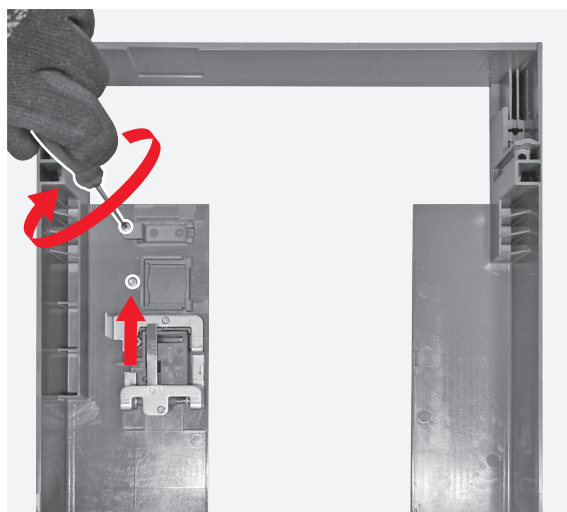
4 By means of the cross screwdriver unscrew the 4 screws fixing the front cover to the circuit breaker main structure.



5 Manually remove the front cover.

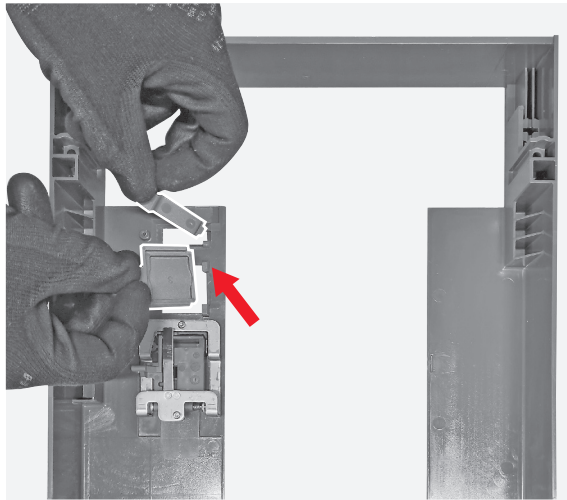


6 By means of the torx key unscrew the 2 screws fixing the 2 plugs to the front cover.

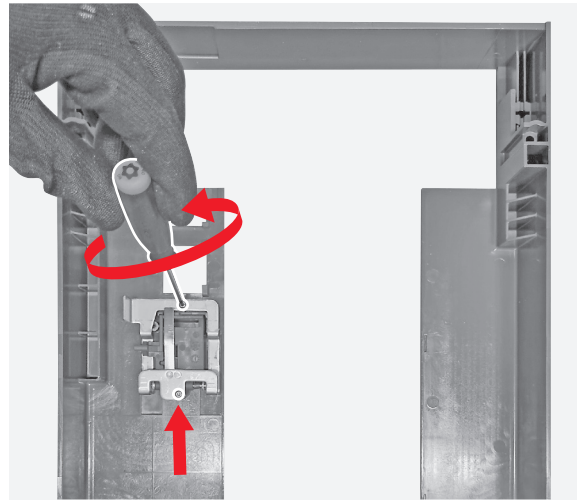


7

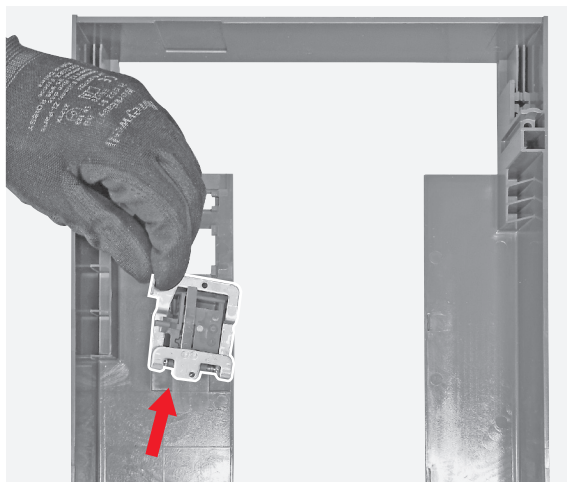
Manually remove the 2 plugs.

**8**

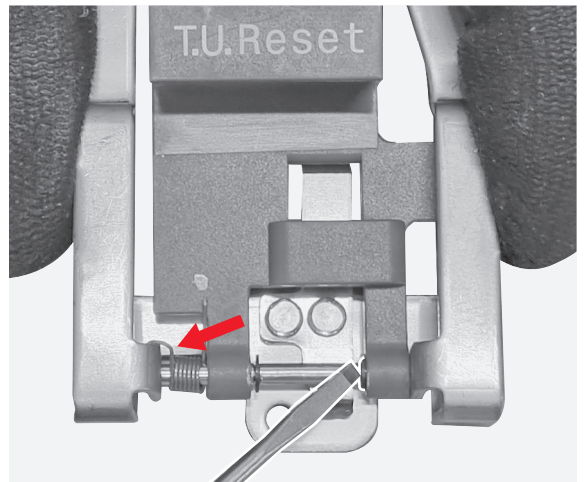
By means of the torx key unscrew the 2 screws fixing the T.U. Reset assembly to the front cover.

**9**

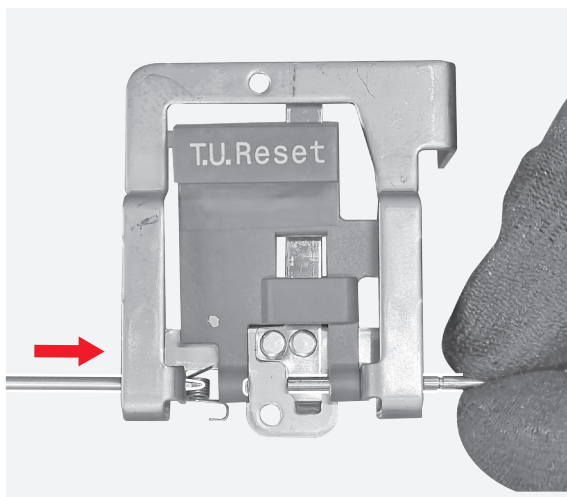
Manually remove the T.U Reset assembly.

**10**

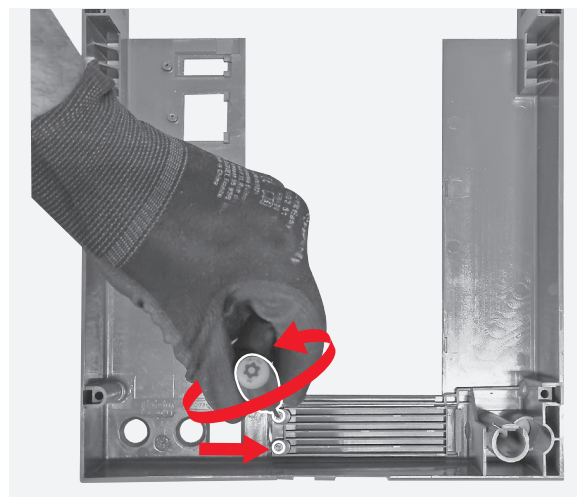
By means of the flat screwdriver remove the 2 benzings mounted on the T.U. Reset assembly.

**11**

By means of the flat screwdriver push the pin as indicated by the arrow and after let the the spring and the T.U. Reset signalling plug automatically separate from the T.U. Reset metal support.

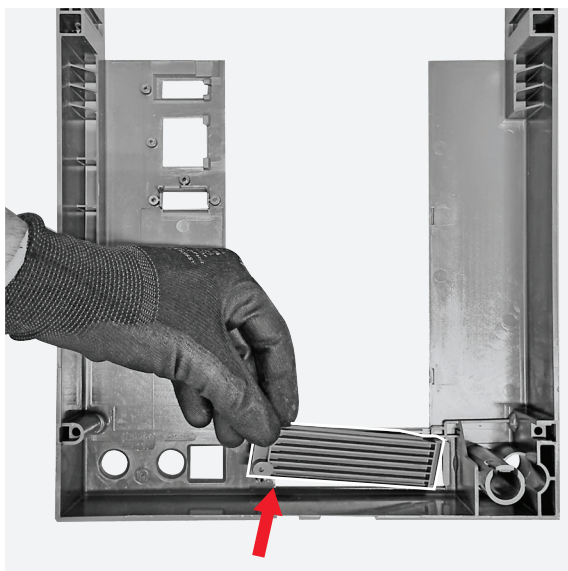
**12**

By means of the torx key remove the 2 screws fixing the plug to the circuit breaker front cover.

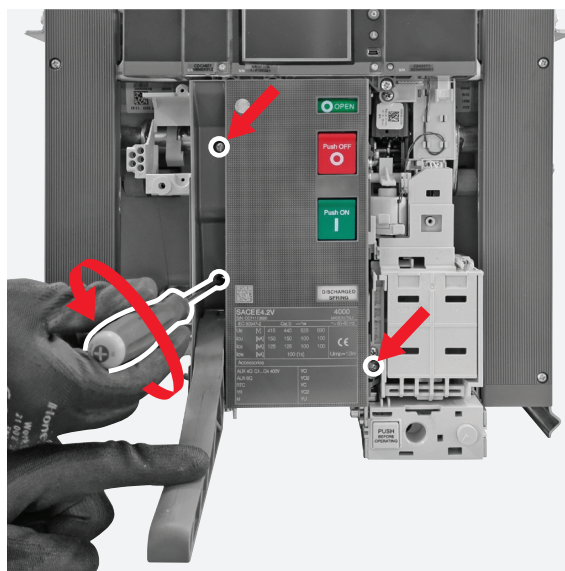


13

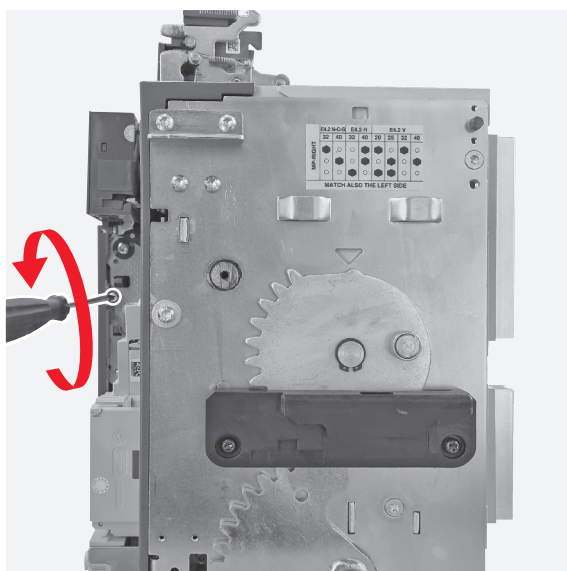
Manually remove the plug.

**14**

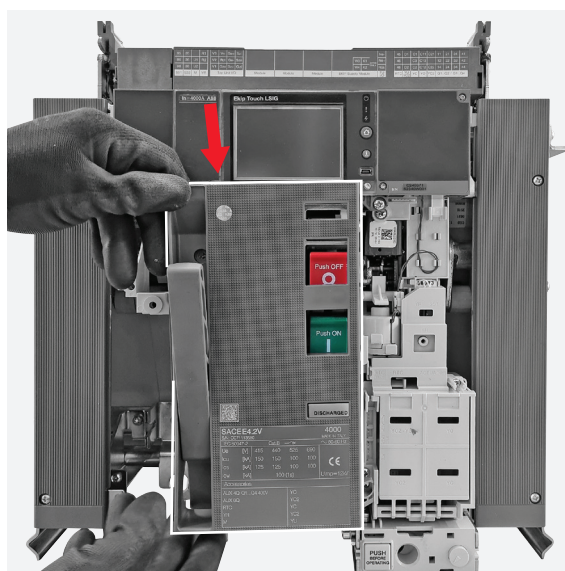
Manually push down the springs charging lever and by means of the cross screwdriver unscrew the 2 screws located behind the springs charging lever fixing the operating mechanism cover to the circuit breaker main structure and always by means of the cross screwdriver unscrew the screw located in the bottom right part of the operating mechanism cover fixing it to the circuit breaker main structure.

**15**

By means of the cross screwdriver unscrew the screw located on the side of operating mechanism cover.

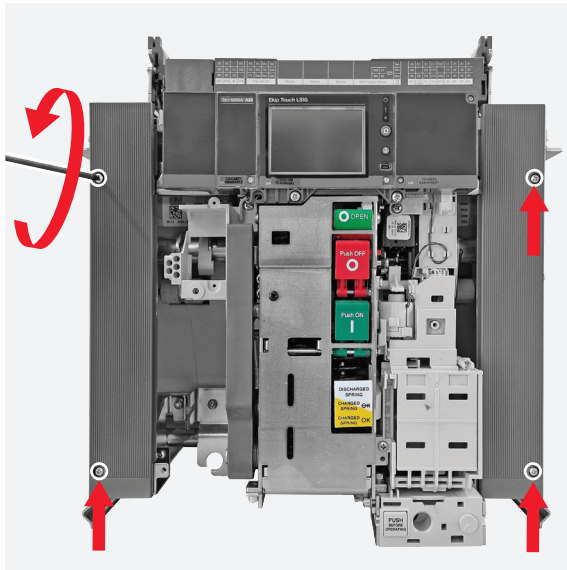
**16**

Manually complete the removal of the operating mechanism cover.

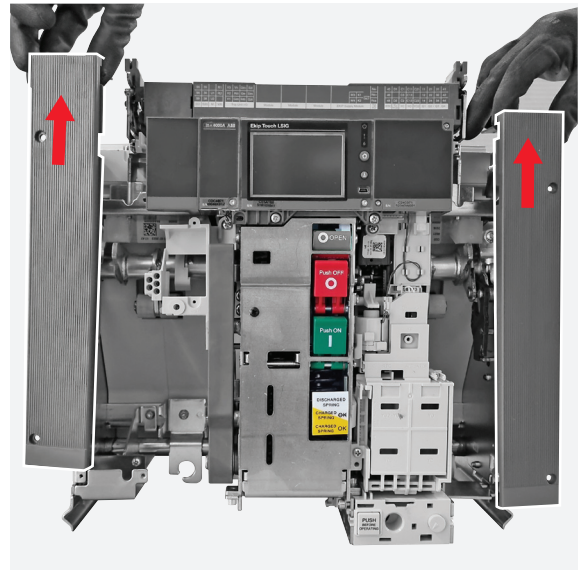
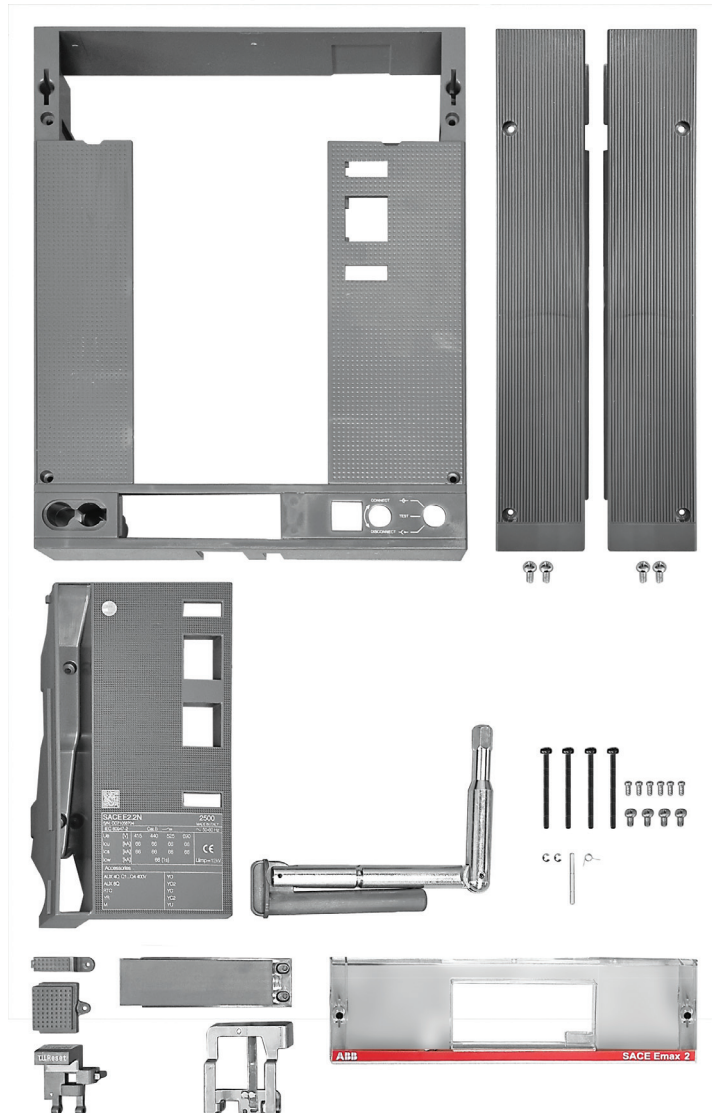


17

By means of the cross screwdriver unscrew the 2 + 2 screws fixing the left and the right shields to the circuit breaker.

**18**

Manually remove the left and the right shields.

**Disassembled parts**

- 1 trip unit transparent protection (Plastic and Metal)
- 1 racking in and out lever (Plastic and Metal)
- 4 + 2 + 2 + 2 + 3 + 1 + 2 + 2 screws (Metal)
- 3 plugs (Plastic)
- 2 benzings (Metal)
- 1 pin (Metal)
- 1 spring (Metal)
- 1 T.U. Reset signalling plug (Plastic)
- 1 T.U. Reset support (Metal)
- 1 circuit breaker front cover (Plastic)
- 1 operating mechanism cover (Plastic)
- 2 shields (Plastic)

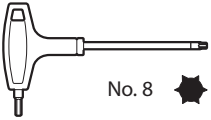
6.2 PHASE 2 – SLIDING CONTACTS BLOCK

Tools

Cross screwdriver



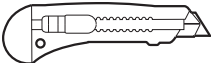
Torx key



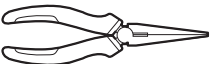
Flat screwdriver (x2)



Cutter



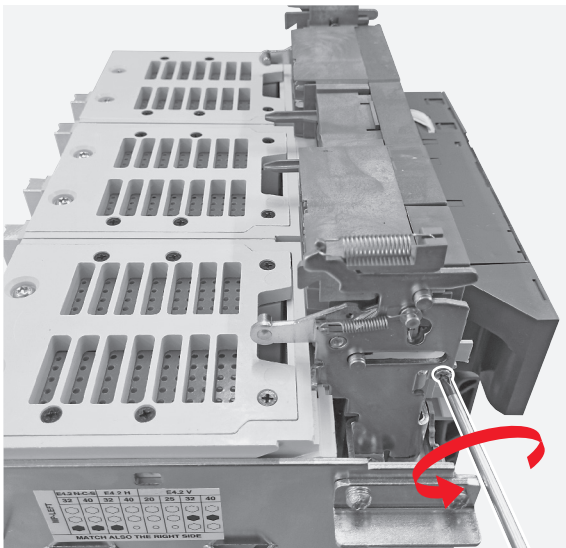
Pliers



Actions to be performed

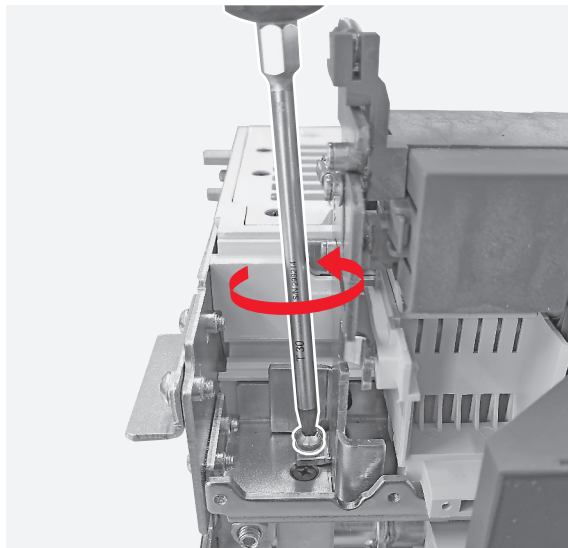
19

By means of the cross screwdriver unscrew the 1 + 1 screws fixing the 2 sides walls located at both sides of the sliding contacts block to the circuit breaker main structure.



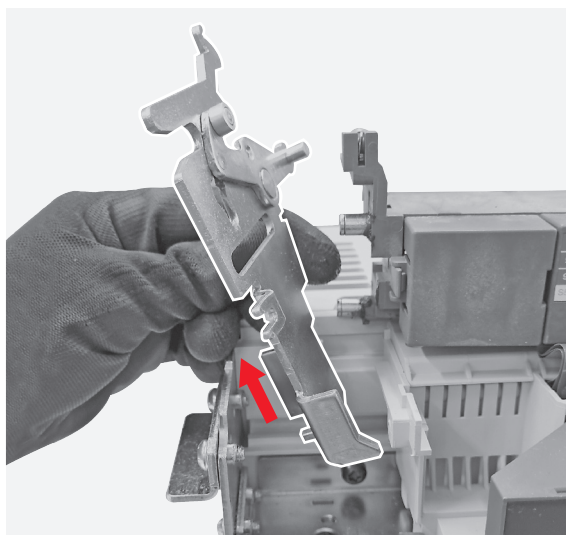
20

By means of the cross screwdriver unscrew the 1 + 1 screws fixing the 2 sides walls located at both sides of the sliding contacts block to the circuit breaker main structure.



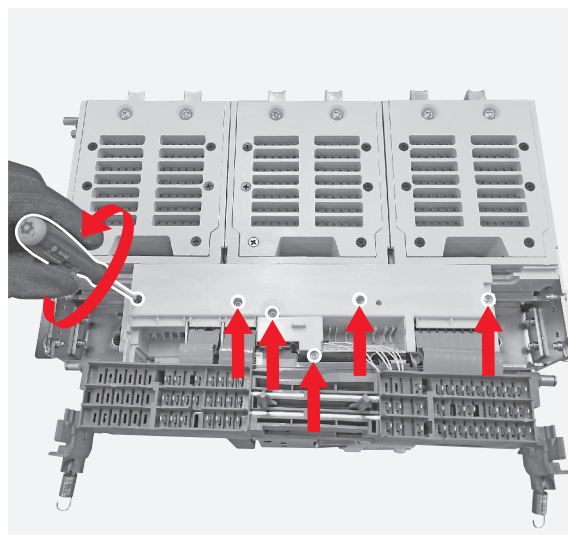
21

Manually remove the 2 side walls.



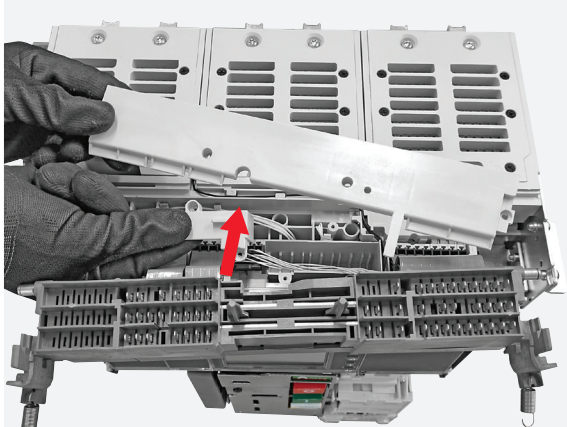
22

Move the sliding contacts block as shown in the picture and by means of the torx key unscrew the 6 screws fixing the base and the cover.

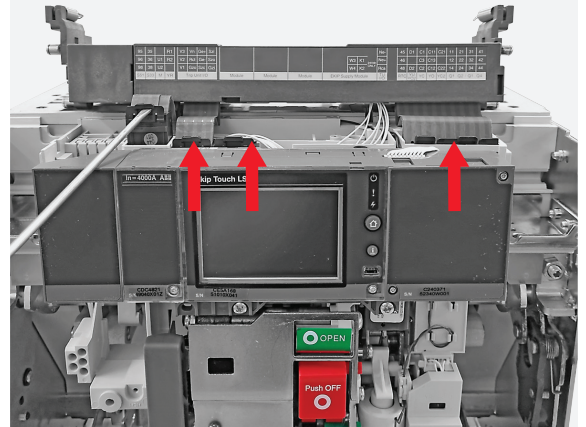


23

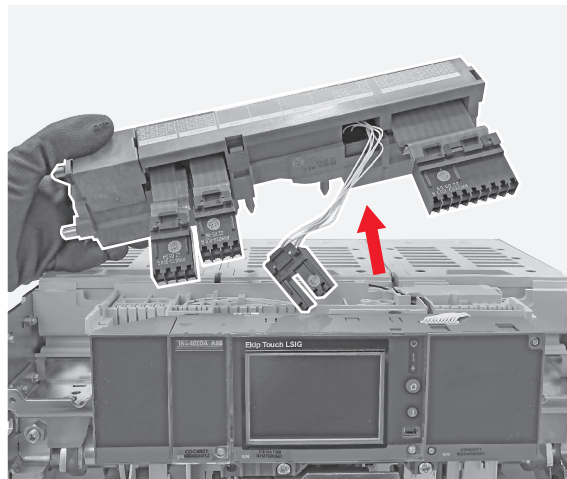
Manually remove the base and the cover.

**24**

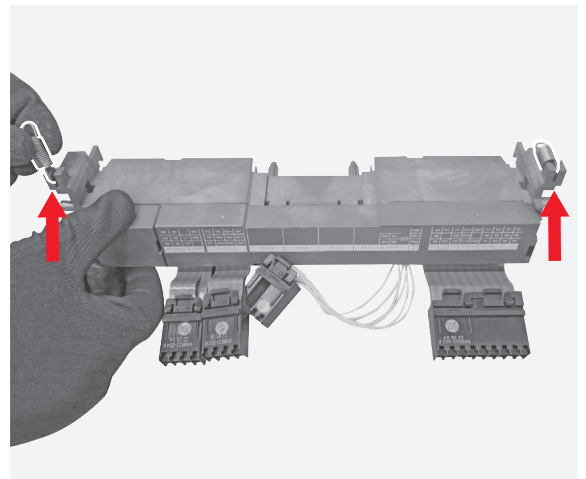
By means of the flat screwdriver push up the 3 flat cables assemblies and the connector cables assembly.

**25**

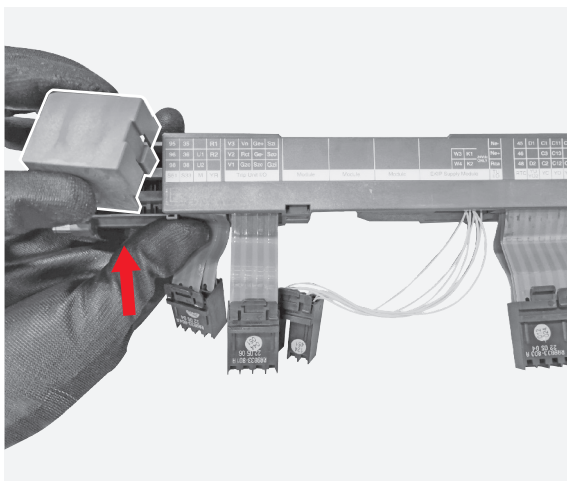
After manually remove the sliding contacts block.

**26**

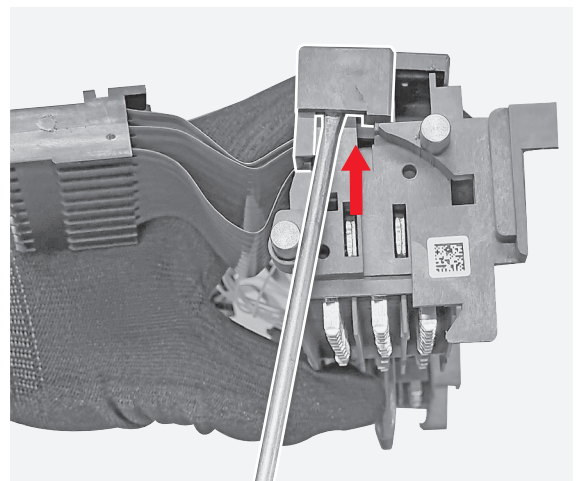
Manually remove the 2 springs located at both sides of the sliding contacts block.

**27**

Manually remove the auxiliary position contacts cap located on the left side of the sliding contacts block

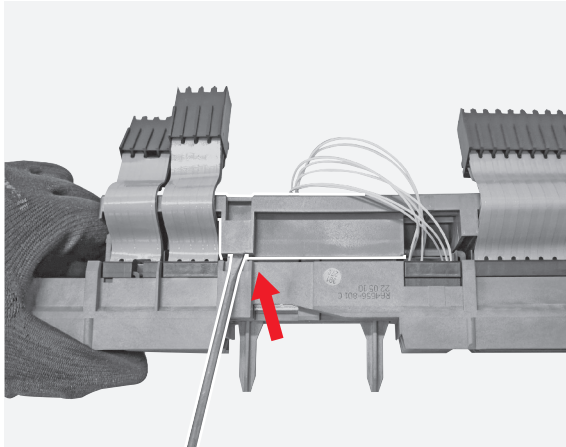
**28**

By means of the flat screwdriver unhook the right side wall from the sliding contacts main assembly as indicated in the picture.

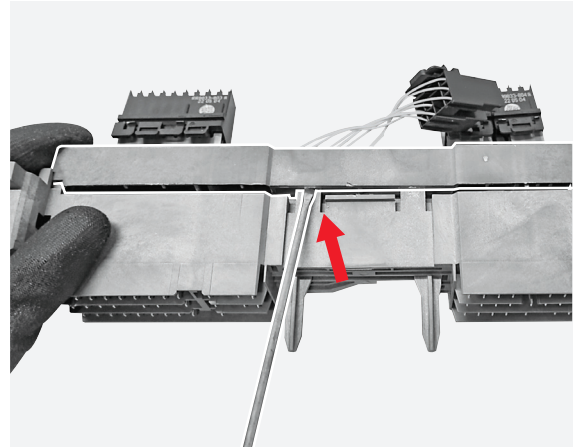


29

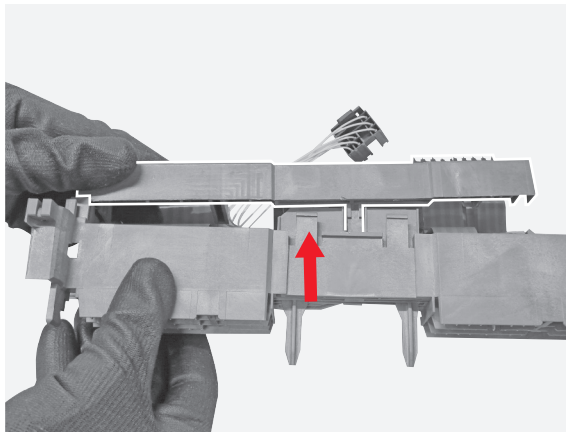
By means of the flat screwdriver unhook the right side wall from the sliding contacts main assembly as indicated in the picture.

**30**

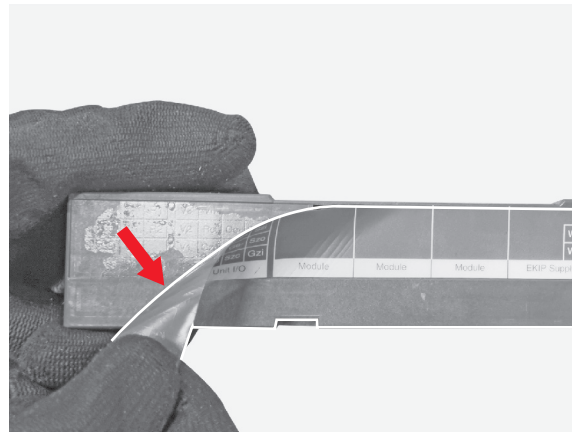
By means of the flat screwdriver unhook the right side wall from the sliding contacts main assembly as indicated in the picture.

**31**

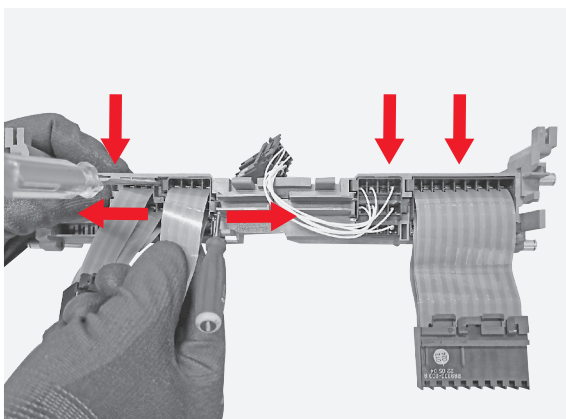
Manually remove the right side wall.

**32**

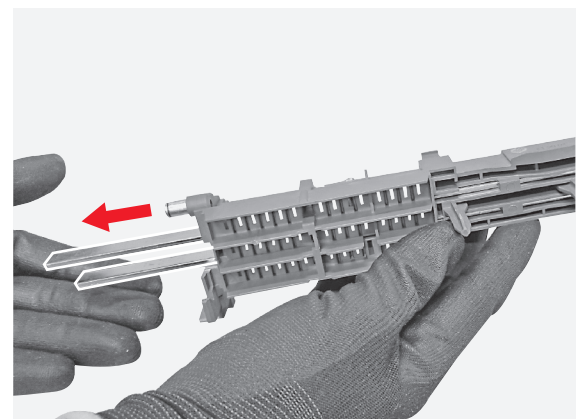
By means of the cutter start removing the sliding contacts label located on the on the right side wall and manually complete the operation.

**33**

Insert 2 flat screwdrivers at the sides of each block, slightly push them as indicated by the arrows and complete the removal of the 3 flat cables assemblies and of the connector cables assembly manually pulling them.

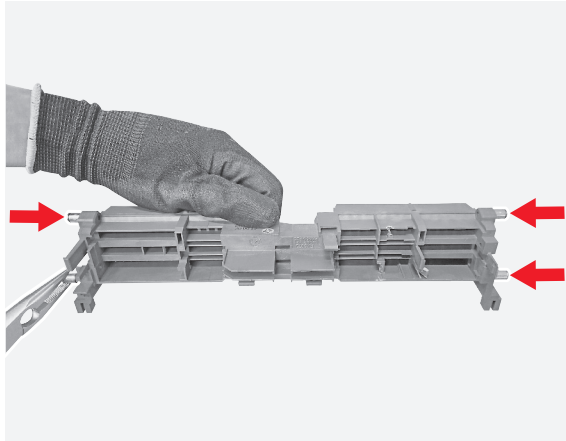
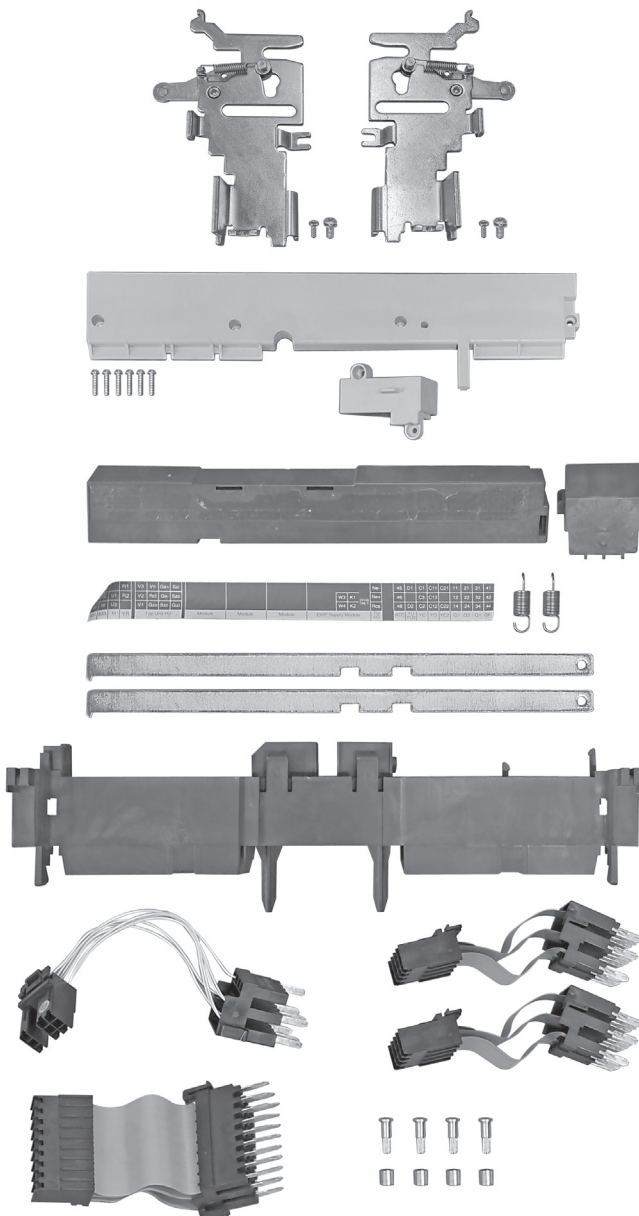
**34**

Lift the sliding contacts base and let the 2 bars mounted inside exit.



35

By means of the pliers remove the 4 pins and the related nuts mounted at both sides of the sliding contacts base.

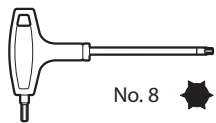
**Disassembled parts**

- 2 + 2 + 6 screws (Metal)
- 2 side walls (Metal)
- 1 base (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 cover (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 2 springs (Metal)
- 1 auxiliary position contacts cap (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 right side wall (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 sliding contacts label (Adhesive paper)
- 3 flat cables assemblies (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 connector cables assembly (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 2 bars (Metal)
- 4 pins and related nuts (Metal)
- 1 sliding contacts base (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)

6.3 PHASE 3 – TRIP UNIT

Tools

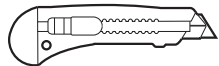
Torx key



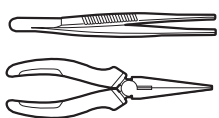
Flat screwdriver



Cutter



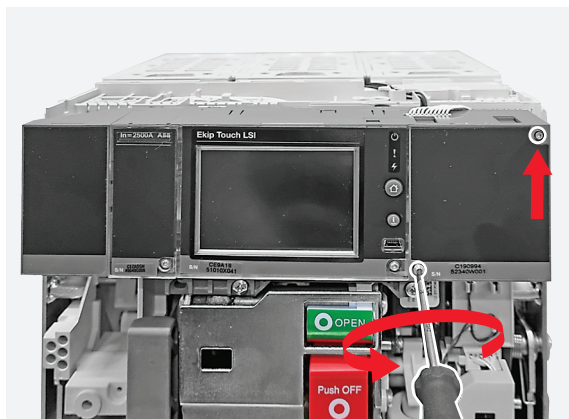
Pliers



Actions to be performed

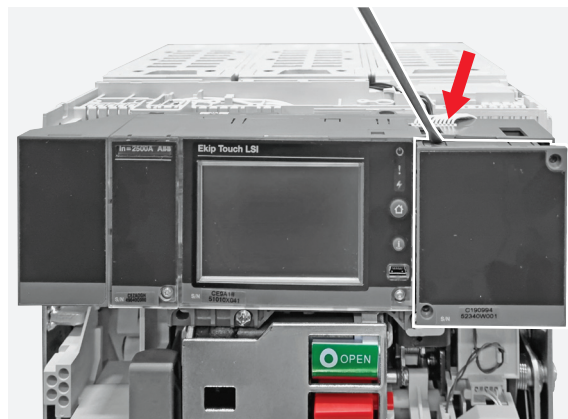
36

By means of the torx key unscrew the 2 screws fixing the Ekip measuring blind module located on the right part of the trip unit to the trip unit itself.



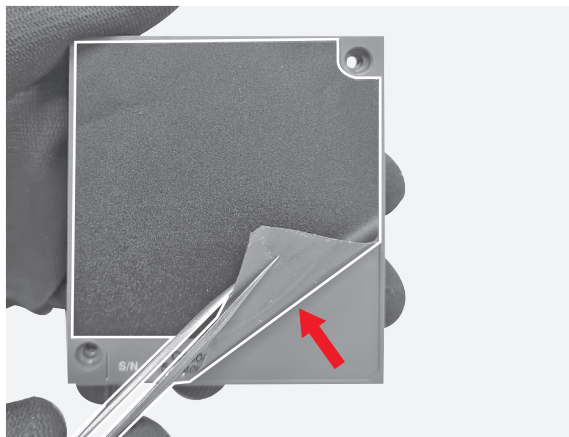
37

By means of the flat screwdriver unhook the Ekip measuring blind module from the trip unit and after manually complete the removal.



38

By means of the cutter start removing the label located on the Ekip measuring blind module and by means of the pliers complete the removal operation.



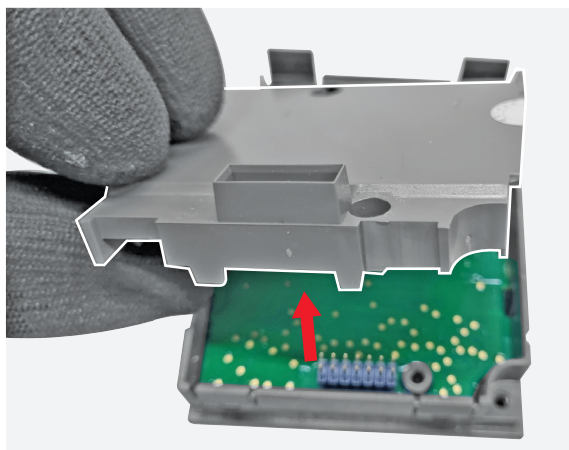
39

By means of the torx key unscrew the 2 screws fixing the Ekip measuring blind plug to the Ekip measuring blind case.



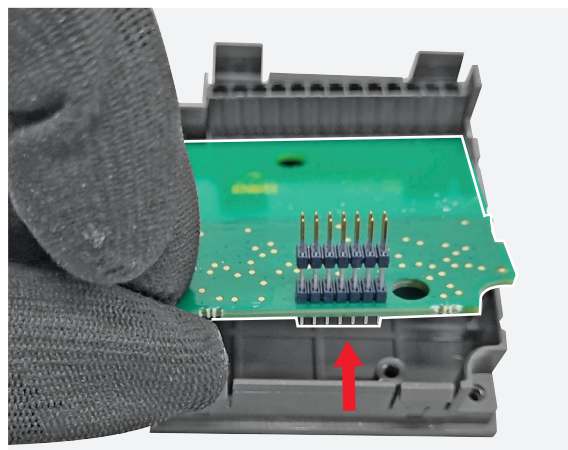
40

Manually remove the Ekip measuring blind case.



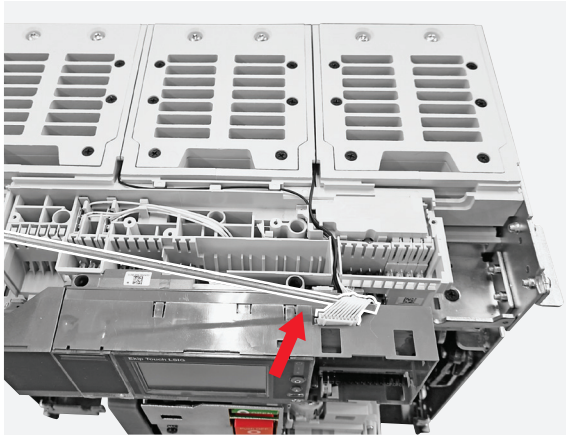
41

Manually remove the printed circuit board.

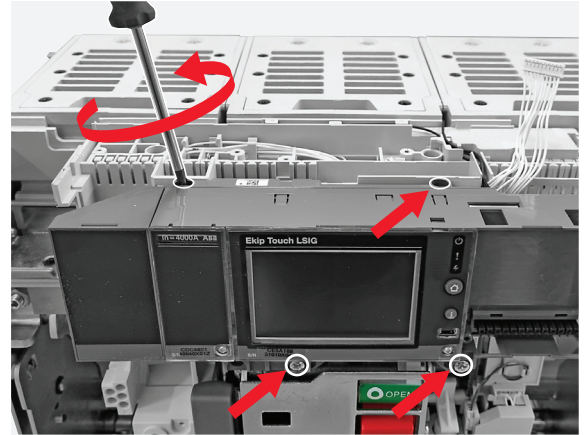


42

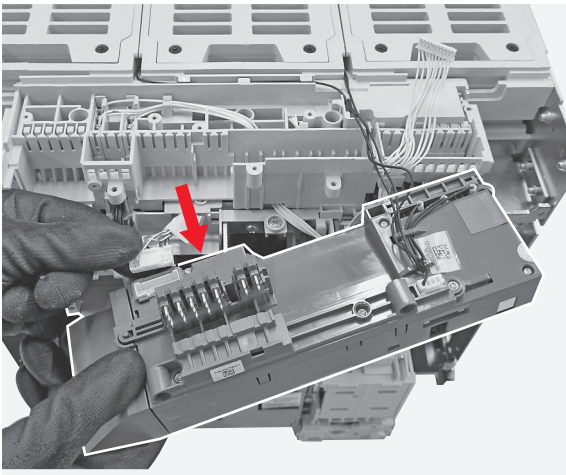
By means of the flat screwdriver unhook the white connector located in the upper part of the trip unit.

**43**

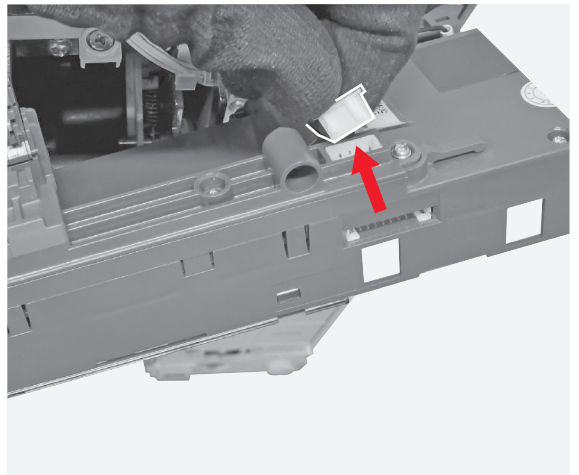
By means of the cross screwdriver unscrew the 4 screws fixing the trip unit to the circuit breaker main structure.

**44**

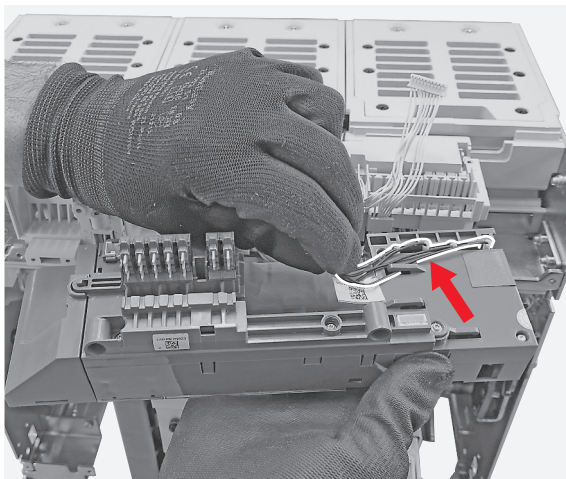
Manually unhook the connector located in the back part of the trip unit.

**45**

Manually unhook the connector located in the back part of the trip unit.

**46**

Manually unhook the cables linked to the black connector.

**47**

By means of the flat screwdriver push the black connector as indicated by the arrow until it's totally unhooked and after manually complete the removal of the trip unit from the circuit breaker main structure.



48

By means of the torx key unscrew the screw fixing the plug to the trip unit.

**49**

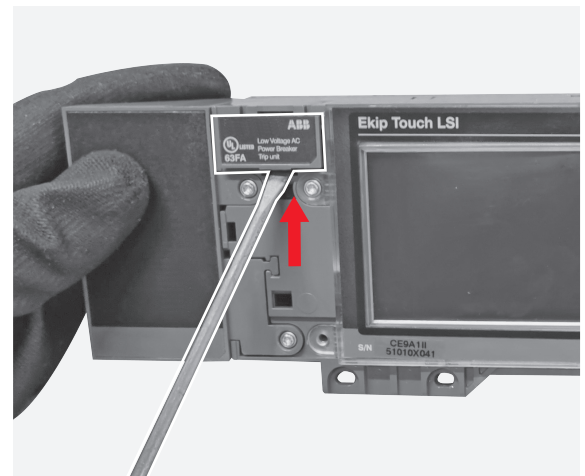
Manually remove the plug.

**50**

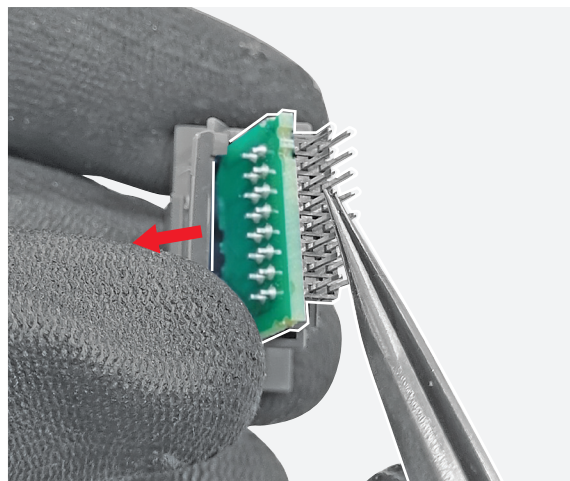
By means of the cutter start removing the label mounted over the plug removed at step before and manually complete the removal operation.

**51**

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

**52**

Manually push the rating plug case appendix as indicated by the arrow and by means of the pliers remove the rating plug printed circuit board.

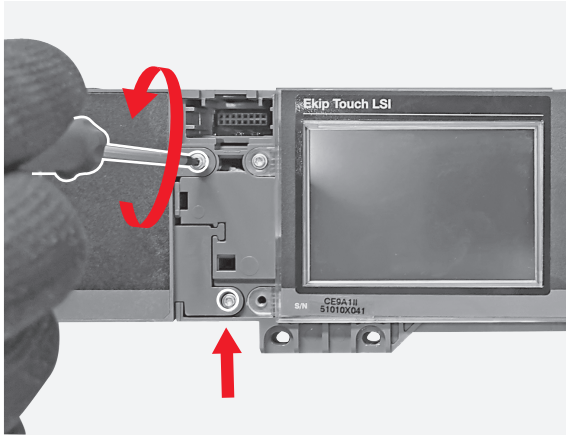
**53**

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

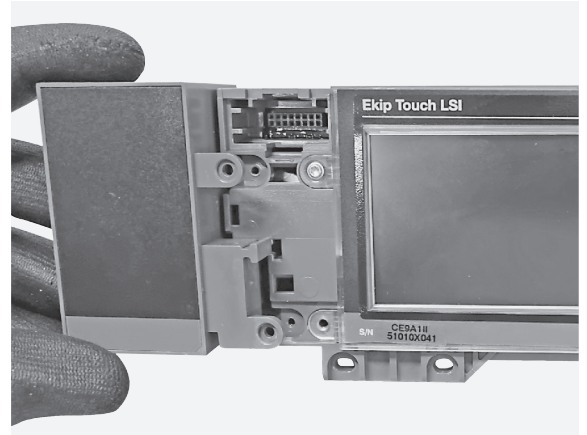


54

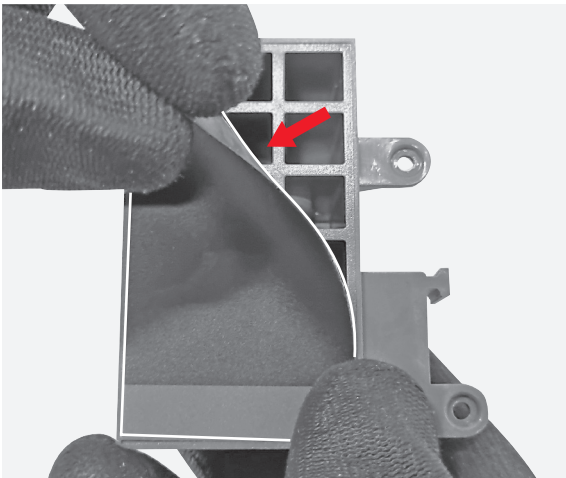
By means of the torx key unscrew the 2 screws fixing the Ekip signalling 4K plug to the trip unit main structure.

**55**

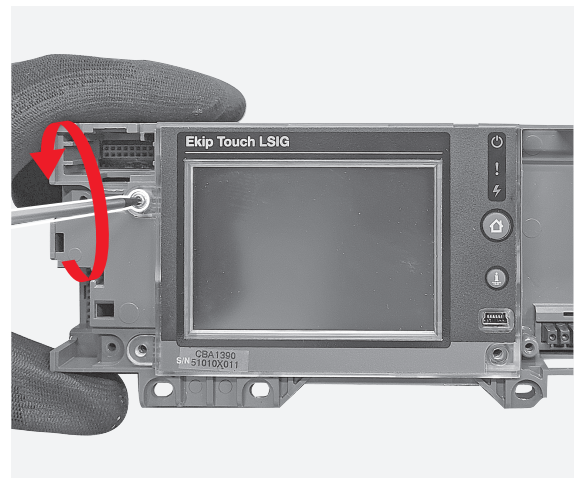
Manually remove the Ekip signalling 4K plug from the trip unit main structure.

**56**

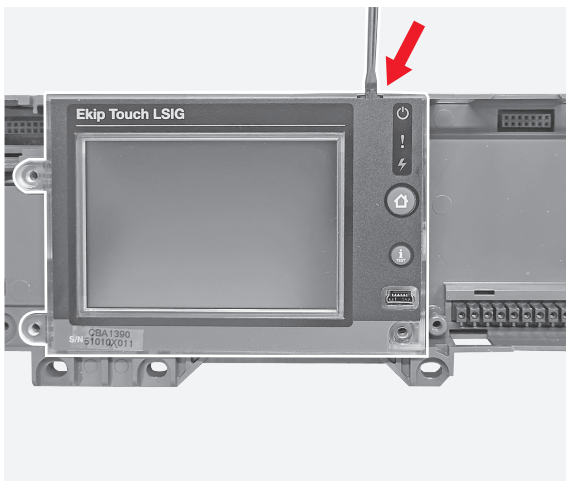
By means of the cutter start removing the label located on the front of the Ekip signalling 4K plug and manually complete the removal operation.

**57**

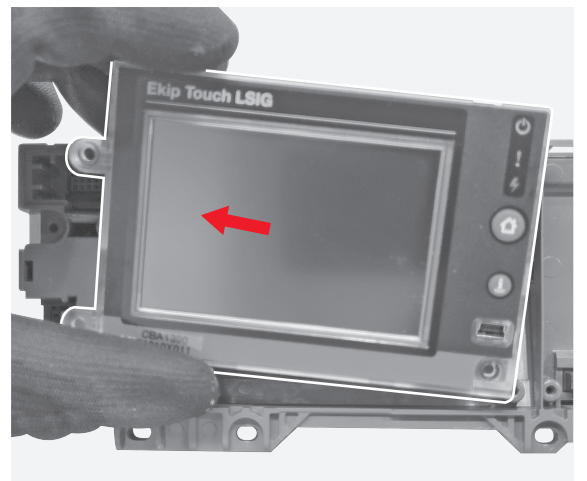
By means of the torx key unscrew the screw fixing the display to the trip unit main structure.

**58**

By means of the flat screwdriver unhook the display from the trip unit main structure.

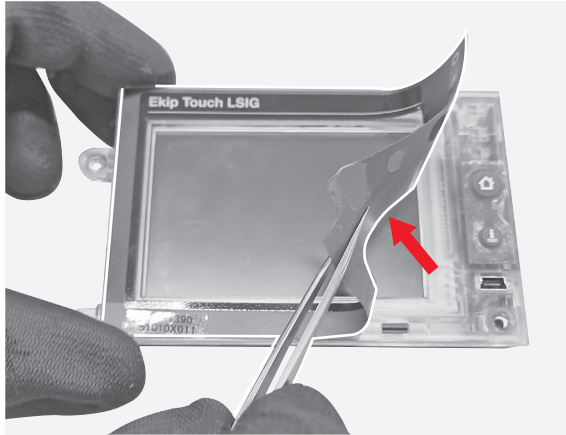
**59**

Manually remove the display from the trip unit main structure.



60

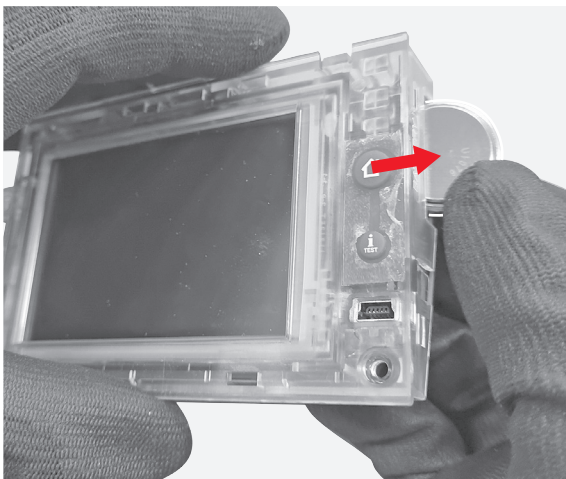
By means of the cutter start removing the trip unit front label and by means of the pliers complete the operation.

**61**

By means of the flat screwdriver remove the battery cover on the left side of the display.

**62**

Manually remove the battery.

**63**

By means of the flat screwdriver unhook the HMI box from the display.

**64**

Manually remove the HMI box from the display.

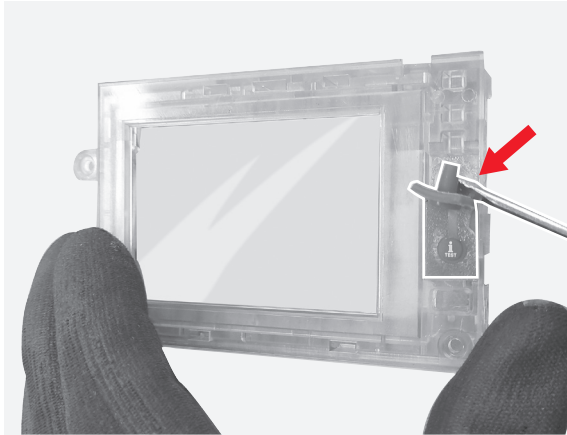
**65**

Manually separate the display and the HMI LCD cover.



66

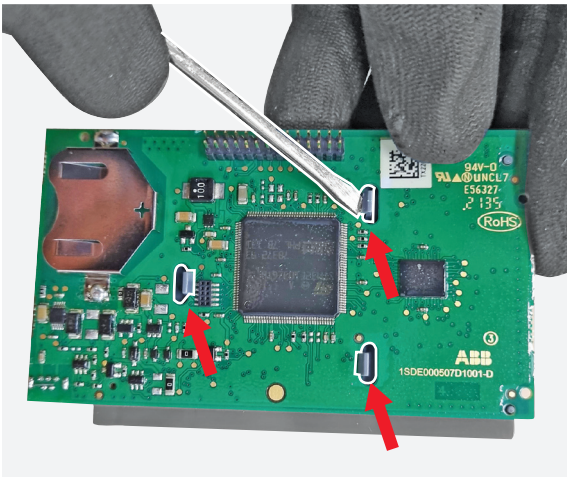
By means of the flat screwdriver remove the "i TEST" pushbutton from the HMI LCD cover.

**67**

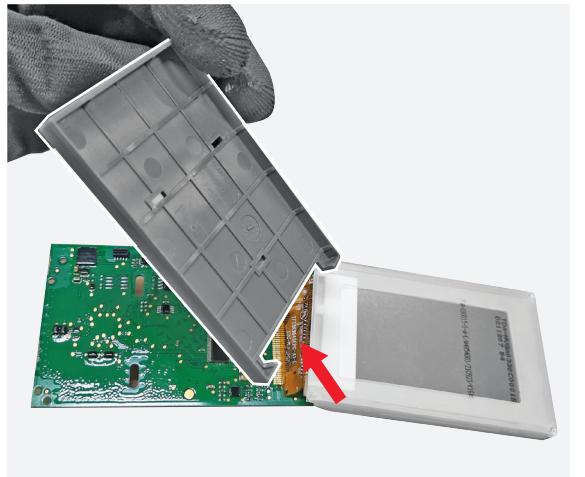
Manually remove the battery gasket.

**68**

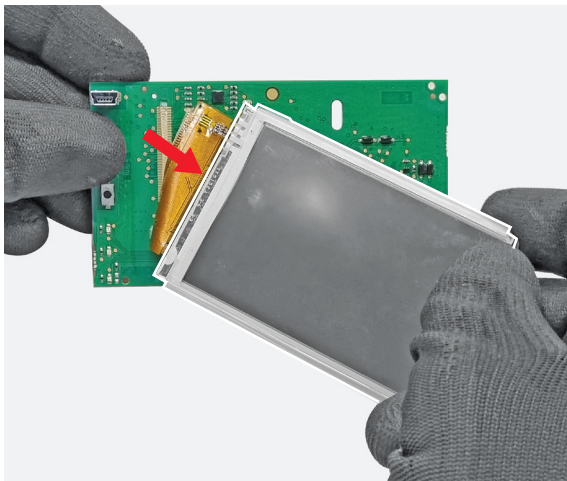
By means of the flat screwdriver unhook the display printed circuit board from the display support.

**69**

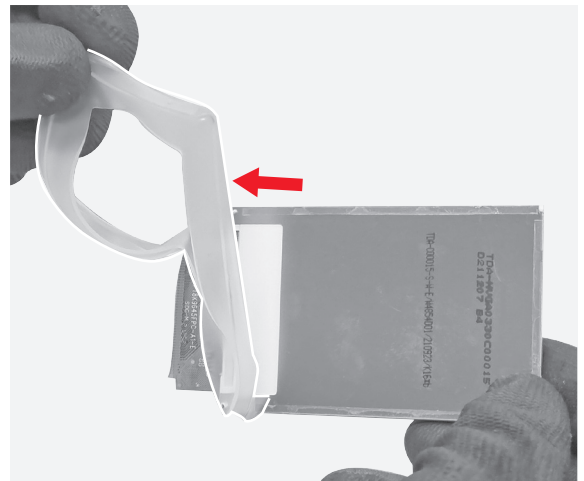
Manually remove the display support.

**70**

Manually separate the display from its printed circuit board.

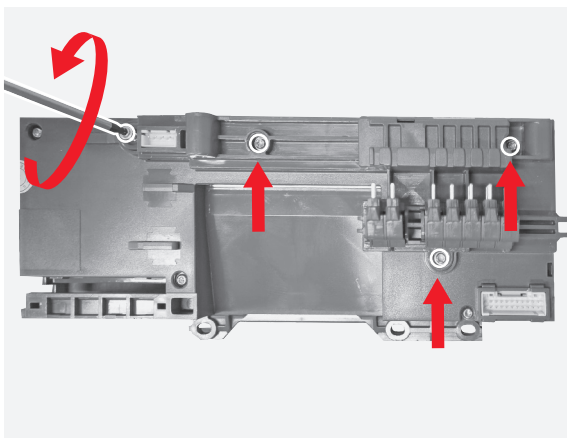
**71**

Manually separate the gasket from the display.

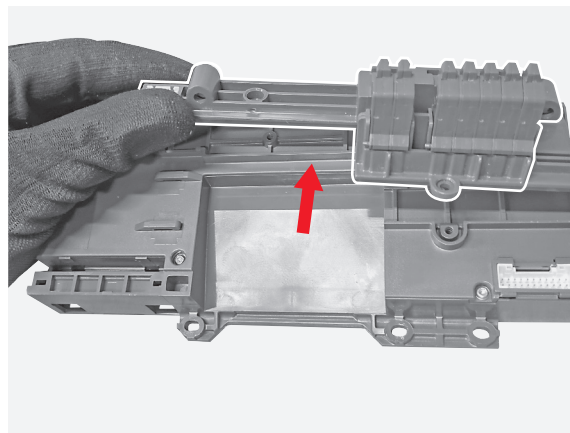


72

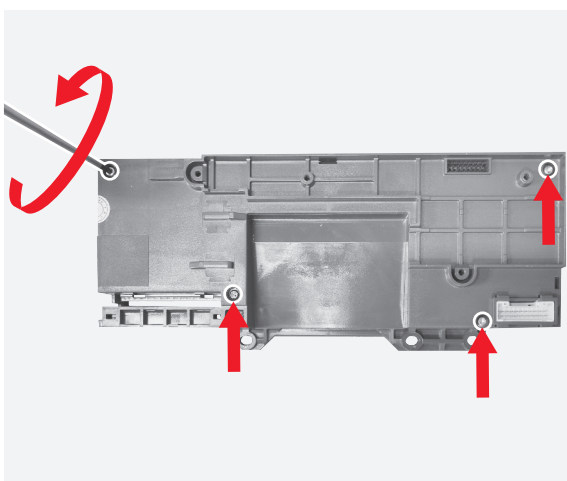
By means of the torx key unscrew the 4 screws fixing the backplane to the trip unit main structure.

**73**

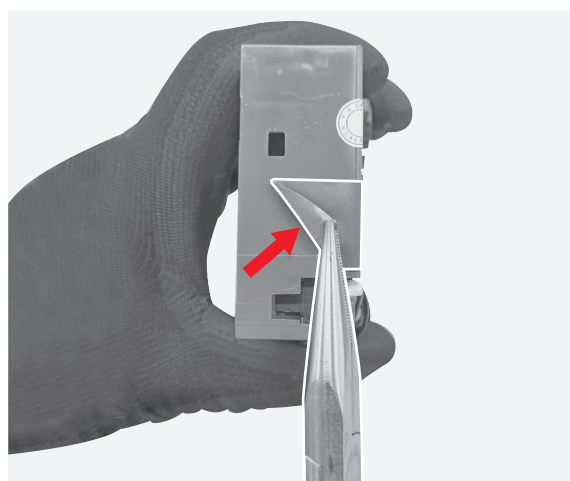
Manually complete the removal operation of the backplane.

**74**

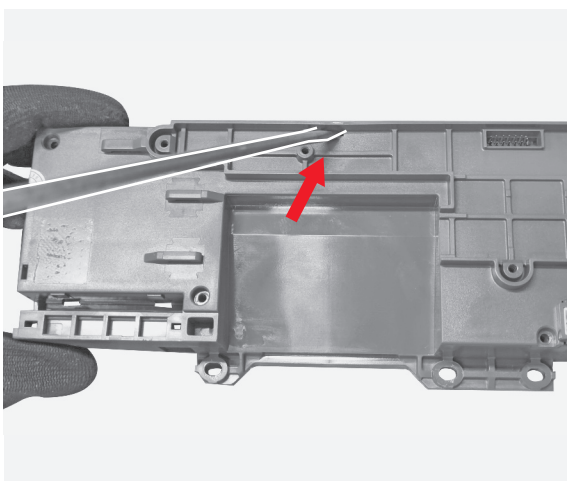
By means of the torx key unscrew the 4 screws fixing the trip unit case to the trip unit back cover.

**75**

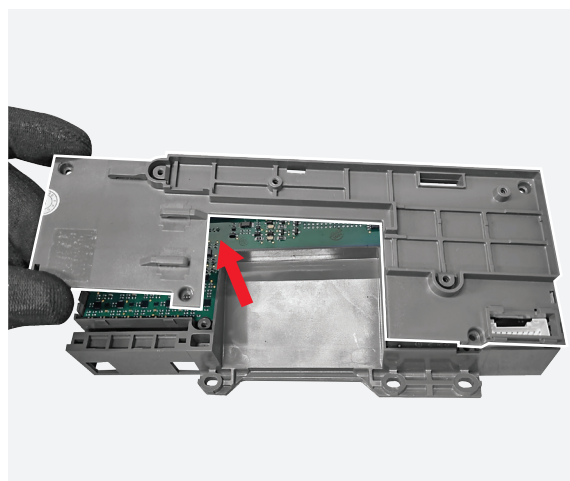
By means of the cutter start removing the blind label located on the side of the trip unit main structure and by means of the pliers complete the operation.

**76**

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

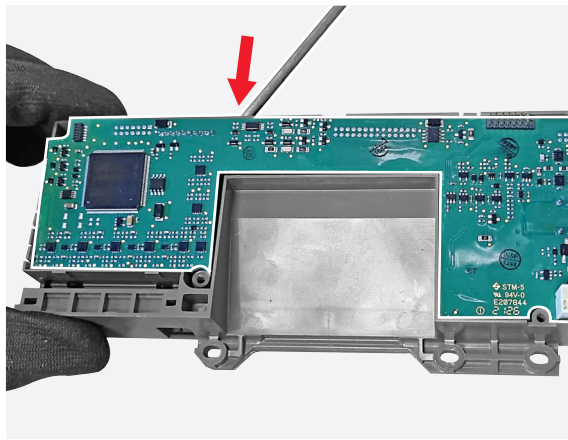
**77**

Manually remove the release case from the cover.

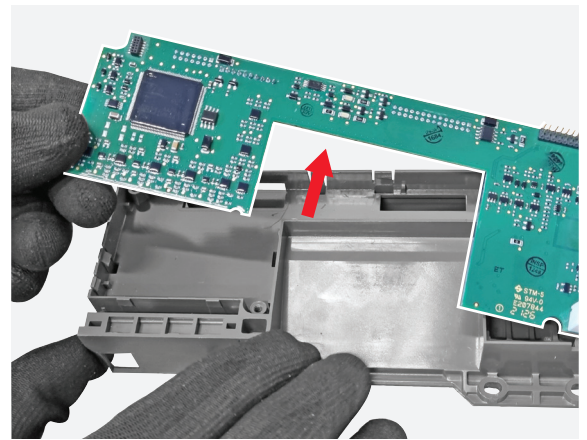


78

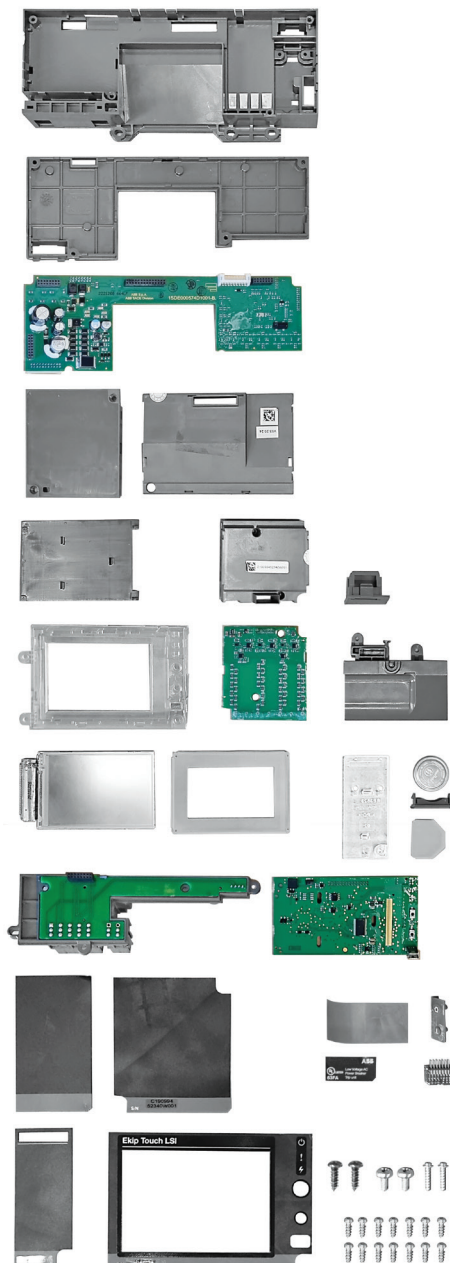
By means of the flat screwdriver unhook the trip unit printed circuit board.

**79**

Manually remove the trip unit printed circuit board.



Disassembled parts



- 2 + 2 + 4 + 1 + 2 + 1 + 4 + 4 screws (Metal)
- 1 Ekip measuring blind module label (Adhesive paper)
- 1 Ekip measuring blind plug (Plastic)
- 1 Ekip measuring blind module printed circuit board (Plastic, Metal and Electronic components) SEPARATE TREATMENT (Printed circuit board)
- 1 Ekip measuring blind case (Plastic)
- 1 plug (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 plug label (Adhesive paper)
- 1 rating plug printed circuit board (Plastic, Metal and Electronic components) SEPARATE TREATMENT (Printed circuit board)
- 1 rating plug case (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 rating plug label (Adhesive paper)
- 1 Ekip signalling 4K plug label (Adhesive paper)
- 1 Ekip signalling 4K plug (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 trip unit front label (Adhesive paper)
- 1 battery cover (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 battery (Battery) SEPARATE TREATMENT (Battery)
- 1 HMI box (Plastic)
- 1 HMI LCD cover (Plastic)
- 1 "i Test" pushbutton (Rubber)
- 1 battery gasket (Rubber)
- 1 display support (Plastic)
- 1 display printed circuit board (Plastic, Metal and Electronic components) SEPARATE TREATMENT (Printed circuit board)
- 1 display (Liquid crystal display) SEPARATE TREATMENT (Liquid crystal display)
- 1 gasket (Silicon)
- 1 backplane (Plastic, Metal and Electronic components) SEPARATE TREATMENT (Printed circuit board)
- 1 blind label (Adhesive paper)
- 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 printed circuit board (Plastic, Metal and Electronic components) SEPARATE TREATMENT (Printed circuit board)

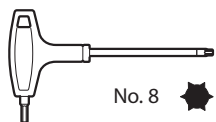
6.4 PHASE 4 – TERMINAL BOX

Tools

Flat screwdriver



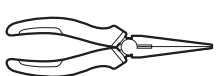
Torx key



Cross screwdriver



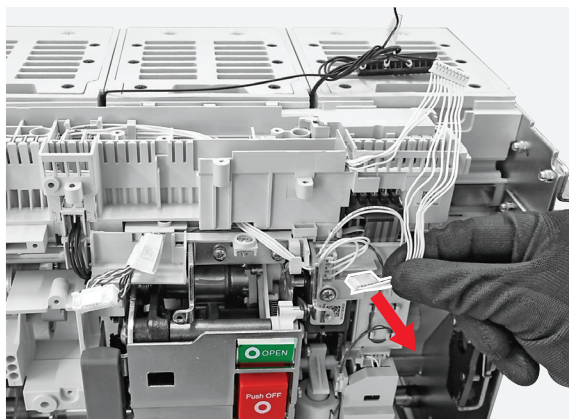
Pliers



Actions to be performed

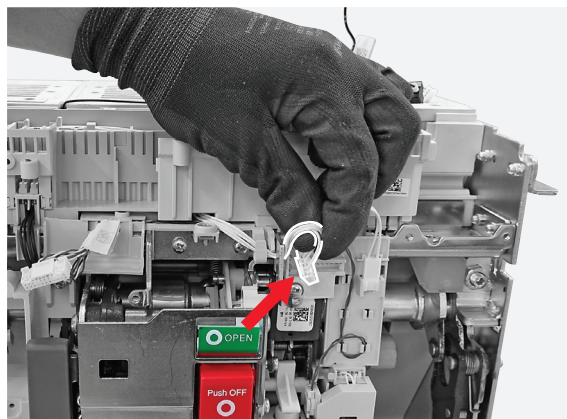
80

Manually unhook the connector indicated by the arrow fixing the terminal box case to the circuit breaker main structure.



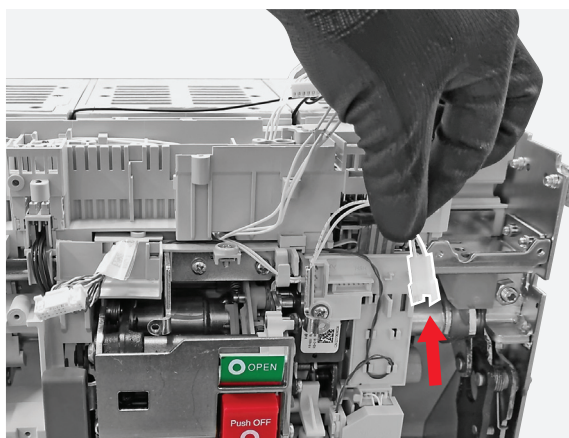
81

Manually unhook the connector indicated by the arrow fixing the terminal box case to the circuit breaker main structure.



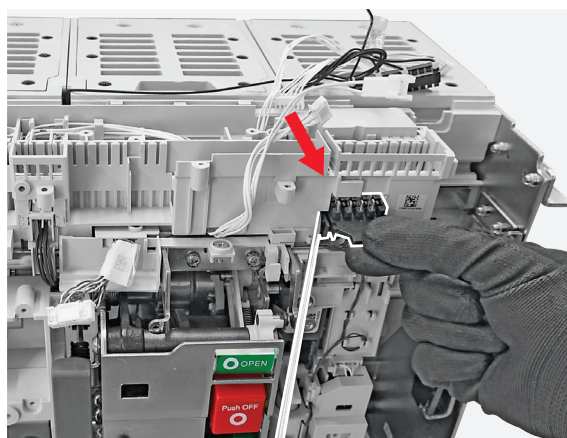
82

Manually unhook the connector indicated by the arrow fixing the terminal box case to the circuit breaker main structure.



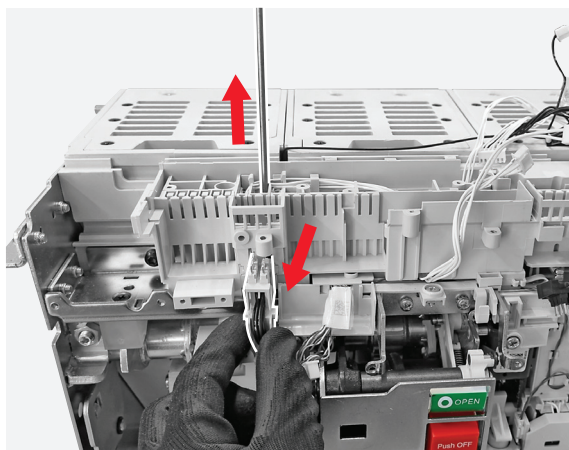
83

By means of the flat screwdriver unhook the connector fixing the terminal box case to the circuit breaker main structure.



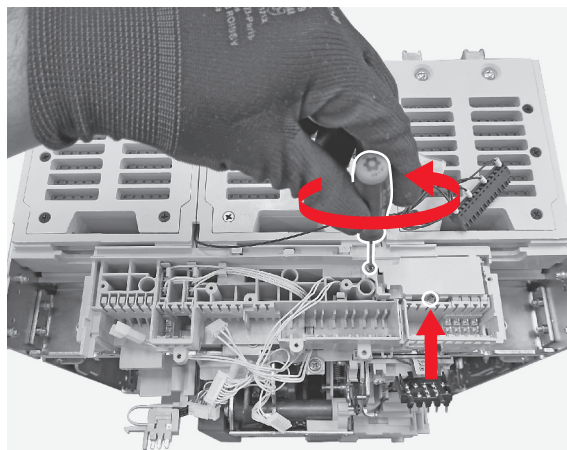
84

Insert the flat screwdriver as indicated in the picture, slightly push it in the direction indicated by the arrow and after complete the removal of the connector pulling it.



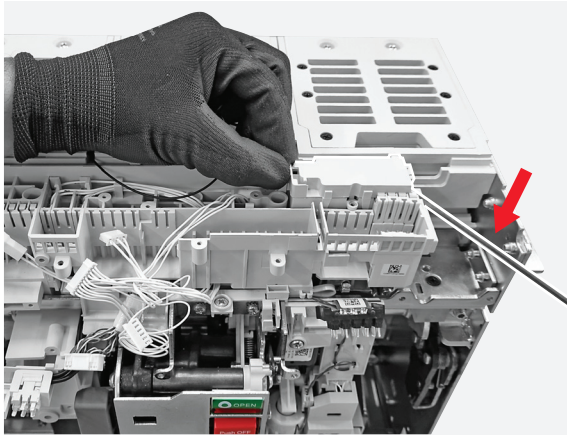
85

By means of the torx key unscrew the 2 screws fixing the 4 micro I/O assembly to the circuit breaker main structure.

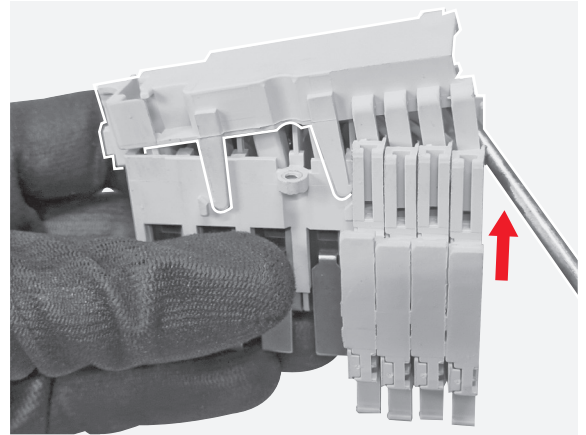


86

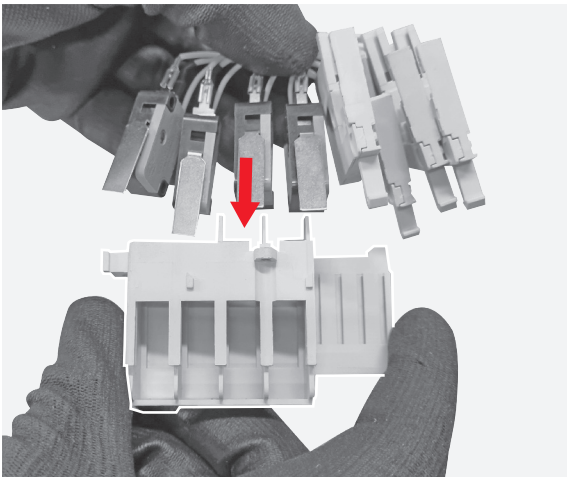
Push the flat screwdriver in the direction indicated by the arrow and after manually remove the microswitch assembly.

**87**

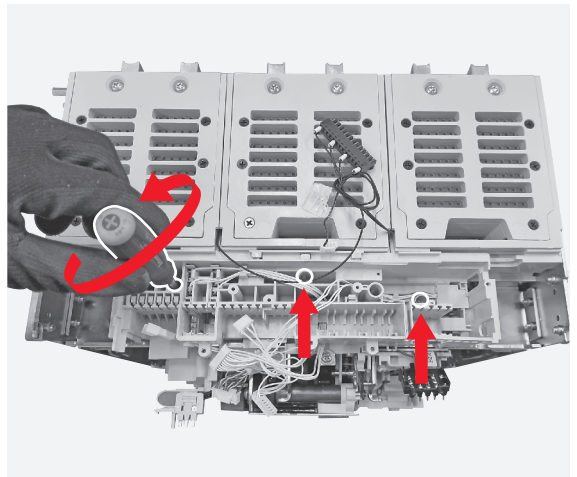
By means of the flat screwdriver separate the 4 micro I/O assembly cover from the 4 micro I/O assembly base.

**88**

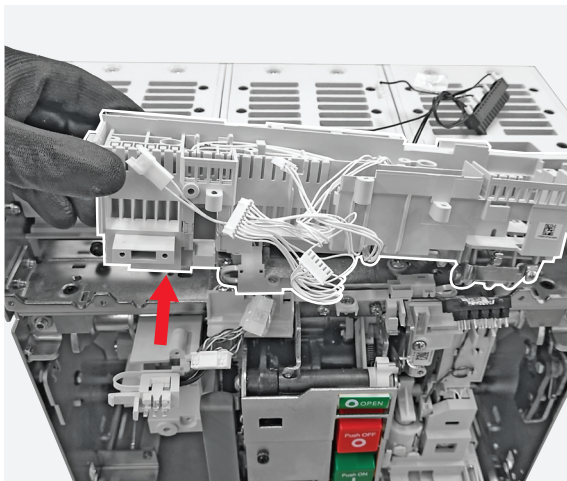
Pull out the 4 auxiliary contacts from the 4 micro I/O assembly base.

**89**

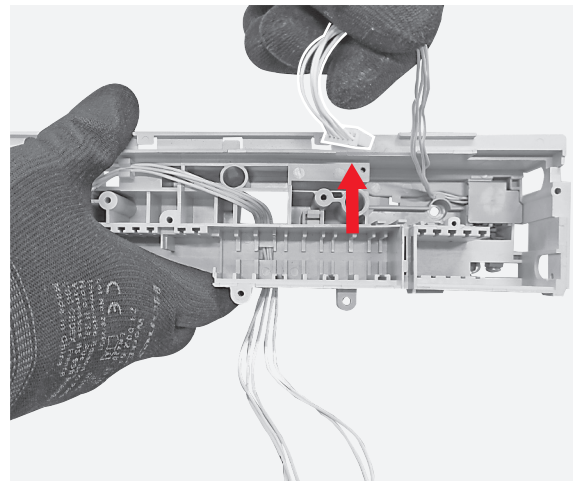
By means of the cross screwdriver unscrew the 3 screws fixing the terminal box case to the circuit breaker main structure.

**90**

Manually remove the terminal box case.

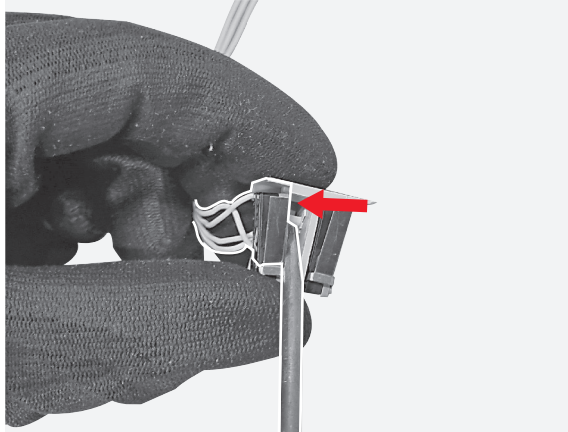
**91**

Manually pull and remove the connector located in the right part of the terminal box case.

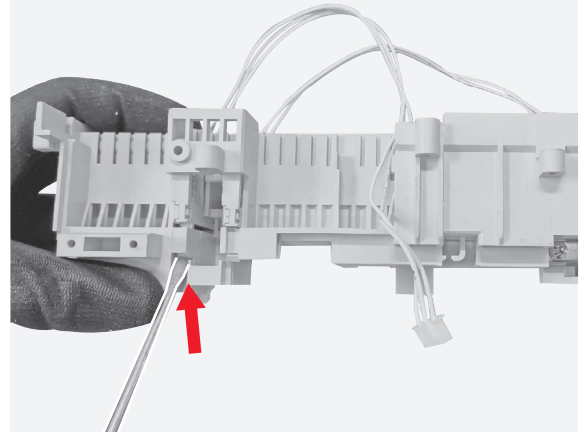


92

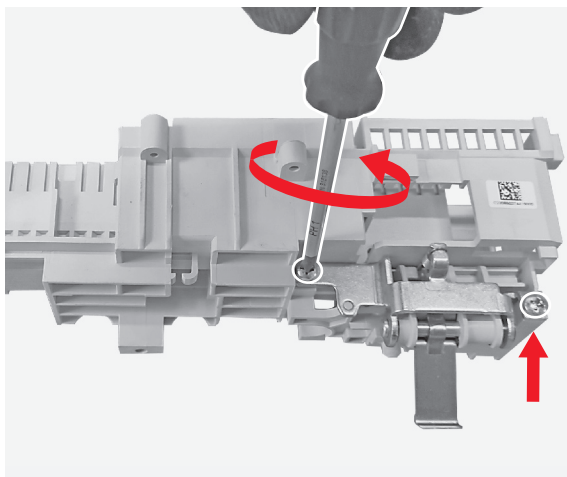
By means of the flat screwdriver unhook the 2 microswitches from their support and after separate the microswitches support from the rest of the connector.

**93**

By means of the flat screwdriver push the 2 connectors as indicated by the arrow and after manually complete the removal.

**94**

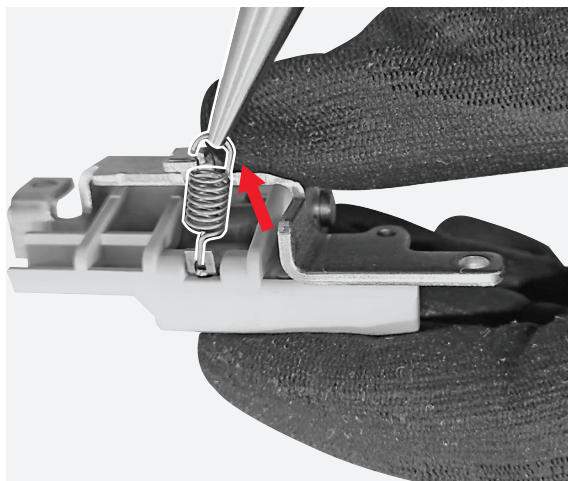
By means of the cross screwdriver unscrew the 2 screws fixing the I/O shaft group to the terminal box case.

**95**

Manually remove the I/O shaft group.

**96**

By means of the pliers remove the spring mounted on the I/O shaft group.

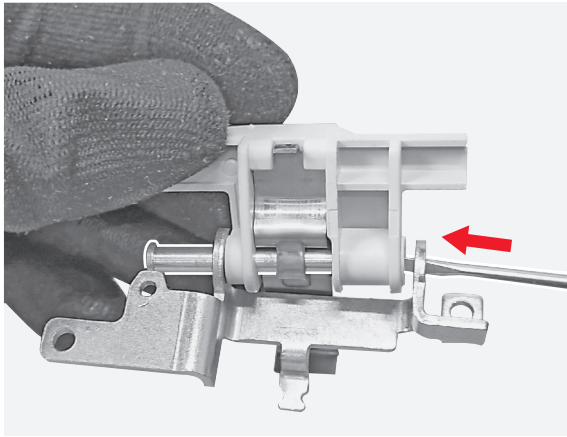
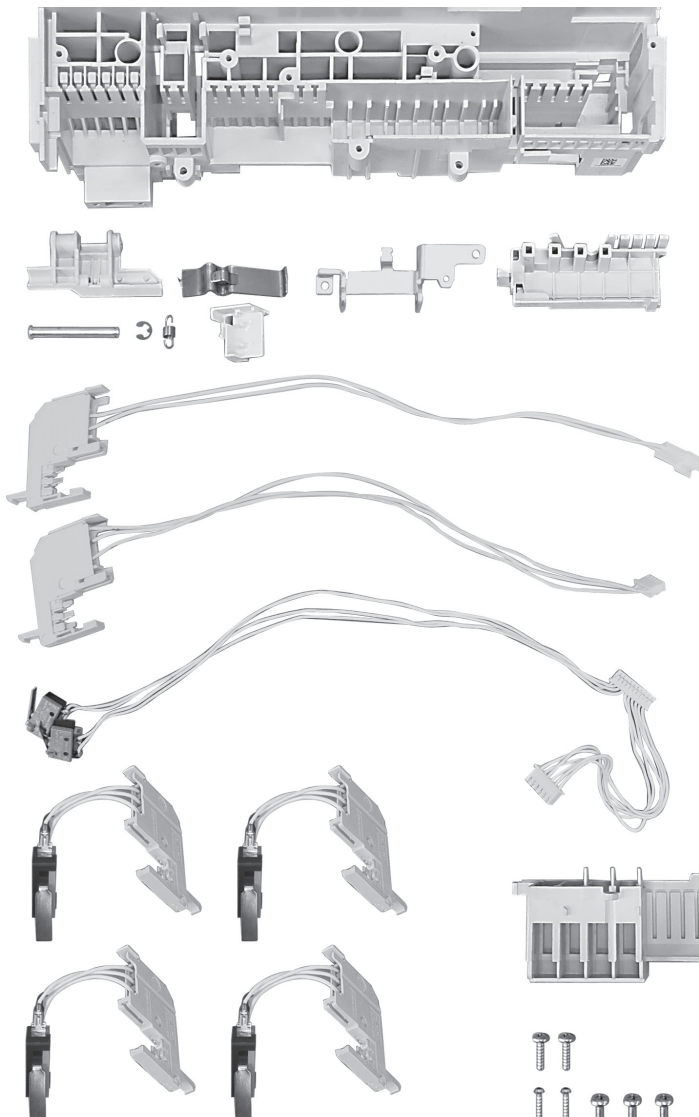
**97**

By means of the flat screwdriver remove the benzing mounted on the I/O shaft group.



98

By means of the flat screwdriver push the pin as indicated by the arrow and let the the I/O shaft, the I/O shaft group support and the leaf spring constituting the I/O shaft group separate.

**Disassembled parts**

- 2 + 3 + 2 screws (Metal)
- 1 4 micro I/O assembly cover (Plastic)
- 1 4 micro I/O assembly base (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 4 auxiliary contacts (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 2 connectors (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 connector with 2 microswitches (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 microswtiches support (Plastic)
- 1 spring (Metal)
- 1 benzing (Metal)
- 1 pin (Metal)
- 1 I/O shaft (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 I/O shaft group support (Metal)
- 1 leaf spring (Metal)
- 1 terminal box case (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)

6.5 PHASE 5 – LEFT MID AND CABLE GUIDE

Tools

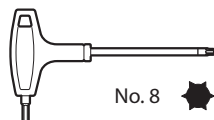
Cross screwdriver



Flat screwdriver



Torx key

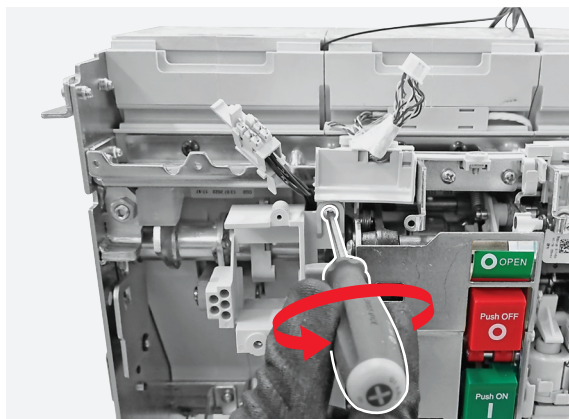


No. 8

Actions to be performed

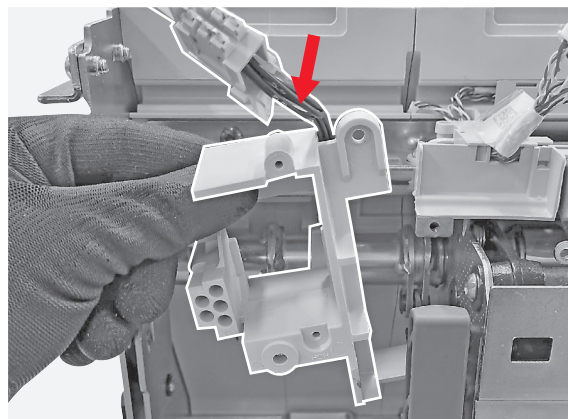
99

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



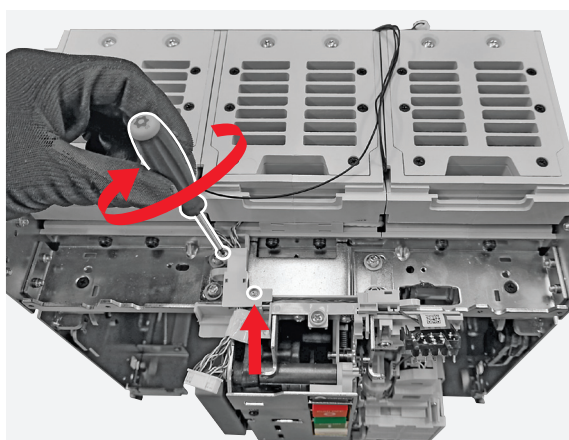
100

Manually remove the left MID from the circuit breaker main structure.



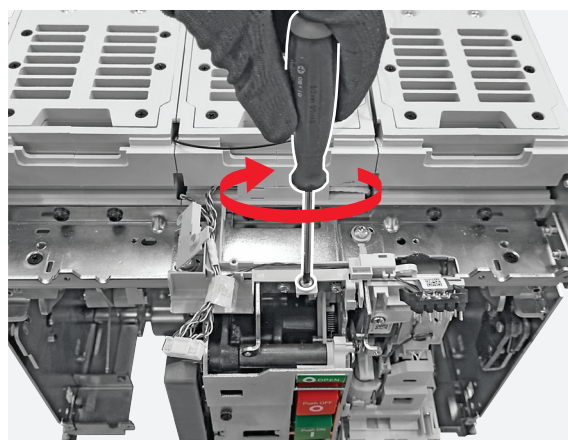
101

By means of the torx key unscrew the 2 screws fixing the cable guide to the circuit breaker main structure.



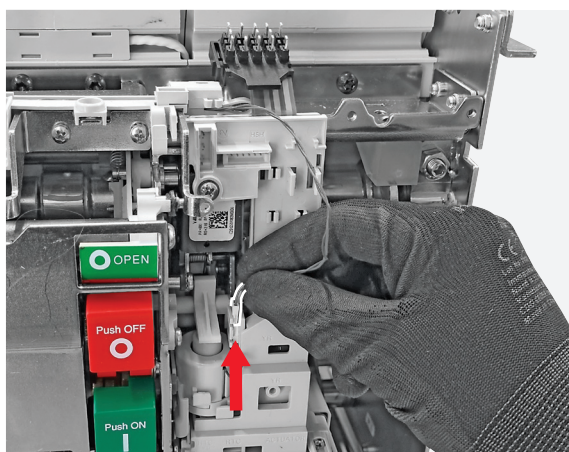
102

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



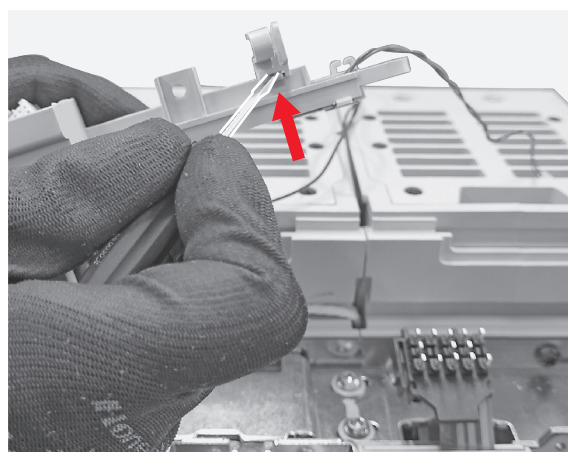
103

Manually unhook the connector fixing the cable guide to the circuit breaker main structure.



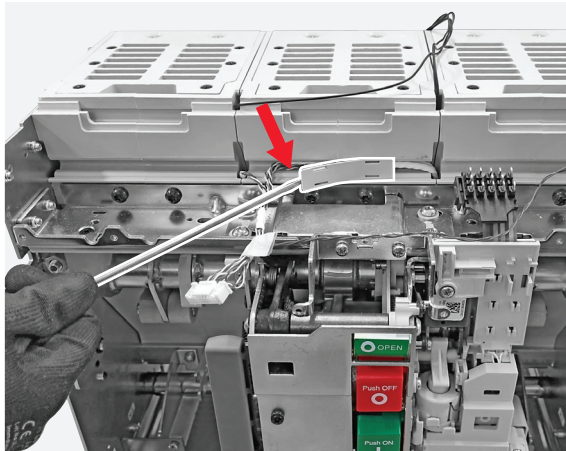
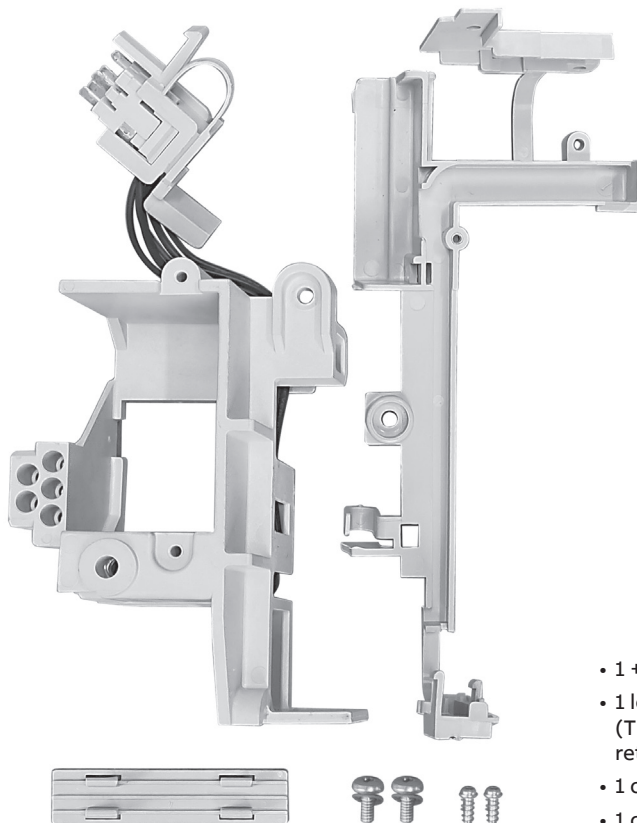
104

By means of the flat screwdriver unhook the flap from the cable guide and complete the removal of the cable guide.



105

By means of the flat screwdriver remove the clip and after manually complete the removal.

**Disassembled parts**

- 1 + 2 + 1 screws (Metal)
- 1 left MID (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 cable guide (Plastic)
- 1 clip (Plastic)

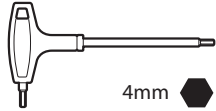
6.6 PHASE 6 – CD

Tools

Cross screwdriver



Allen key



Flat screwdriver



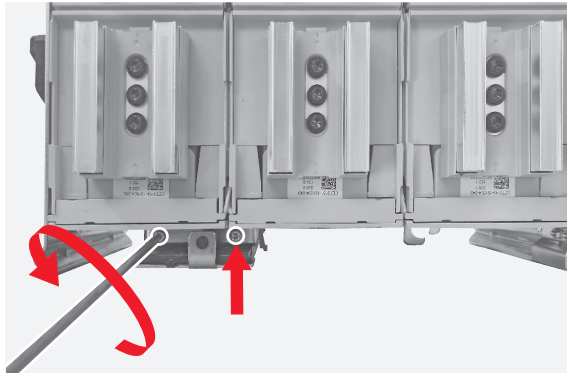
Pliers



Actions to be performed

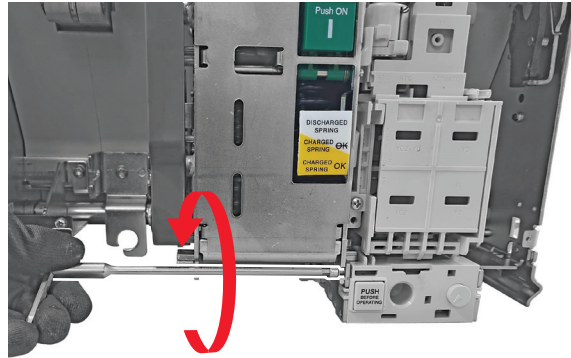
106

By means of the allen key unscrew the 2 screws located in the rear part of the circuit breaker fixing the CD to the circuit breaker main structure.



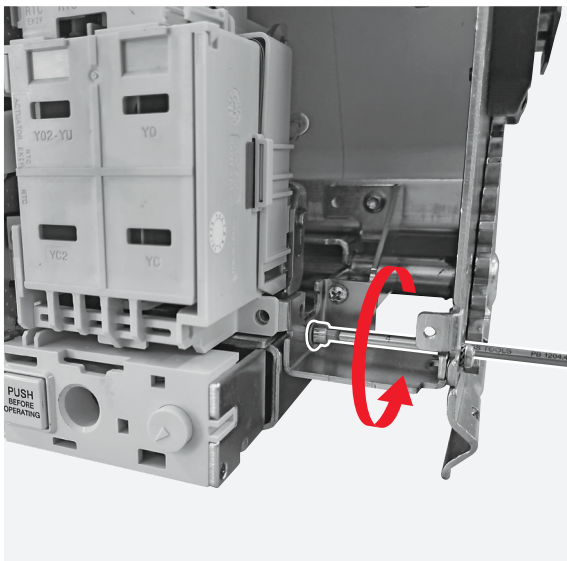
107

By means of the allen key unscrew the screw located in the front part of the circuit breaker fixing the CD to the circuit breaker main structure.



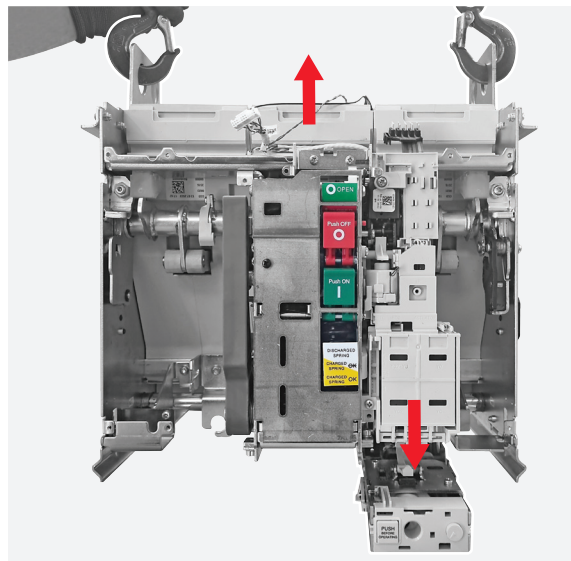
108

By means of the allen key unscrew the screw located in the front part of the circuit breaker fixing the CD to the circuit breaker main structure.



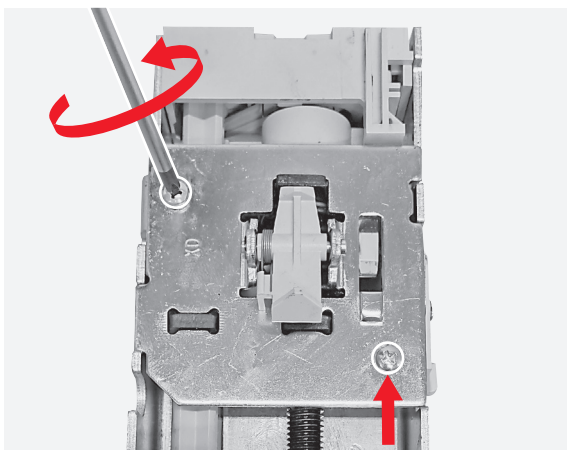
109

Lift the circuit breaker using the lifting plates and let the CD disconnect by gravity.



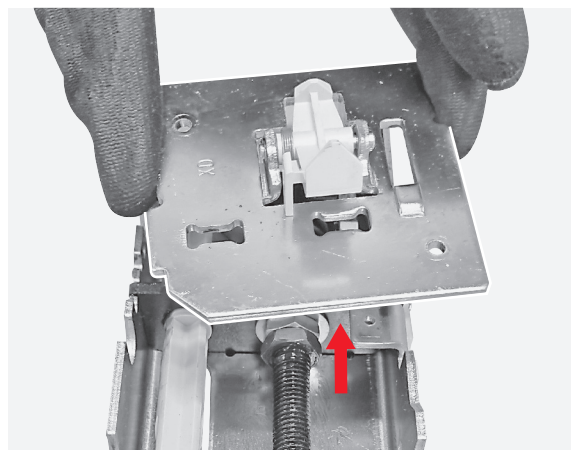
110

By means of the cross screwdriver unscrew the 2 screws fixing the cover to the CD.



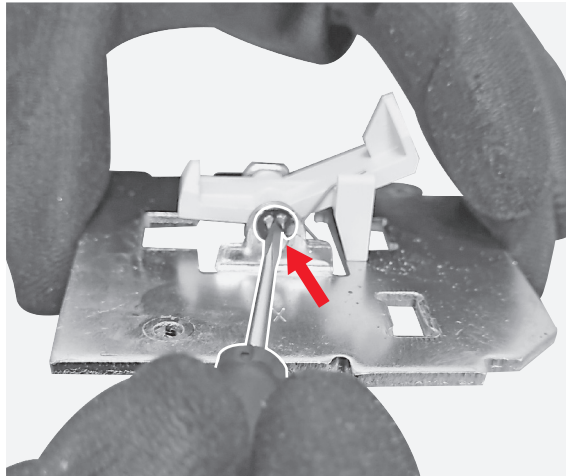
111

Manually remove the cover.

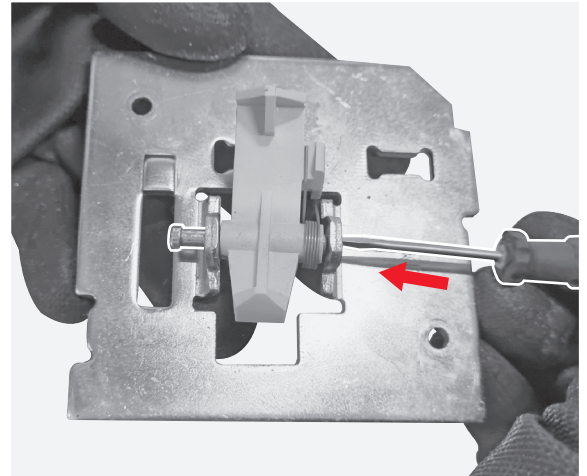


112

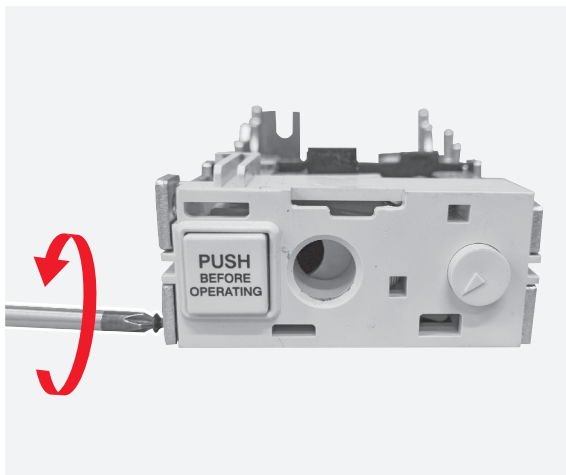
By means of flat screwdriver remove the benzing.

**113**

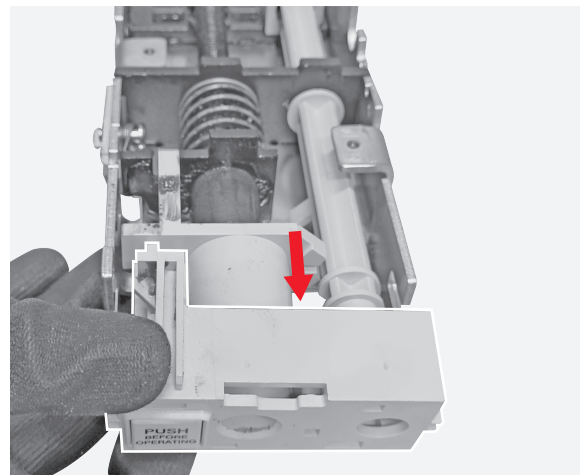
By means of the flat screwdriver push the pin as indicated by the arrow and let the spring and the CD block cover separate from the cover.

**114**

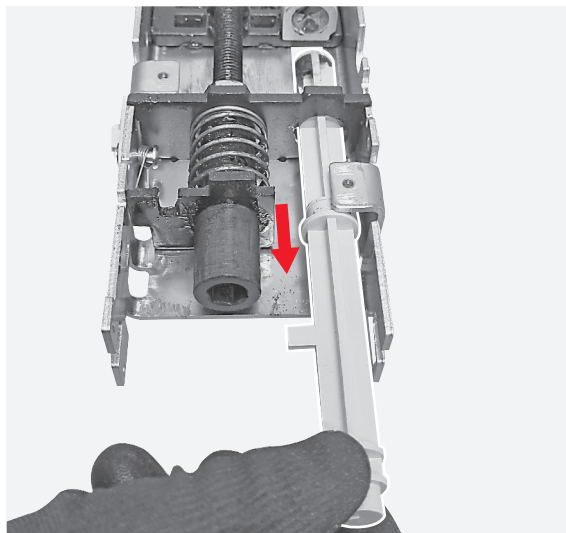
By means of the cross screwdriver unscrew the 2 screws fixing the front of the CD to the CD main structure.

**115**

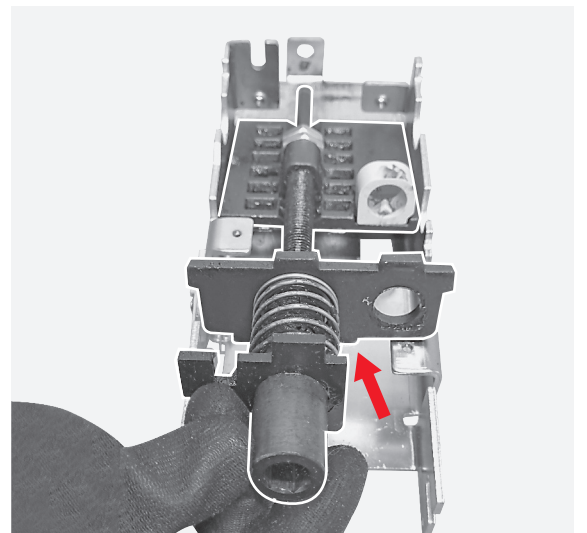
Manually remove the front of the CD.

**116**

Manually remove the position indicator.

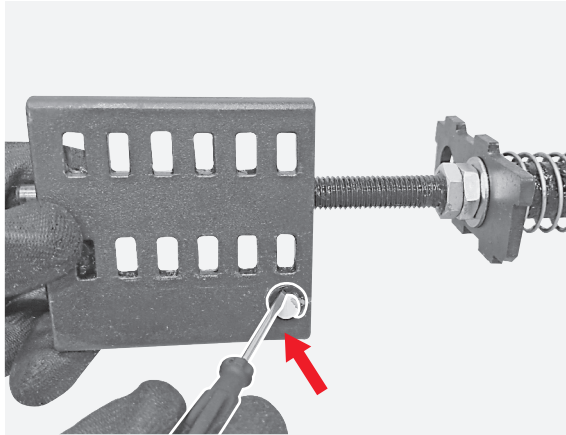
**117**

Manually remove the screw group.

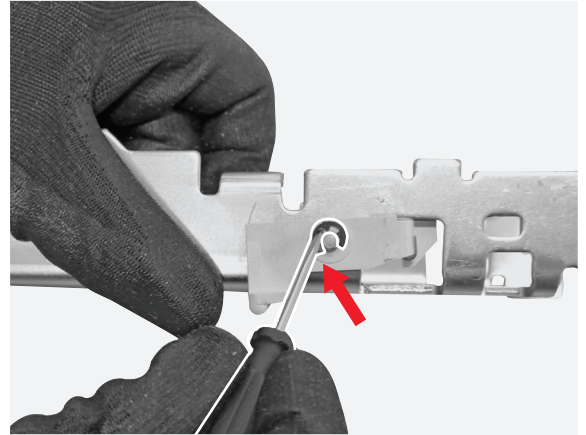


118

By means of the flat screwdriver remove the benzing and after manually remove the feeler.

**119**

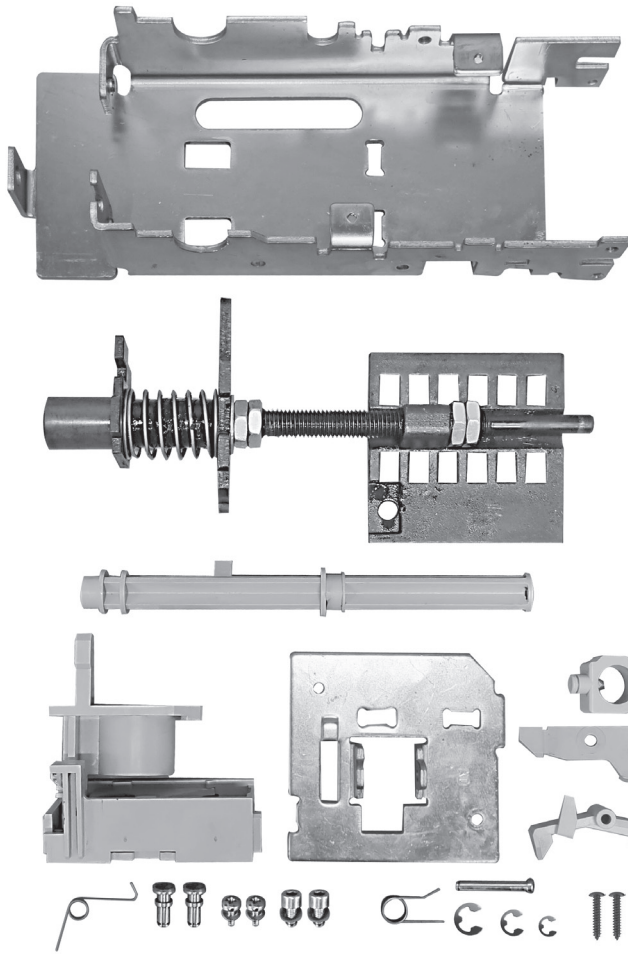
by means of the pliers remove the spring and let the pin and the CD block lever separate from the CD base.

**120**

By means of the pliers remove the spring and let the pin and the CD block lever separate from the CD base.



Disassembled parts



- 2 + 1 + 1 + 2 + 2 screws (Metal)
- 1 cover (Metal)
- 1 benzing (Metal)
- 1 pin (Metal)
- 1 spring (Metal)
- 1 CD block cover (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 front of the CD (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 position indicator (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 screw group (Metal)
- 1 + 1 benzings (Metal)
- 1 feeler (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 pin (Metal)
- 1 CD block lever (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 CD base (Metal)

6.7 PHASE 7 – MID

Tools

Cross screwdriver



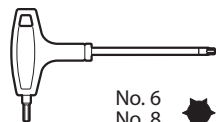
Pliers



Flat screwdriver



Torx key

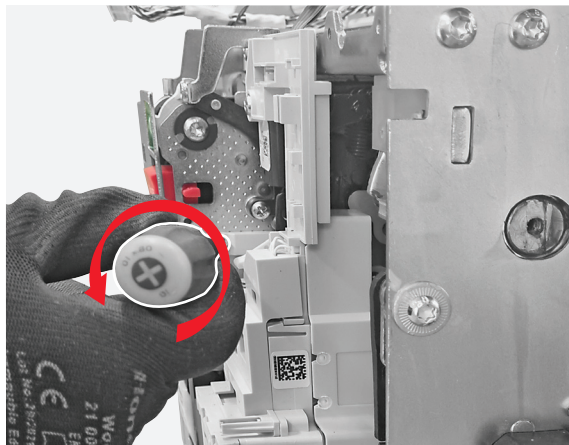


No. 6
No. 8

Actions to be performed

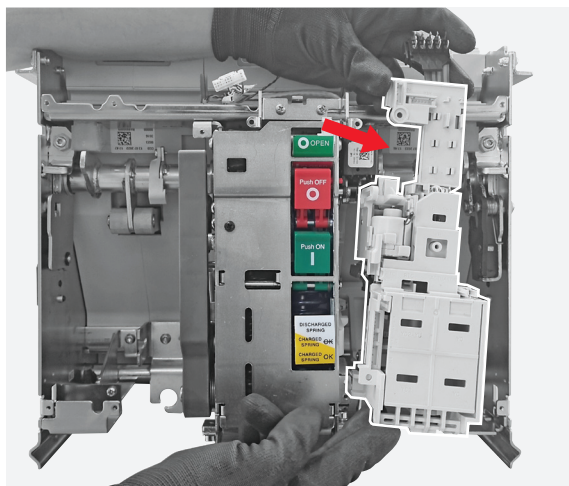
121

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



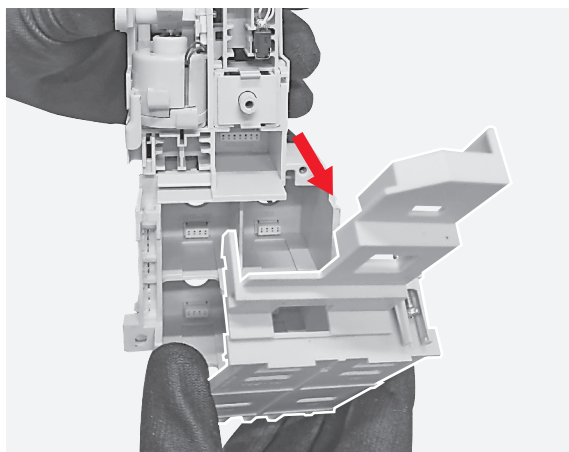
123

Manually remove the MID.



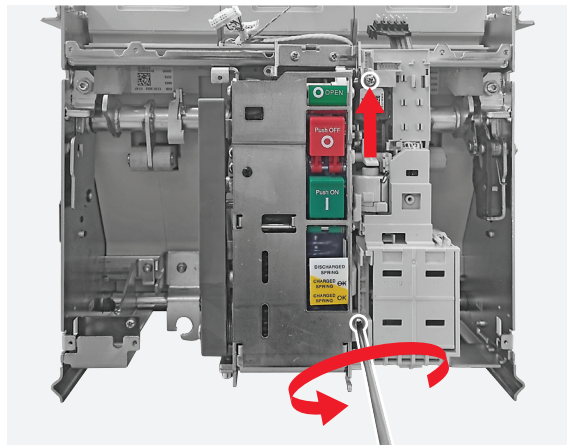
125

Manually remove the releases door.



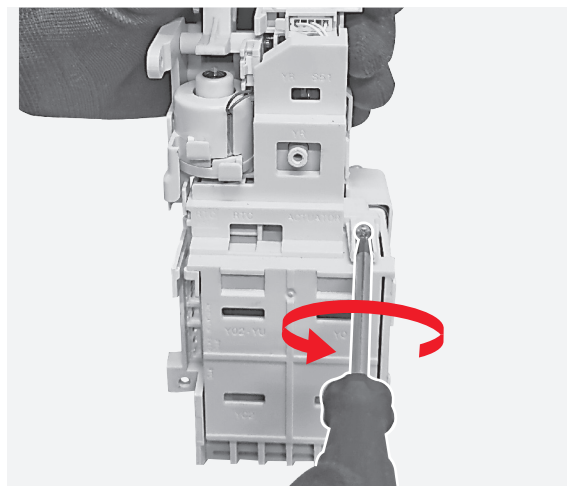
122

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



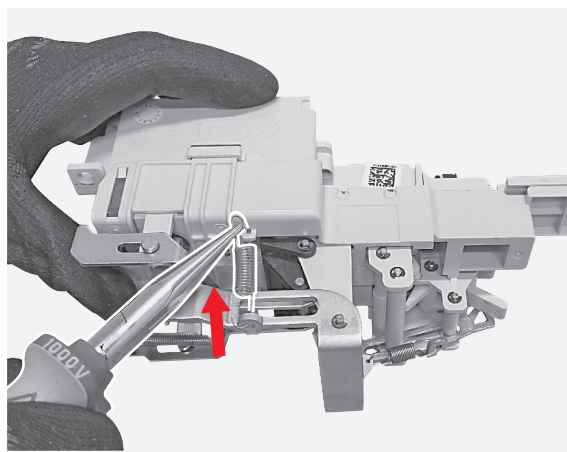
124

By means of the cross screwdriver unscrew the screw fixing the releases door to the MID main structure.



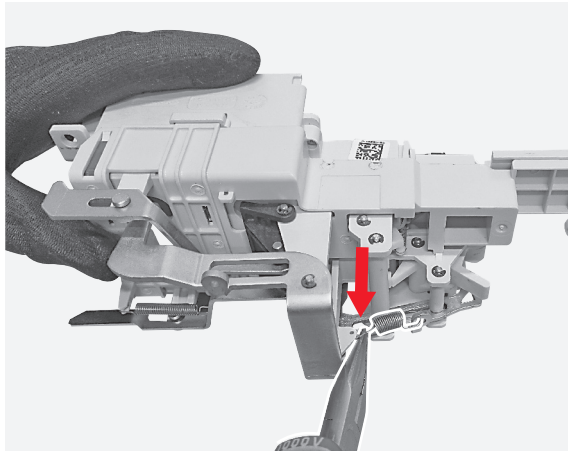
126

By means of the pliers unhook and remove the spring indicated by the arrow mounted on the MID main structure.

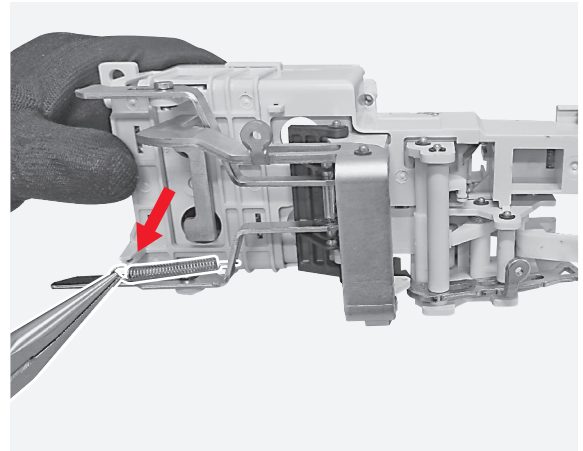


127

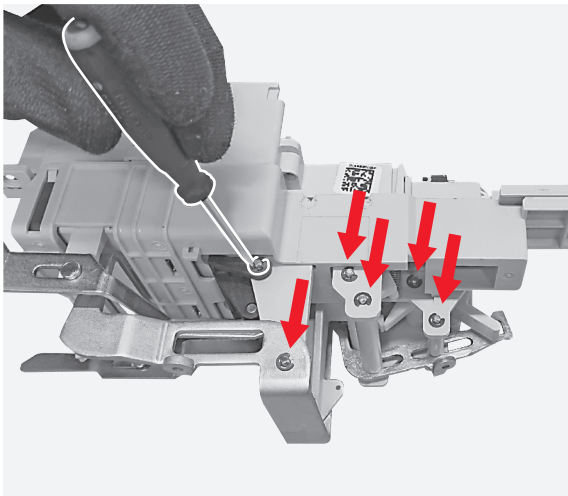
By means of the pliers unhook and remove the spring indicated by the arrow mounted on the MID main structure.

**128**

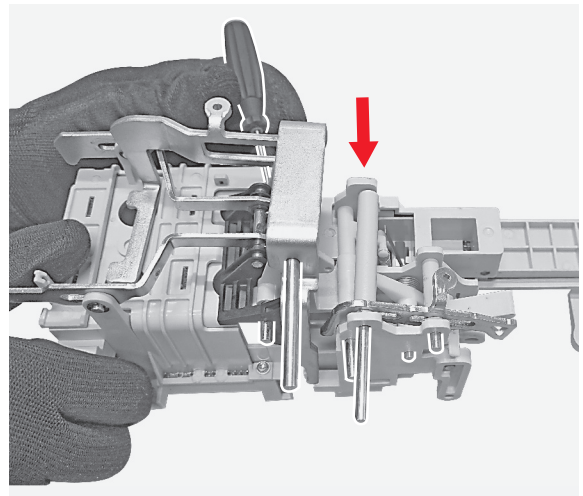
By means of the pliers unhook and remove the spring indicated by the arrow mounted on the MID main structure.

**129**

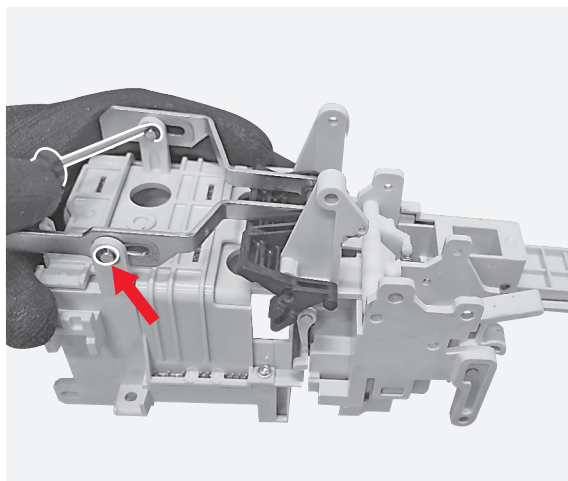
By means of the flat screwdriver remove the 6 benzings.

**130**

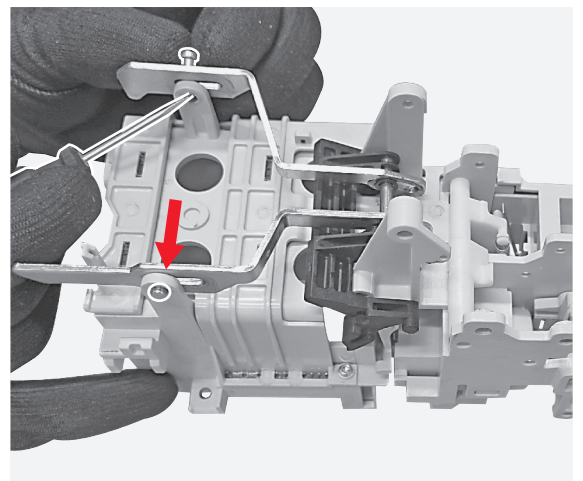
By means of the flat screwdriver, manually and by gravity remove the parts (6 pins, 2 springs, 2 metal parts and 3 plastic parts) from the MID main structure.

**131**

By means of the flat screwdriver remove the 2 benzings.

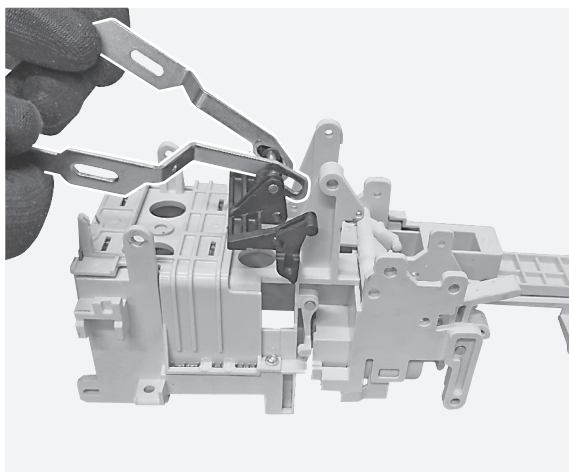
**132**

By means of the flat screwdriver remove the 2 pins.

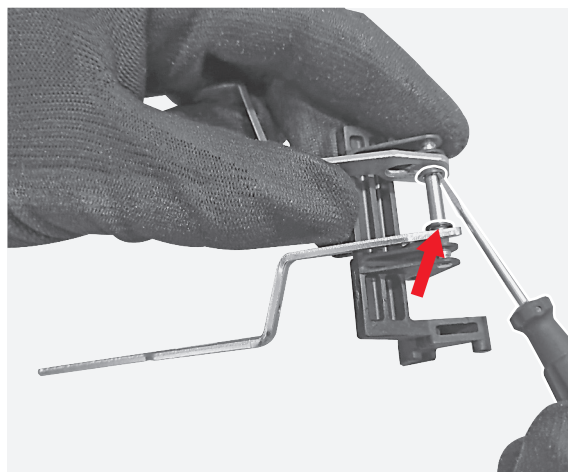


133

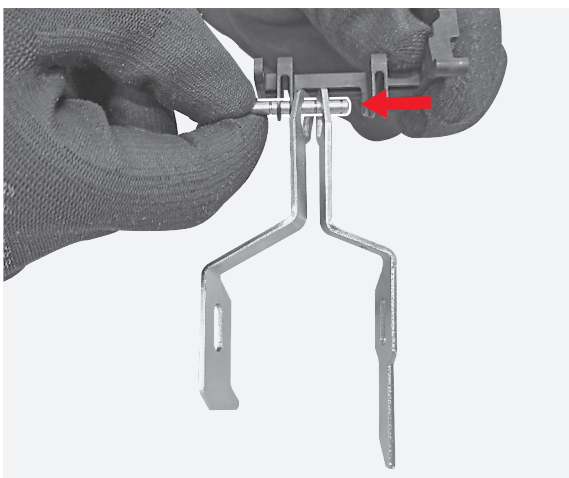
Manually remove the assembly mounted on the MID main structure.

**134**

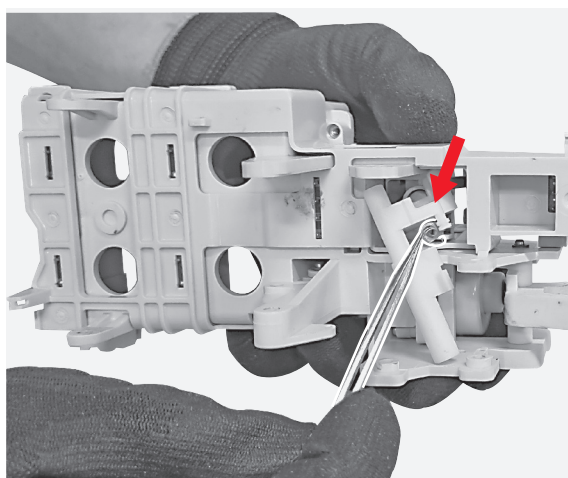
By means of the flat screwdriver remove the 2 benzings mounted on the assembly mounted on the MID main structure.

**135**

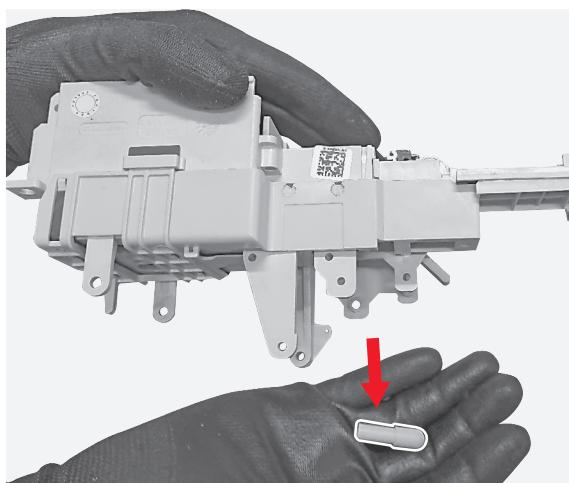
Manually remove the pin and let all the other components constituting the assembly mounted on the MID main structure (2 metal parts and 1 plastic part) separate.

**136**

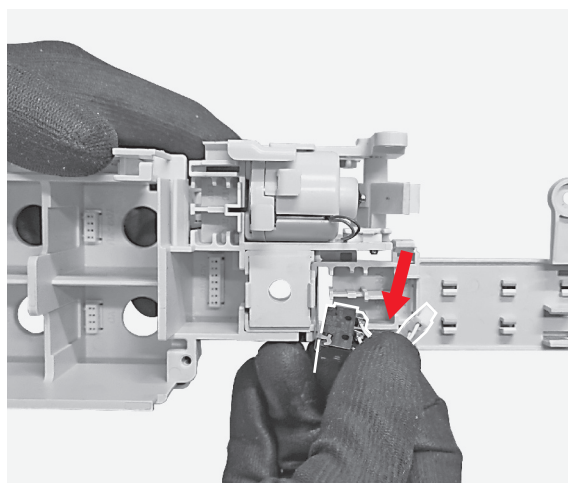
By means of the pliers unhook the spring and let the spring and the MID reset lever fall by gravity.

**137**

Let fall by gravity the mechanical reset anchor.

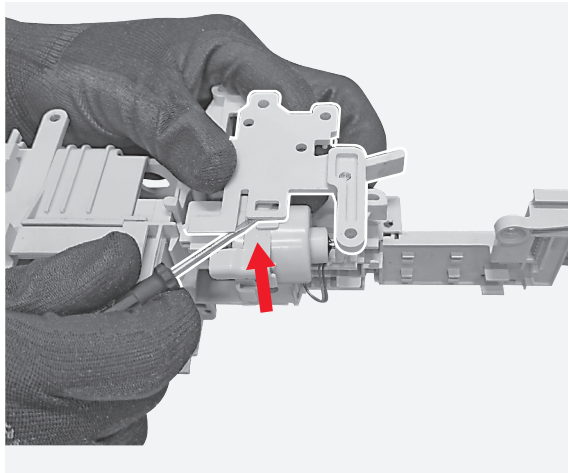
**138**

Manually remove the microswitch.

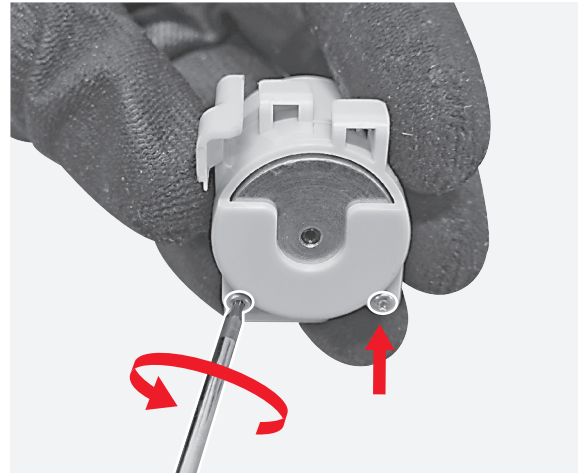


139

By means of the flat screwdriver slightly lift up the appendix as indicated by the arrow and manually remove the trip coil assembly.

**140**

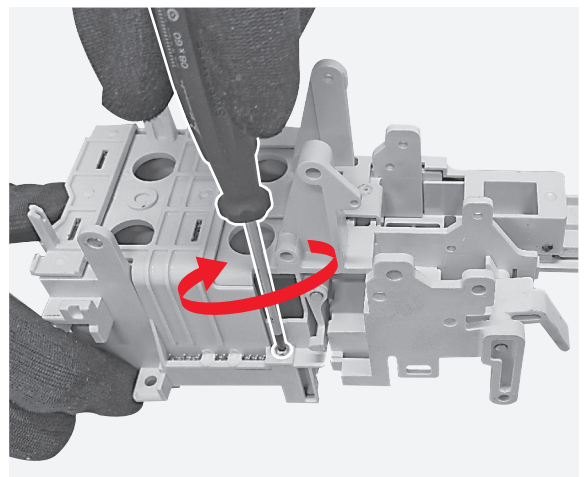
By means of the torx key (size 6) unscrew the 2 screws fixing the trip coil support base to the trip coil cover.

**141**

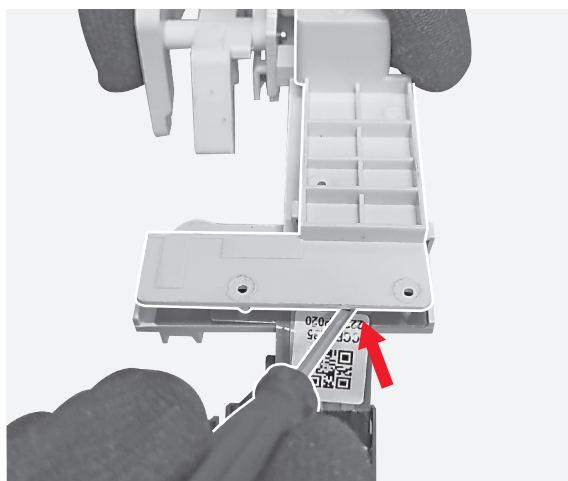
Manually separate the trip coil support base, the trip coil cover and the trip coil

**142**

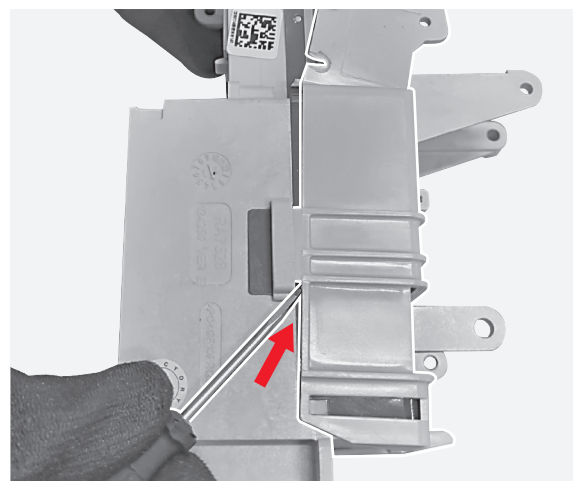
By means of the torx key (size 8) unscrew the screw fixing the flat cover to the MID main structure.

**143**

By means of the flat screwdriver unhook as indicated by the arrow the flat cover from the MID main structure.

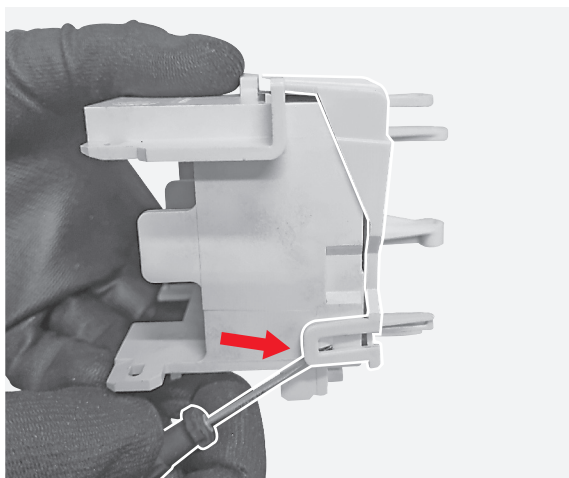
**144**

By means of the flat screwdriver unhook as indicated by the arrow the flat cover from the MID main structure.

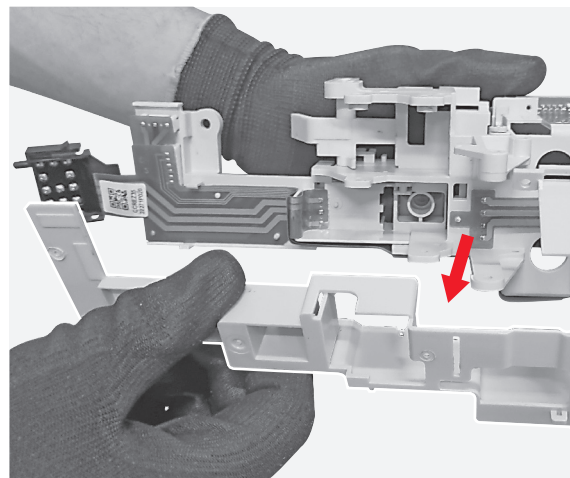


145

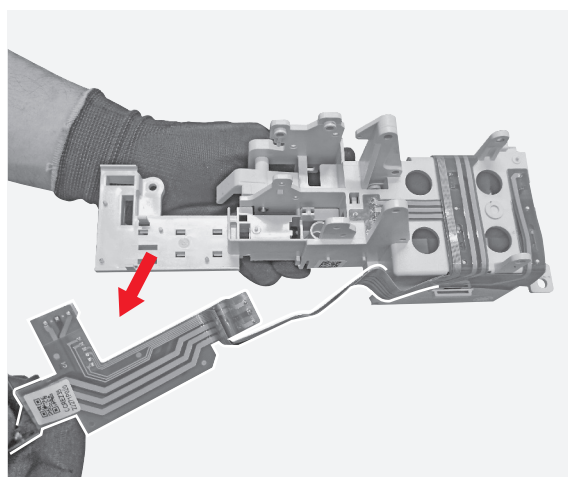
By means of the flat screwdriver unhook as indicated by the arrow the flat cover from the MID main structure.

**146**

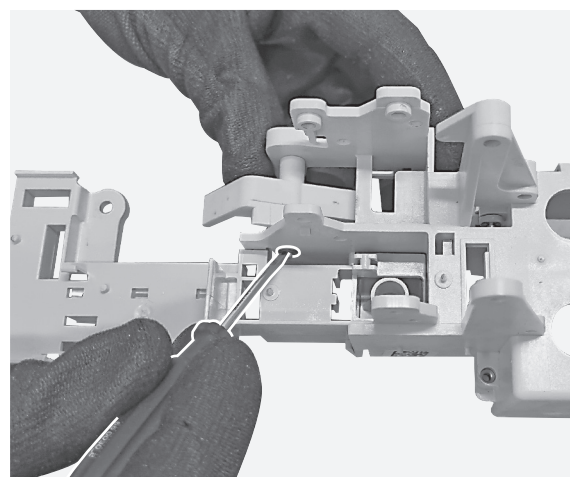
Manually remove the flat cover.

**147**

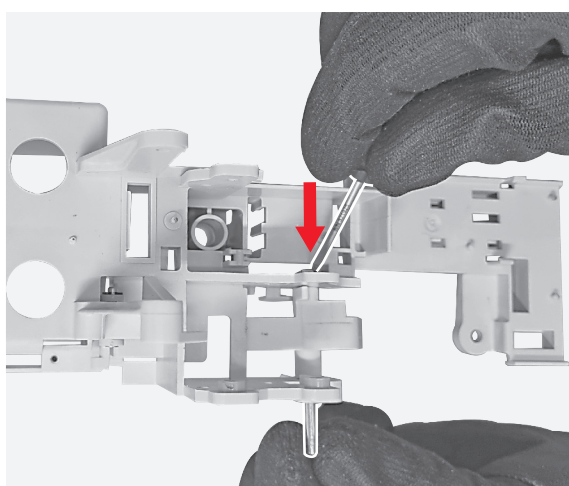
Manually remove the auxiliary flat assembly.

**148**

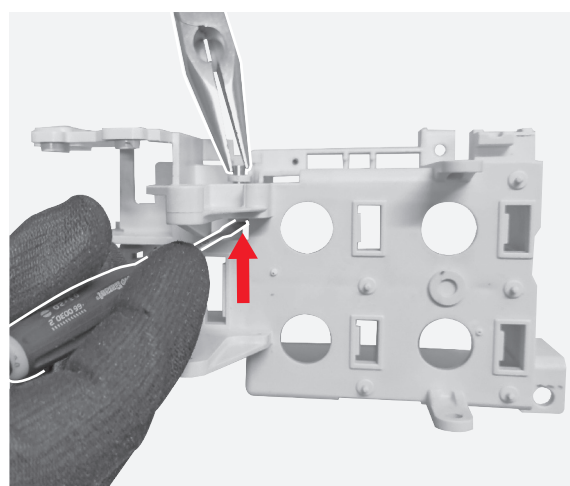
By means of the flat screwdriver remove the benzene.

**149**

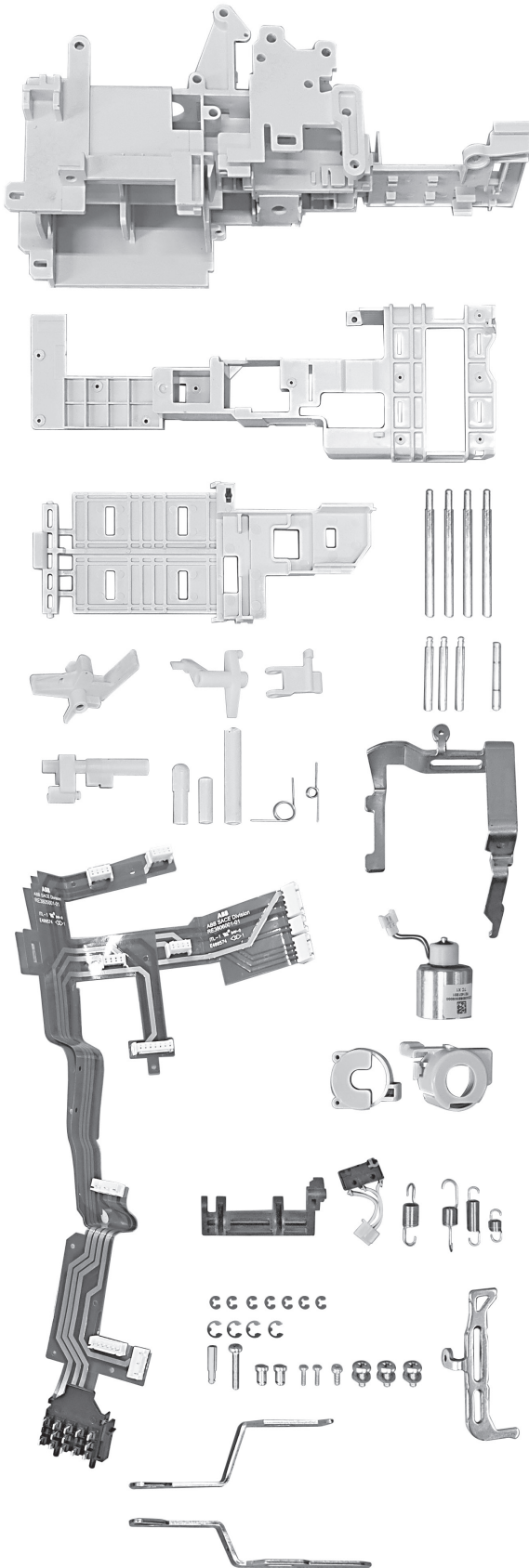
By means of the flat screwdriver push the pin as indicated by the arrow and after manually remove the pin and the SA lever.

**150**

By means of the flat screwdriver push the pin as indicated by the arrow and after by means of the pliers remove the pin; the RTC micro lever will fall by gravity.



Disassembled parts

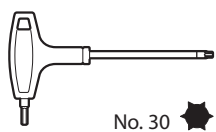


- 1 + 2 + 1 + 2 + 1 screws (Metal)
- 1 releases door (Plastic + Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 + 1 + 1 + 2 + 1 springs (Metal)
- 6 + 2 + 2 + 1 benzings (Metal)
- 6 + 2 + 1 + 1 + 1 pins (Metal)
- 1 SCR lever (Metal)
- 1 SOR-UVR lever (Metal)
- 1 MID pawl (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 2 spacers (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 2 levers (Metal)
- 1 BA-MT lever (Plastic)
- 1 MID reset lever (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 mechanical reset anchor (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 microswitch (Plastic and Metal)
- 1 trip coil support base (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 trip coil cover (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 trip coil (Plastic, Metal and Magnets) SEPARATE TREATMENT (Magnets)
- 1 flat cover (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 auxiliary flat assembly (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 SA lever (Plastic)
- 1 RTC micro lever (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 MID main structure (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)

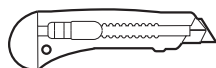
6.8 PHASE 8 – SHOULDERS

Tools

Torx key



Cutter



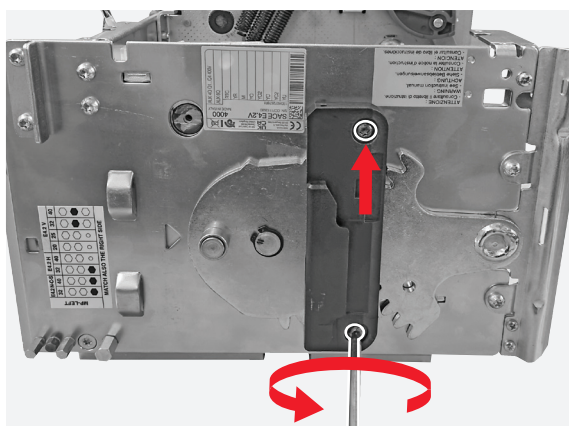
Flat screwdriver



Actions to be performed

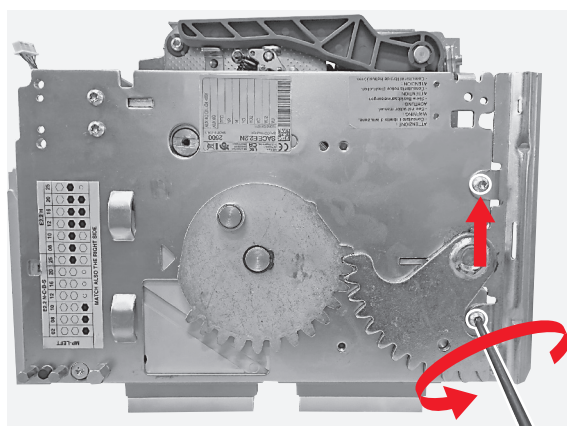
151

Put the circuit breaker in horizontal position and by means of the torx key unscrew the 2 screws fixing the docking support to the left shoulder and after manually remove it.



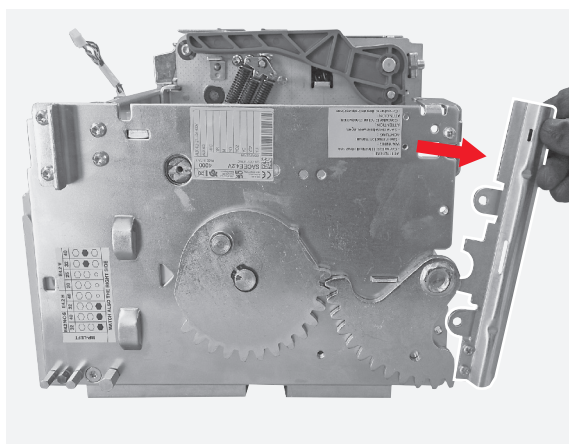
152

By means of the torx key unscrew the 2 screws fixing the left support to the left shoulder.



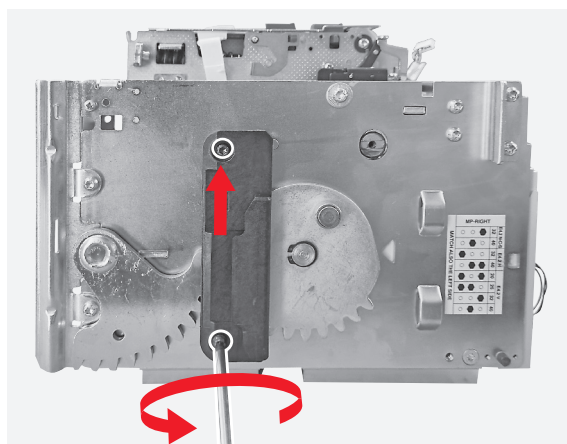
153

Manually remove the left support from the left shoulder.



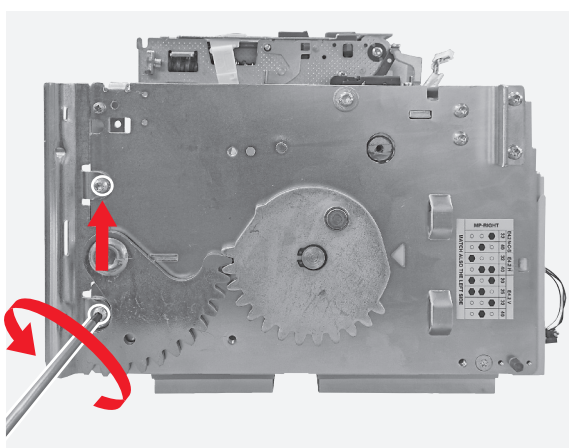
154

By means of the torx key unscrew the 2 screws fixing the docking support to the right shoulder and after manually remove it.



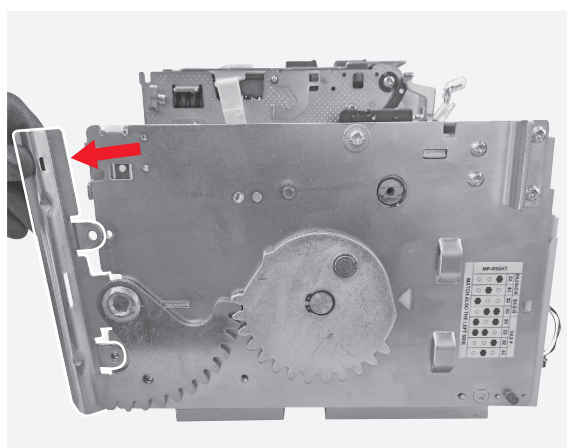
155

By means of the torx key unscrew the 2 screws fixing the right support to the right shoulder.



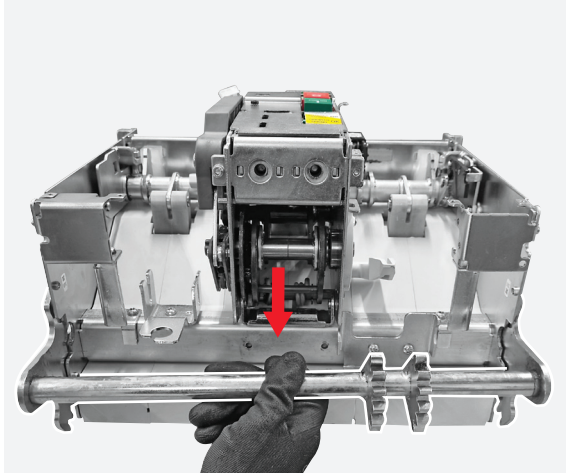
156

Manually remove the right support from the right shoulder.

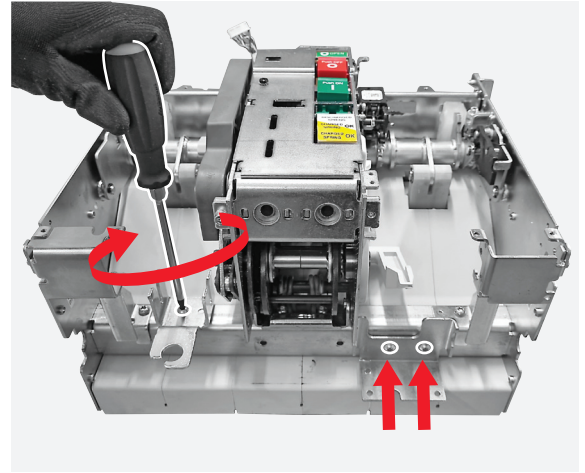


157

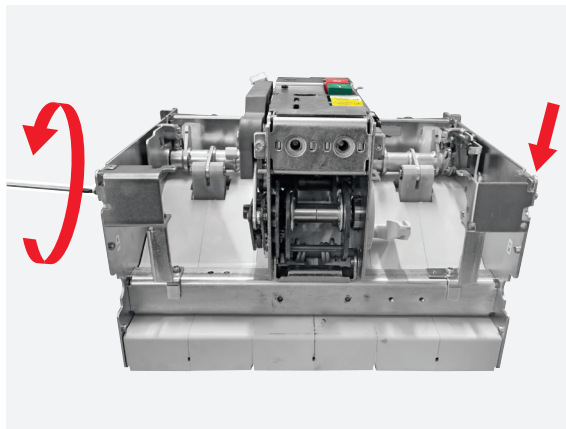
Manually remove the assembly shaft.

**158**

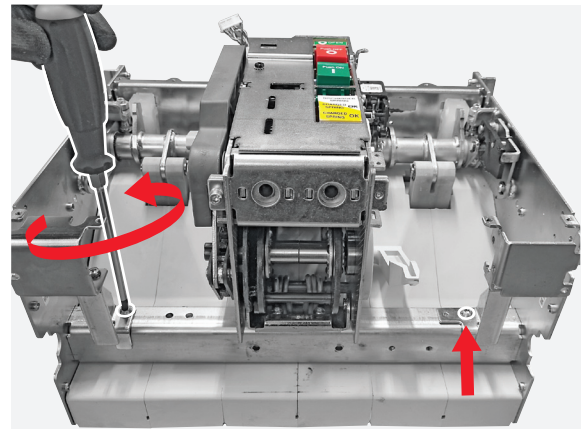
By means of the torx key unscrew the 3 screws fixing the motor fixing plate and the support mounted in the bottom part of the circuit breaker main structure and after manually remove the motor fixing plate and the support.

**159**

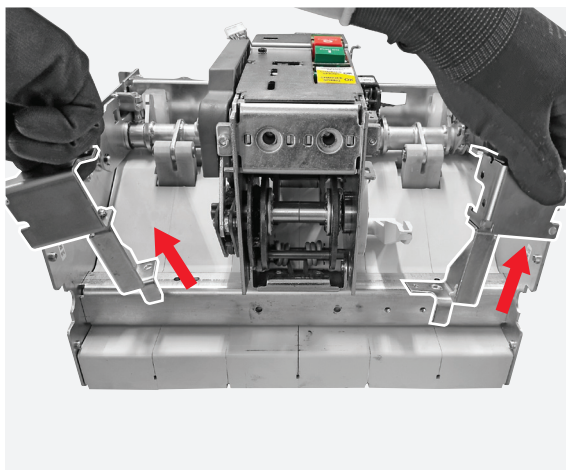
By means of the cross screwdriver unscrew the 1 + 1 screws fixing the 2 spacers to the circuit breaker main structure.

**160**

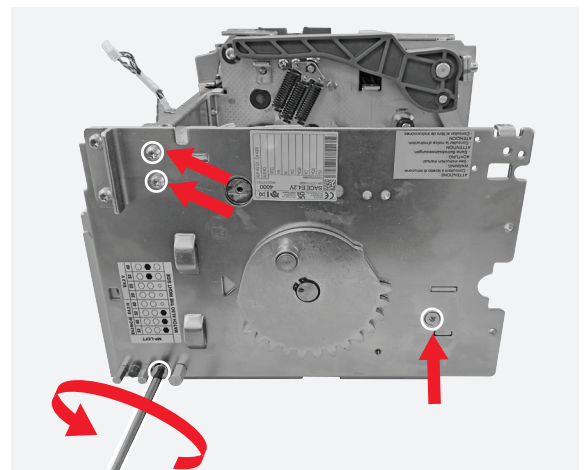
By means of the torx key unscrew the 1 + 1 screws fixing the spacers to the circuit breaker main structure.

**161**

Manually remove the 2 spacers.

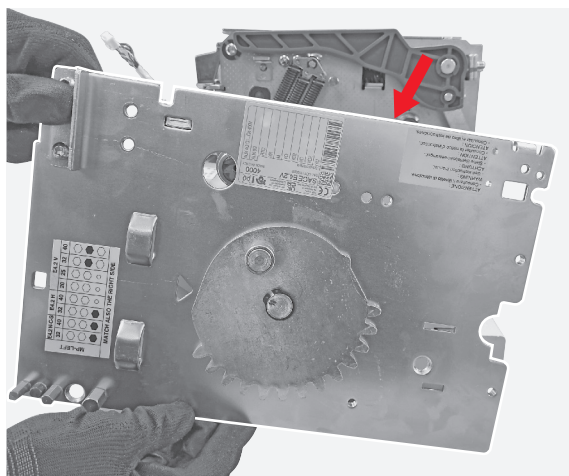
**162**

By means of the torx key unscrew the 4 screws fixing the left shoulder to the circuit breaker main structure.

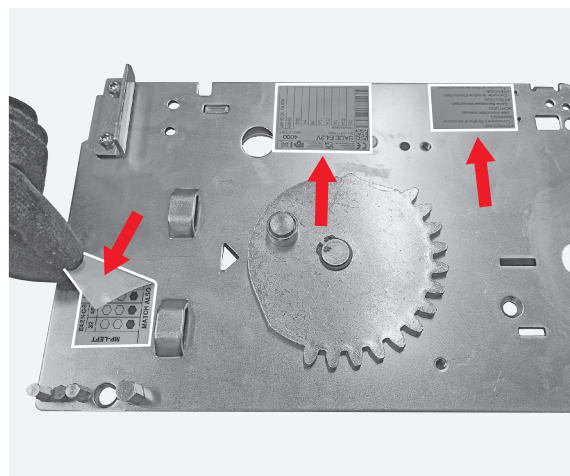


163

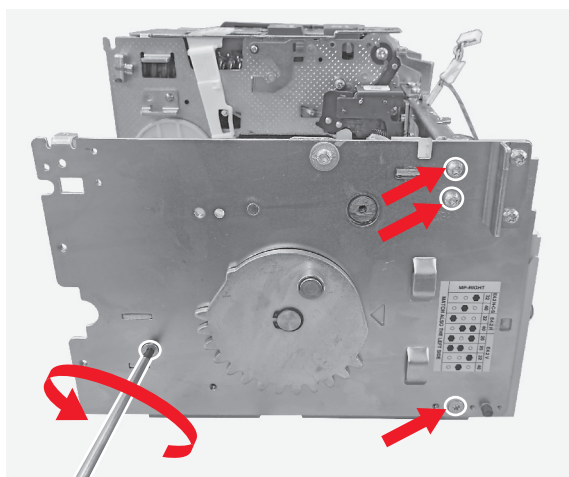
Manually remove the left shoulder from the circuit breaker main structure.

**164**

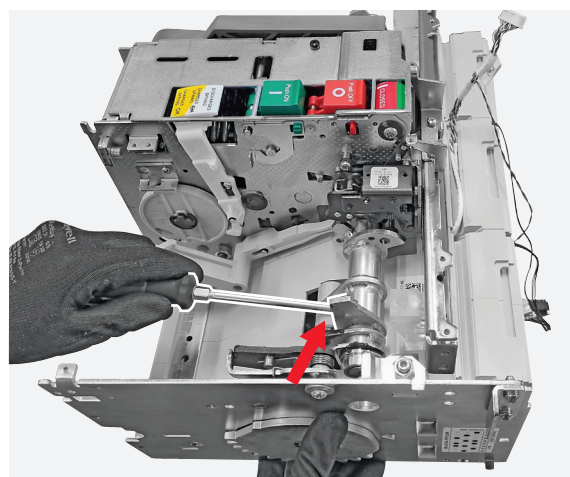
By means of the cutter start removing the 3 labels located on the left shoulder and manually complete the operation.

**165**

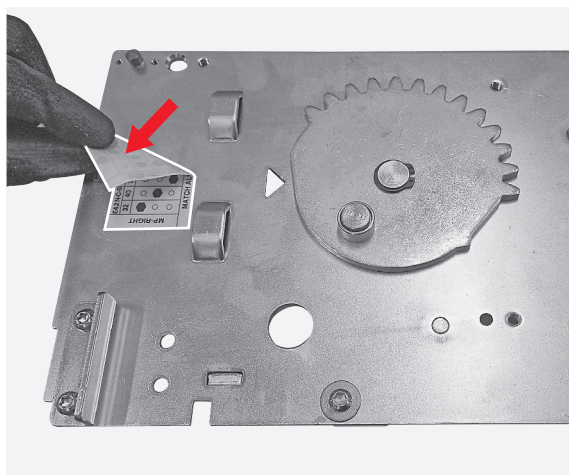
By means of the torx key unscrew the 4 screws fixing the right shoulder to the circuit breaker main structure.

**166**

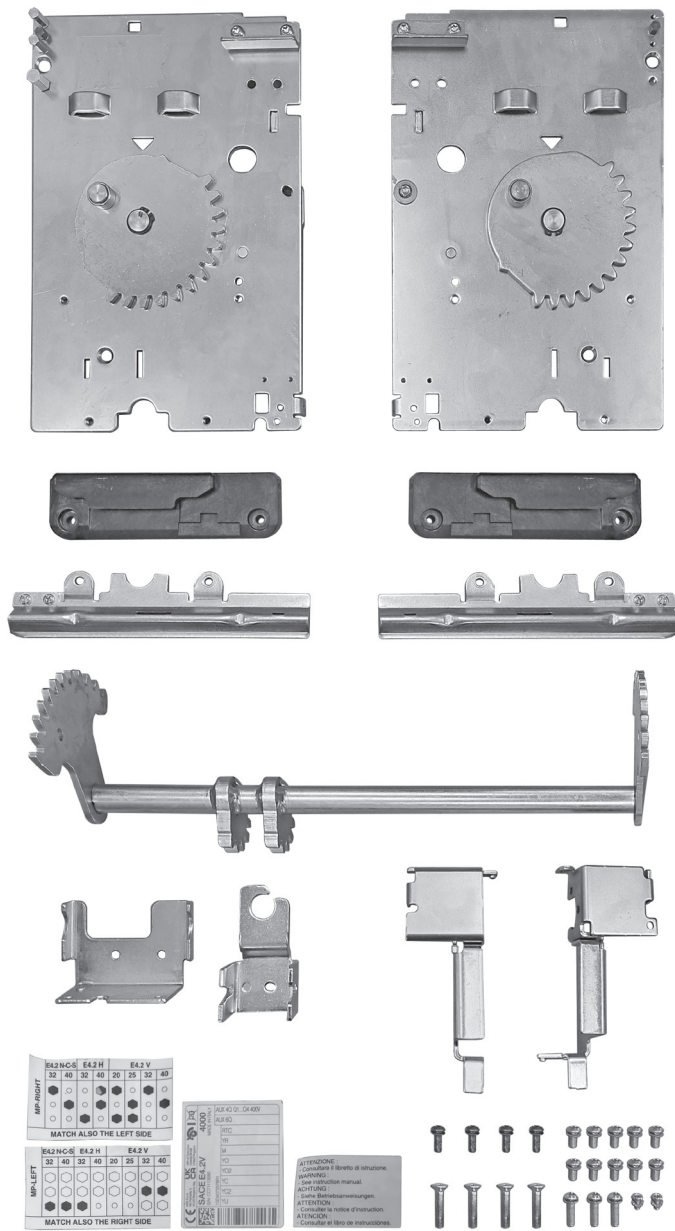
Insert the flat screwdriver as indicated in the picture and slightly push it down and after manually remove the right shoulder.

**167**

By means of the cutter start removing the label located on the right shoulder and manually complete the operation.



Disassembled parts

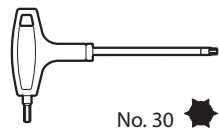


- 2 + 2 + 2 + 2 + 3 + 2 + 2 + 4 + 4 screws (Metal)
- 2 docking supports (Plastic)
- 2 supports (Metal)
- 1 assembly shaft (Metal)
- 1 motor fixing plate (Metal)
- 1 support (Metal)
- 2 spacers (Metal)
- 2 shoulders (Metal)
- 3 + 1 labels (Adhesive paper)

6.9 PHASE 9 – OPERATING MECHANISM

Tools

Torx key



Cross screwdriver



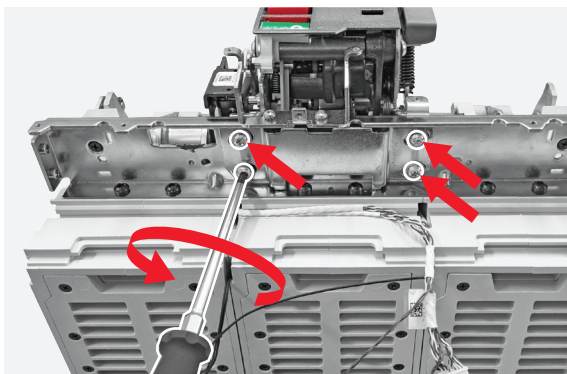
Flat screwdriver



Actions to be performed

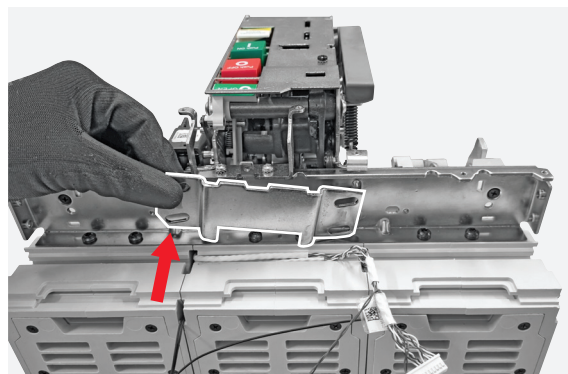
168

By means of the torx key unscrew the 4 screws fixing the setting plate to the upper cross beam.



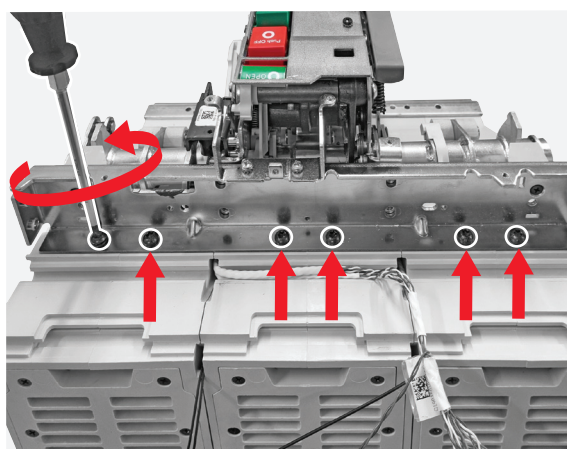
169

Manually remove the setting plate.



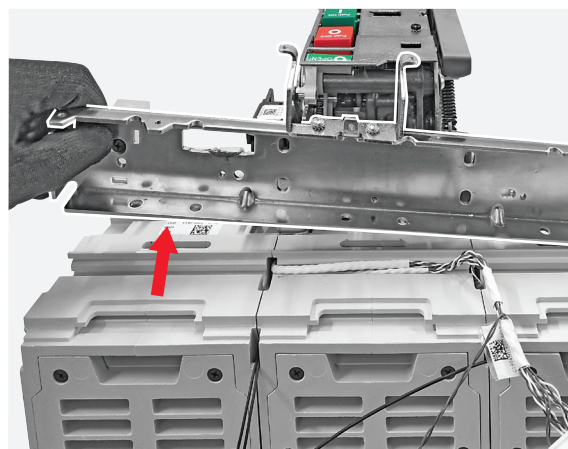
170

By means of the torx key unscrew the 6 screws fixing the upper cross beam to the circuit breaker main structure.



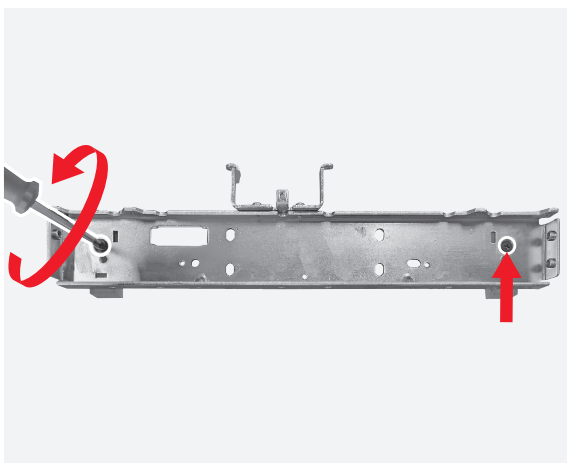
171

Manually remove the upper cross beam.



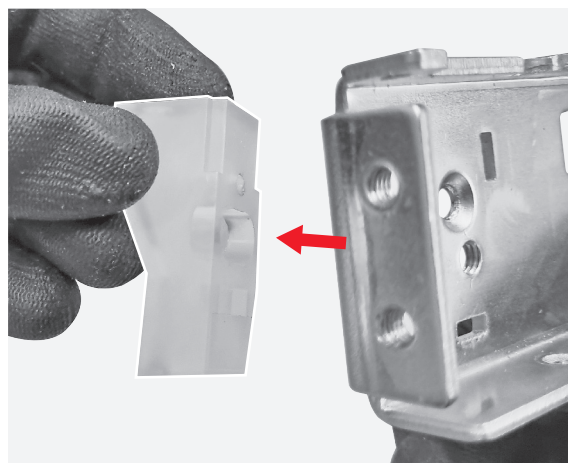
172

By means of the cross screwdriver unscrew the 1 + 1 screws fixing the 2 blocks to the upper cross beam.



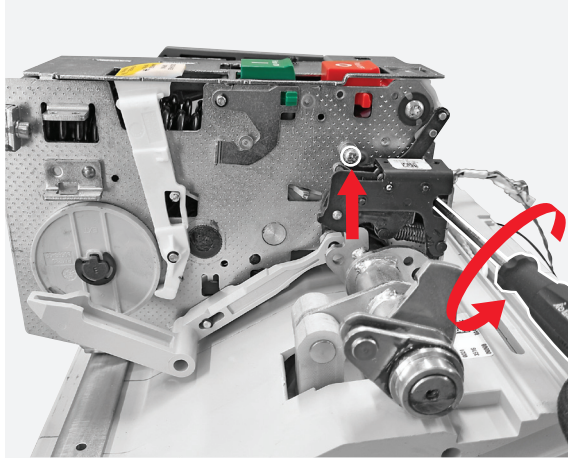
173

Manually remove the 2 blocks.

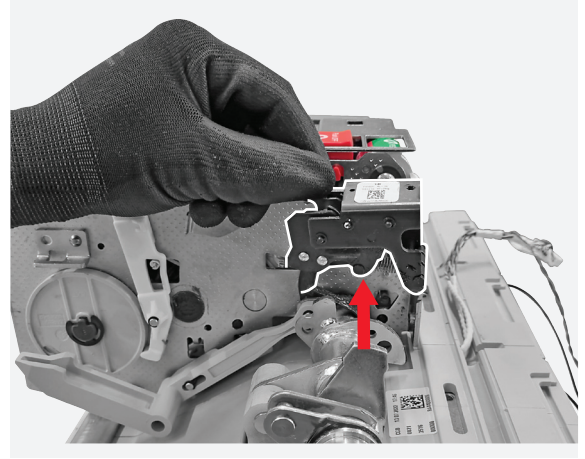


174

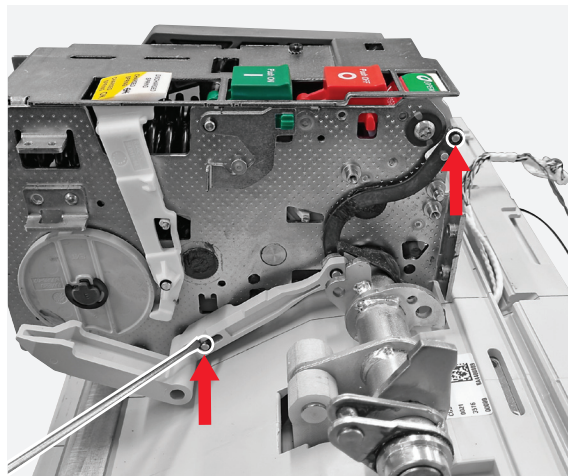
By means of the cross screwdriver unscrew the 2 screws fixing the mechanical release to the circuit breaker main structure.

**175**

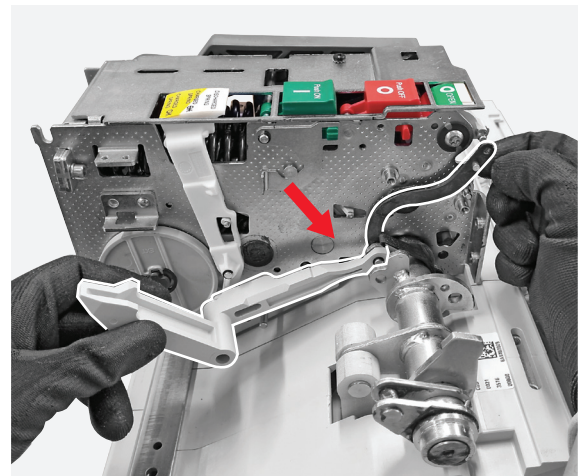
Manually remove the mechanical release.

**176**

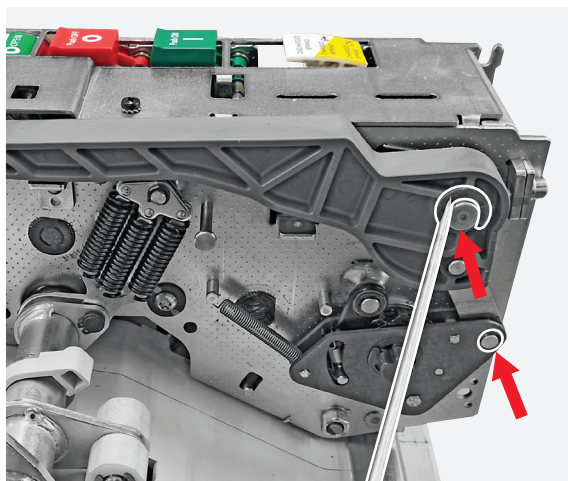
By means of the flat screwdriver remove the 2 benzings fixing the 2 levers to the operating mechanism.

**177**

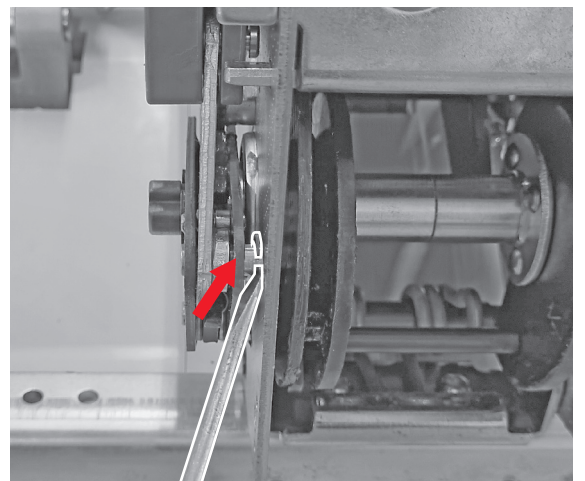
Unhook the 2 levers from the operating mechanism.

**178**

By means of the flat screwdriver remove the 2 benzings.

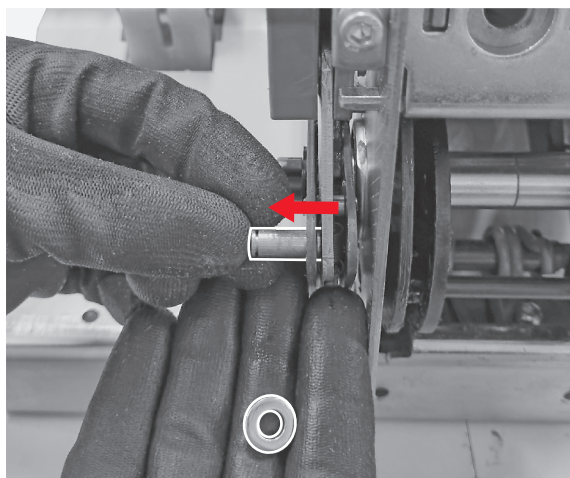
**179**

By means of the flat screwdriver remove the benzing.

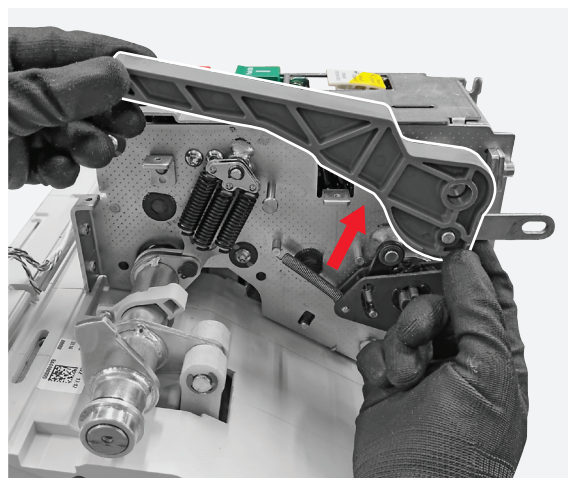


180

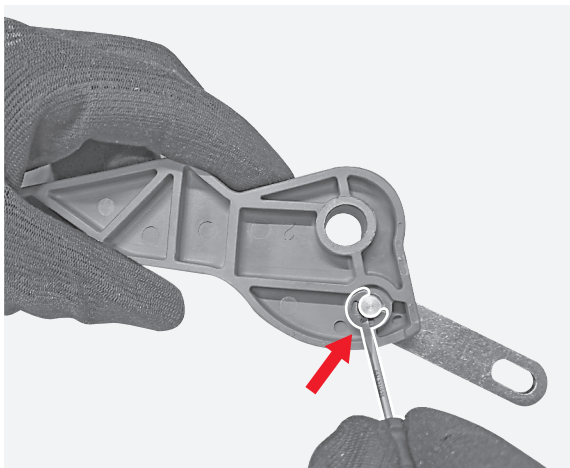
Manually remove the pin and the nut.

**181**

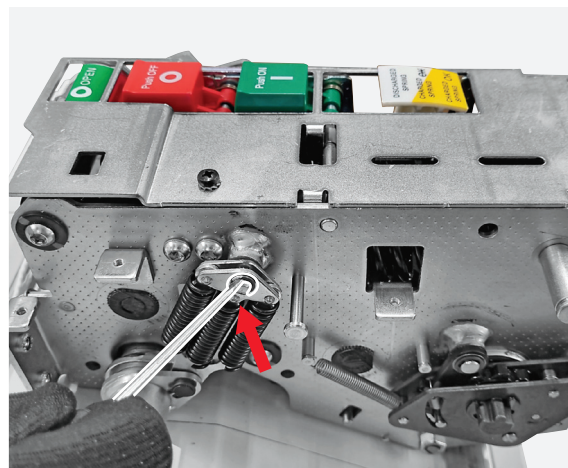
Manually remove the springs charging lever from the circuit breaker main structure and the spring behind the springs charging lever.

**182**

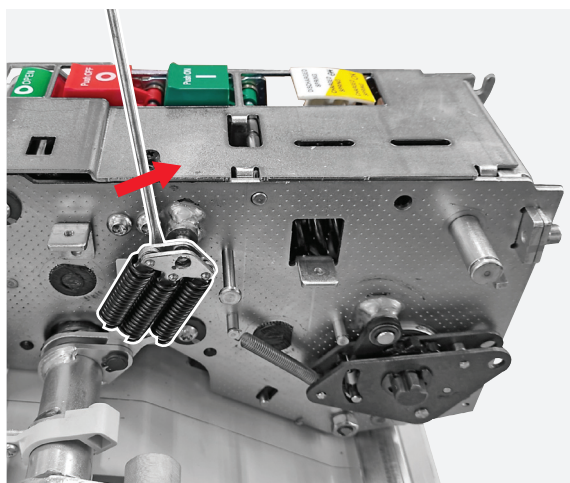
By means of the flat screwdriver remove the benzing and let the pin and the lever separate by gravity.

**183**

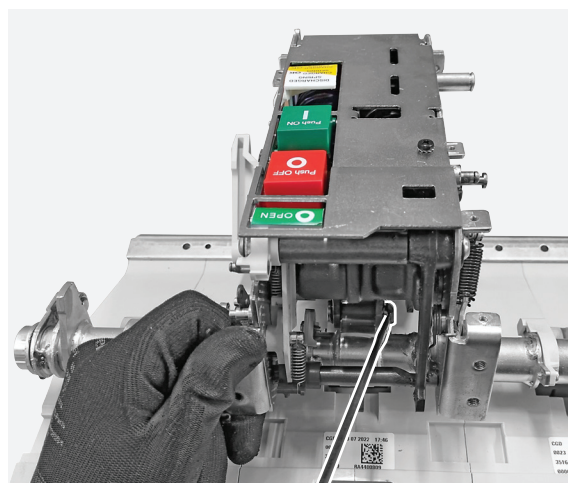
By means of the flat screwdriver remove the benzing.

**184**

Slightly push the flat screwdriver as indicated by the arrow and after unhook the opening springs group.

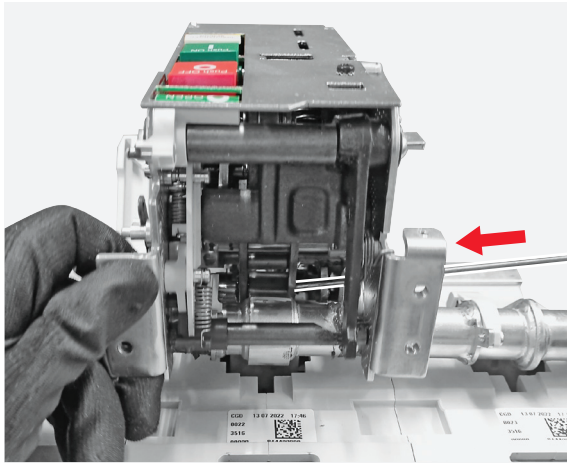
**185**

Lift the operating mechanism and by means of the flat screwdriver unhook and remove the lever.

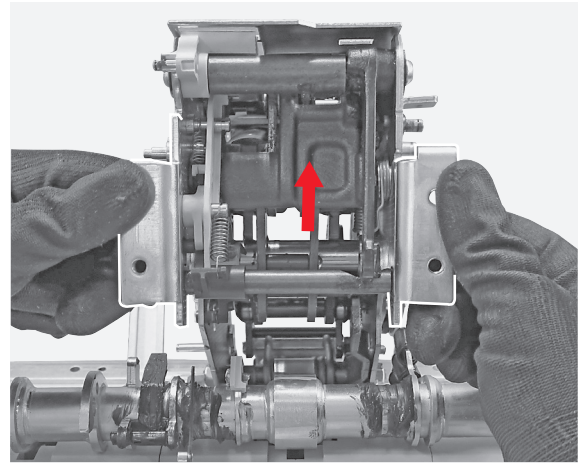


186

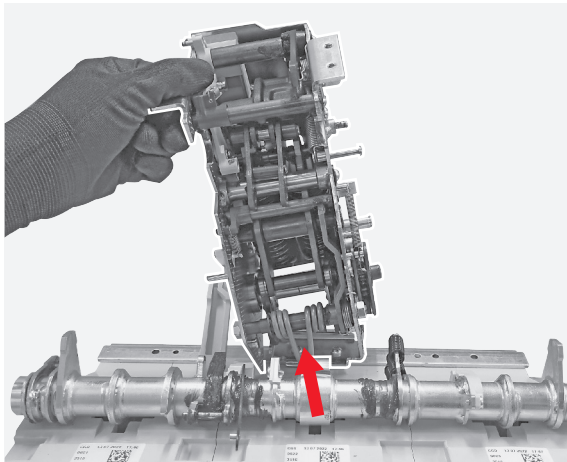
By means of the flat screwdriver push as indicated by the arrow the pin and remove the pin.

**187**

Pull the operating mechanism towards the upper part of the circuit breaker main structure.

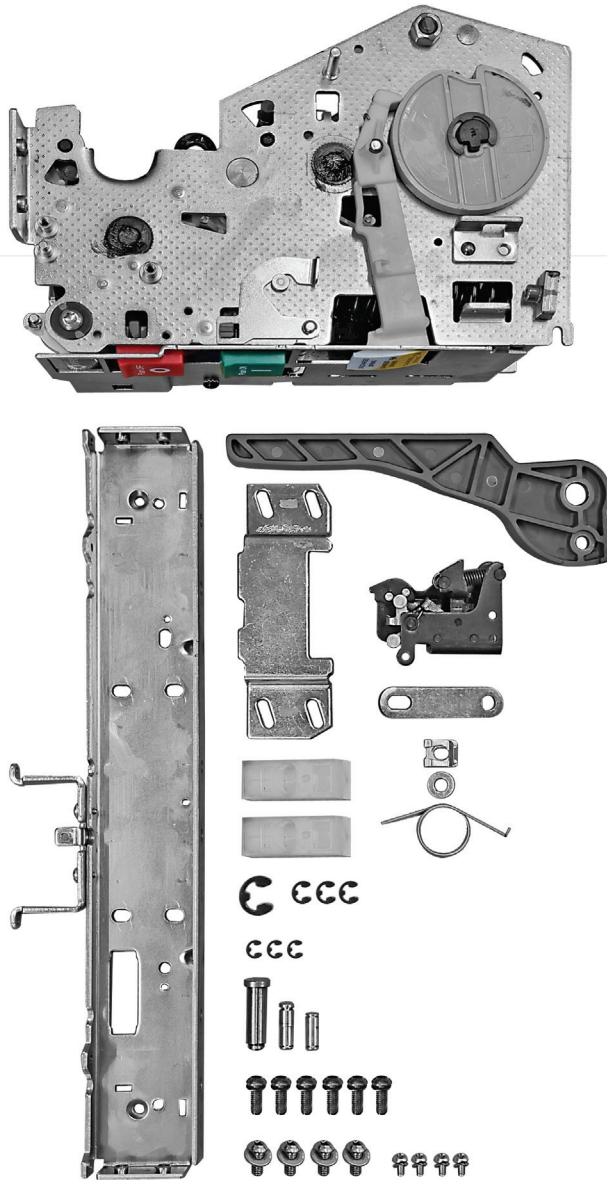
**188**

Manually remove the operating mechanism.



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.

Disassembled parts



- 4 + 6 + 2 + 2 screws (Metal)
- 1 setting plate (Metal)
- 1 upper cross beam (Metal)
- 2 blocks (Rubber)
- 1 mechanical release (Metal)
- 2 + 1 + 1 + 1 + 1 + 1 + 1 benzings (Metal)
- 1 + 1 + 1 pins (Metal)
- 1 nut (Metal)
- 1 + 1 levers (Metal)
- 1 spring (Metal)
- 1 springs charging lever (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 operating mechanism (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)

6.10 PHASE 10 – OPERATING SHAFT ASSEMBLY**Tools**

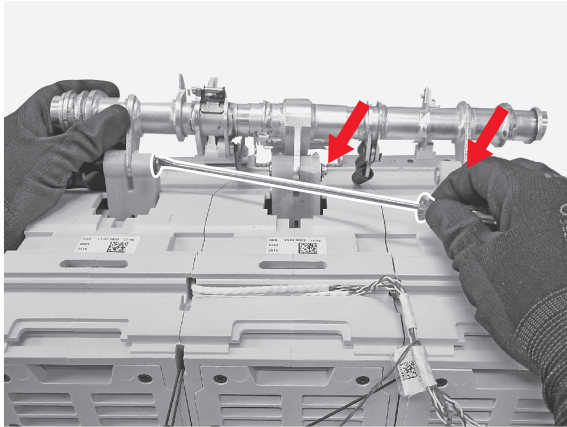
Cross screwdriver



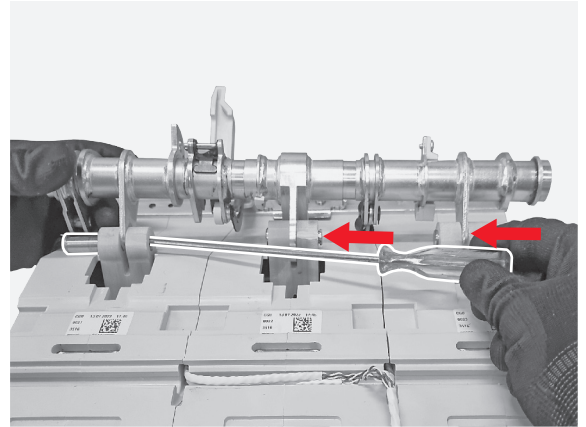
Flat screwdriver (x2)

**Actions to be performed****189**

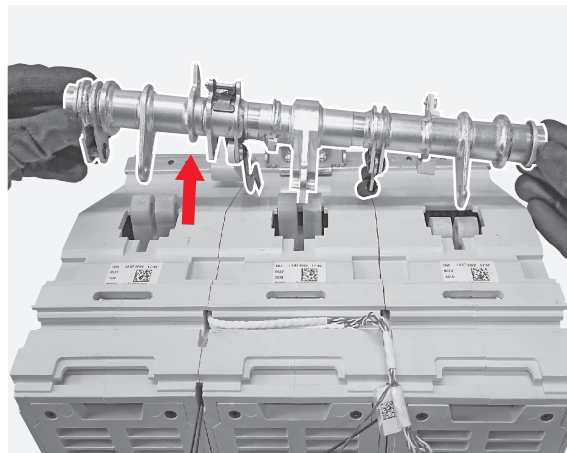
Manually lift the operating shaft assembly and by means of the flat screwdriver remove the 3 benzings.

**190**

Manually lift the operating shaft assembly and by means of the flat screwdriver remove the 3 pins.

**191**

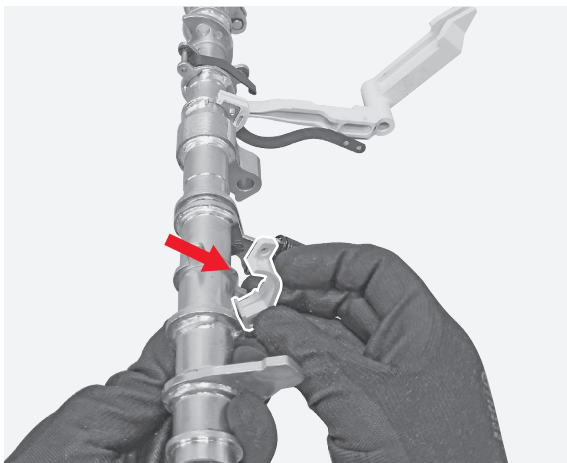
Manually remove the operating shaft assembly.

**192**

By means of the cross screwdriver unscrew the screw fixing the auxiliary contacts cam to the operating shaft assembly.

**193**

Manually remove the auxiliary contacts cam.

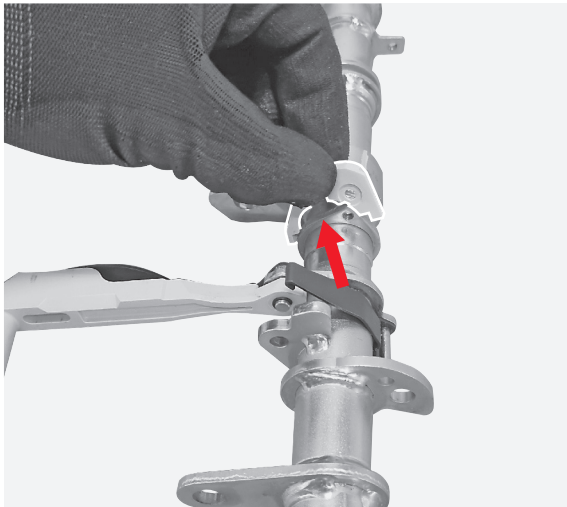
**194**

By means of the cross screwdriver unscrew the screw fixing the cam to the operating shaft assembly.

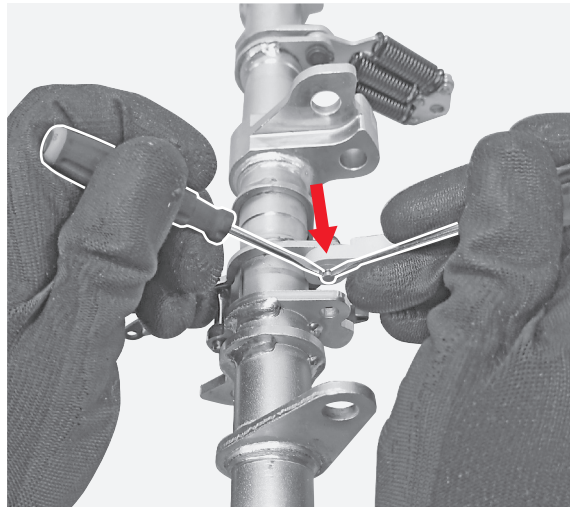


195

Manually remove the cam.

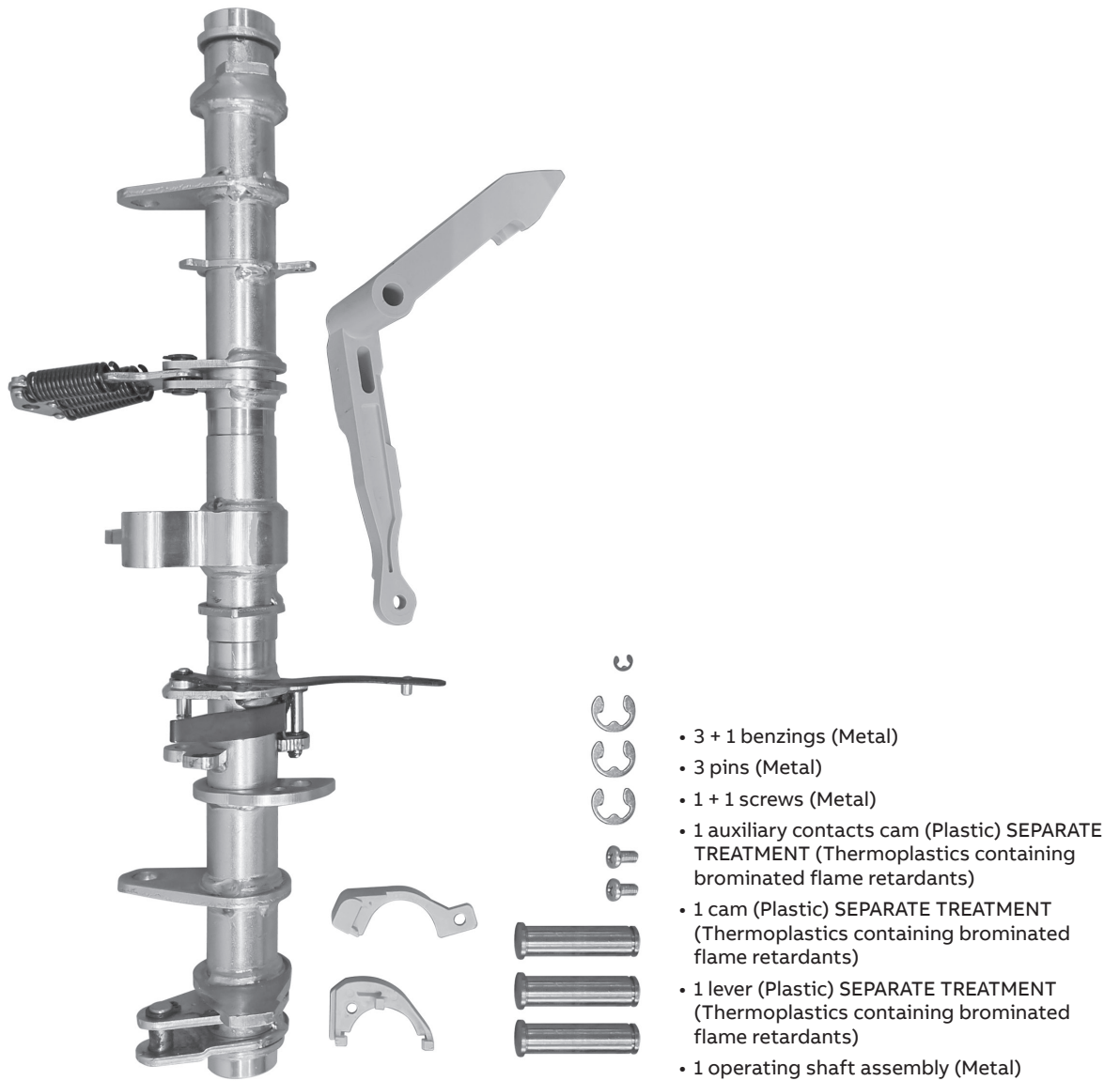
**196**

By means of 2 flat screwdrivers remove the benzing.

**197**

Manually remove the lever.

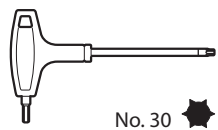


Disassembled parts

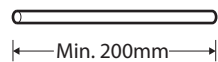
6.11 PHASE 11 – POLES SEPARATION

Tools

Torx key



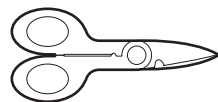
Rod



Flat screwdriver



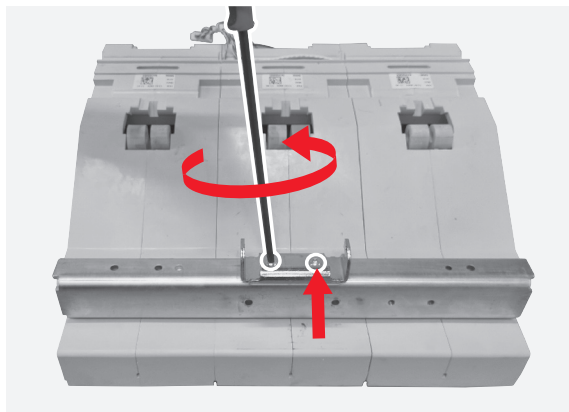
Scissors



Actions to be performed

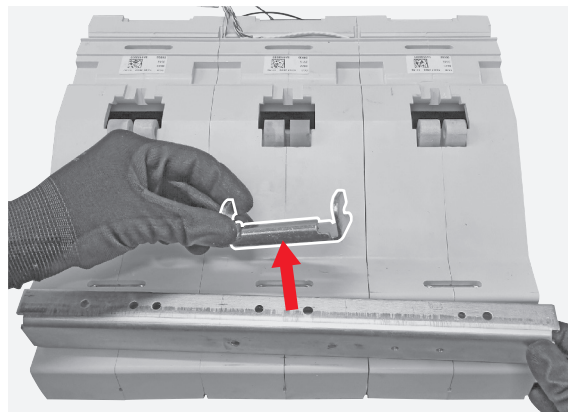
198

By means of the torx key unscrew the 2 screws fixing the operating mechanism fixing plate and the lower cross beam to the poles.



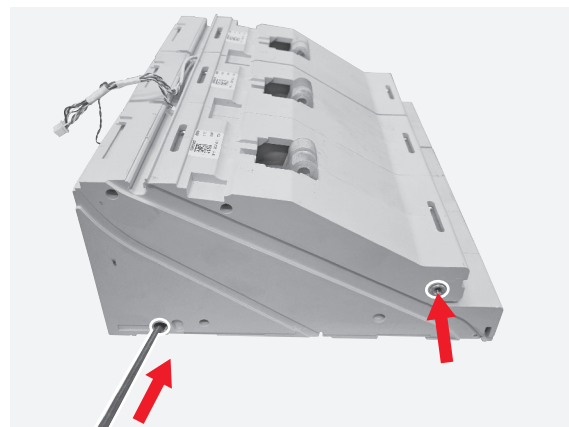
199

Manually remove the operating mechanism fixing plate and the lower cross beam.



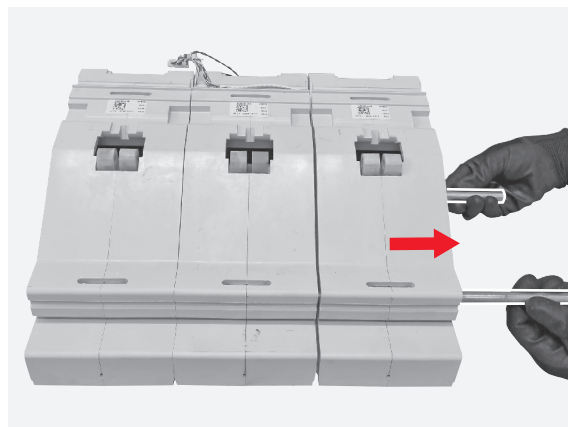
200

By means of the rod push as indicated by the arrow the 2 tie rods.



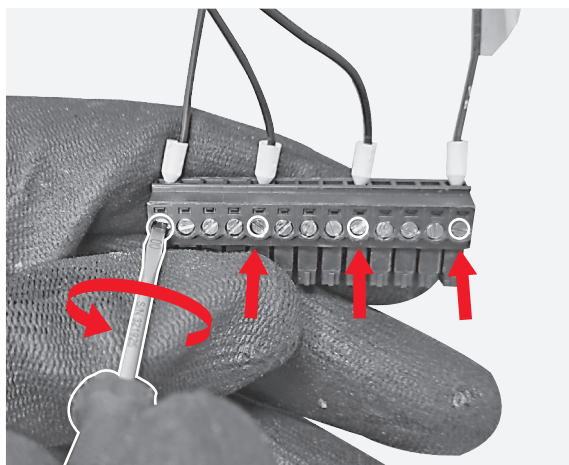
201

Manually pull the 2 tie rods in order to complete the removal.



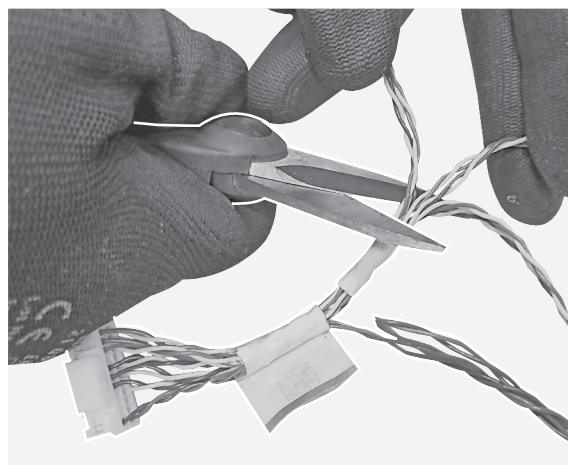
202

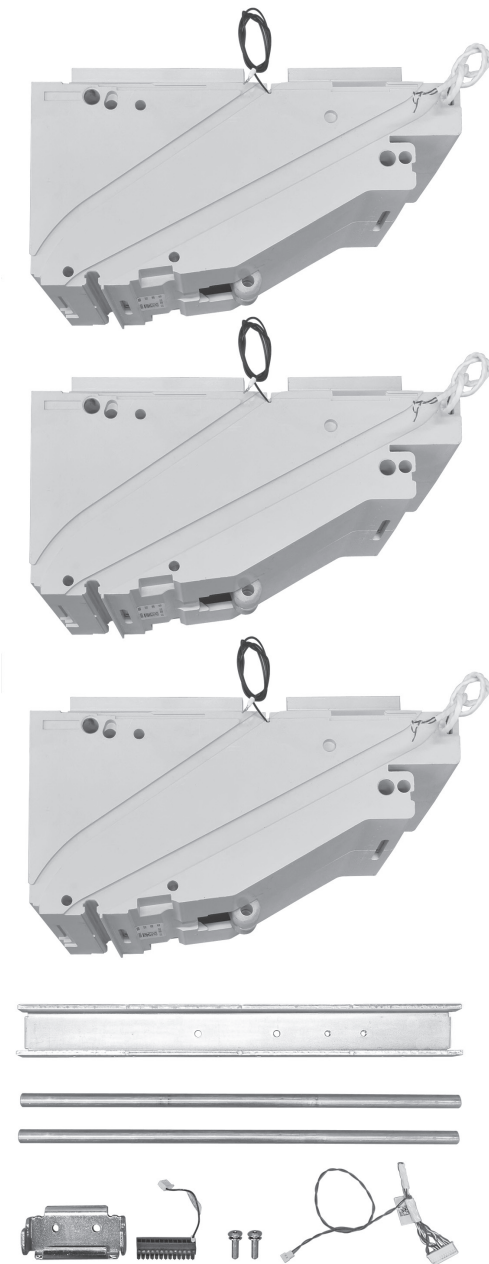
By means of the flat screwdriver unscrew the screws fixing the 3 wires connecting the measuring module connector to the sensors mounted inside the poles.



203

By means of the scissors cut the cables coming out from the poles and after separate the 3 poles.



Disassembled parts

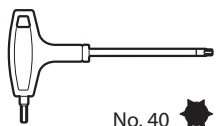
- 3 screws (Metal)
- 1 operating mechanism fixing plate (metal)
- 1 lower cross beam
- 2 tie rods (Metal)
- 1 measuring module connector (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 1 cables set (Plastic and Metal)
- 3 poles (Plastic and Metal) *

*Poles will be furtherly disassembled (see Phases 6.12, 6.13 and 6.14)

6.12 PHASE 12 – TERMINALS AND CLAW CONTACTS

Tools

Torx key



No. 40 

Actions to be performed

204

By means of the torx key (size 40) unscrew the 6 screws fixing the terminals and their protections to the pole.



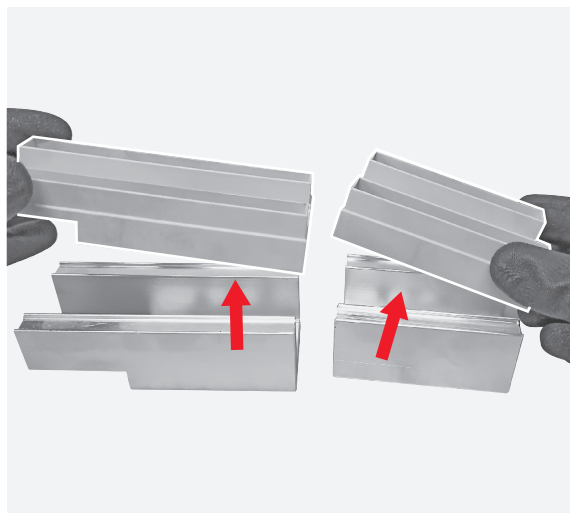
205

Manually remove the terminals and their protections.



206

Manually separate the terminals and their protections.



Disassembly operations illustrated at pictures 204, 205 and 206 must be performed on the other 2 poles.

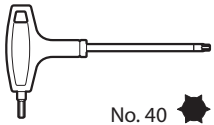
Disassembled parts

- 18 screws (Metal)
- 6 terminals (Metal)
- 6 protections (Plastic) SEPARATE TREATMENT
(Thermoplastics containing brominated flame retardants)

Circuit breakers in IEC version characterized by a current rating up to 3200A show differences at level of parts involved in this disassembly phase, consequently here below an analogous section is provided for these circuit breakers.

Tools

Torx key

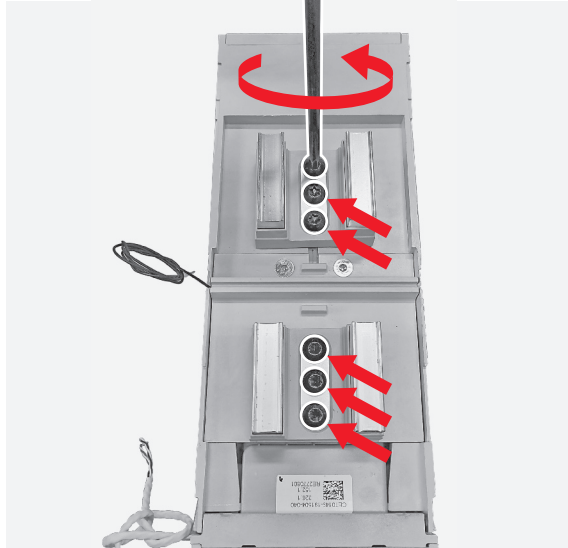


No. 40

IEC version - Current rating up to 3200A

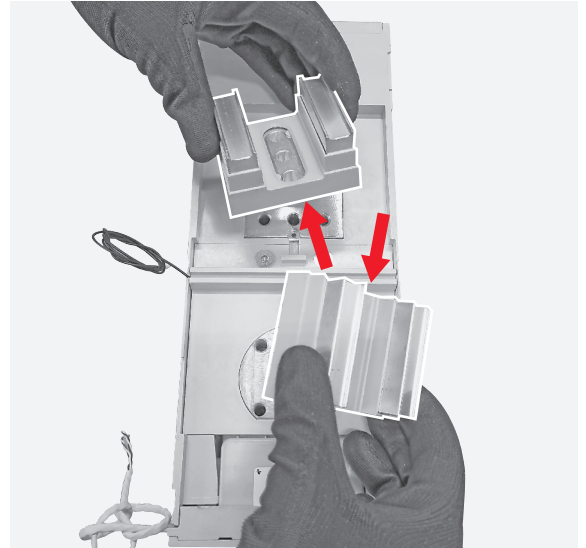
207

By means of the torx key (size 40) unscrew the 6 screws fixing the terminals and their protections to the pole.



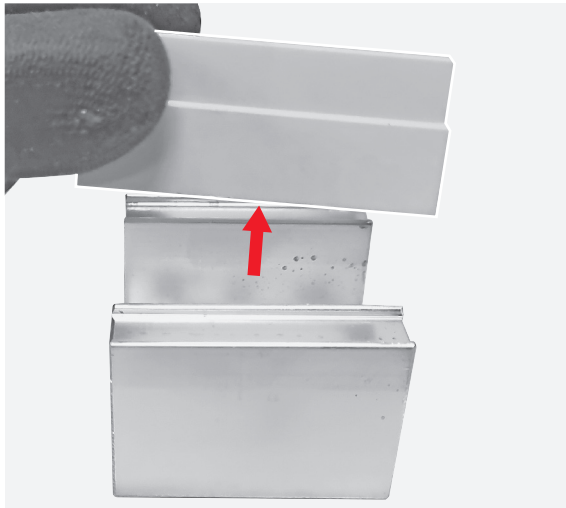
208

Manually remove the terminals and their protections.

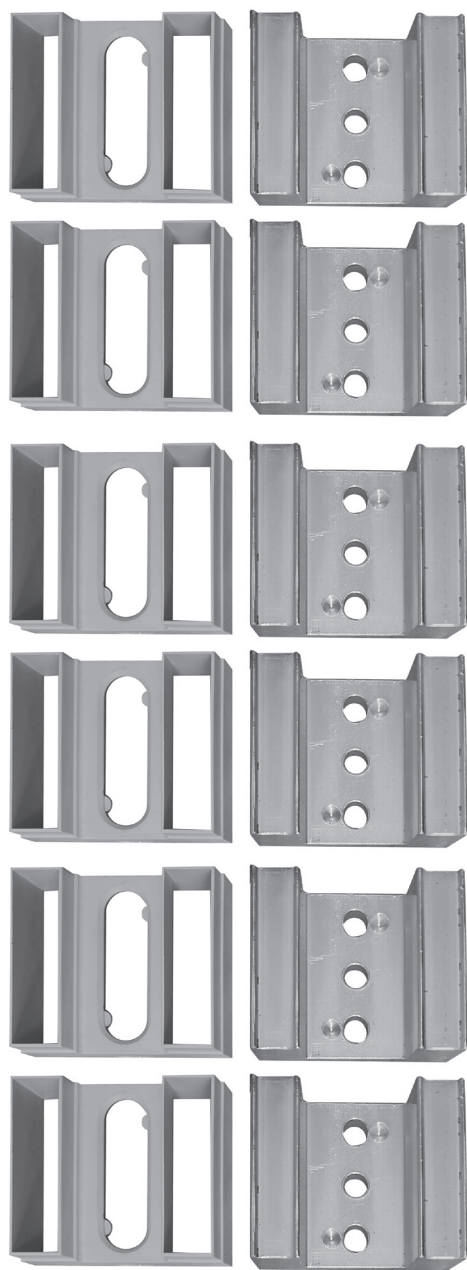


209

Manually separate the terminals and their protections.



Disassembly operations illustrated at pictures 207, 208 and 209 must be performed on the other 2 poles.

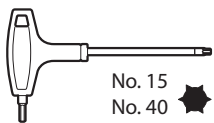
Disassembled parts

- 18 screws (Metal)
- 6 terminals (Metal)
- 6 protections (Plastic) SEPARATE TREATMENT
(Thermoplastics containing brominated flame retardants)

Circuit breakers in UL version characterized by a current rating of 3200A show differences at level of parts involved in this disassembly phase, consequently here below an analogous section is provided for these circuit breakers.

Tools

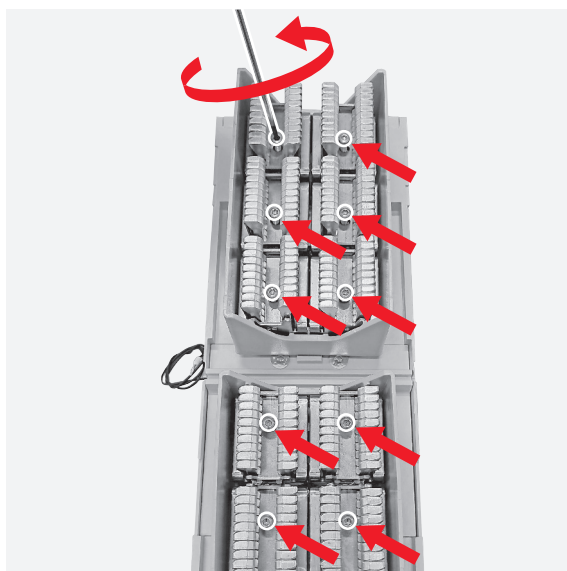
Torx key



UL version - Current rating 3200A

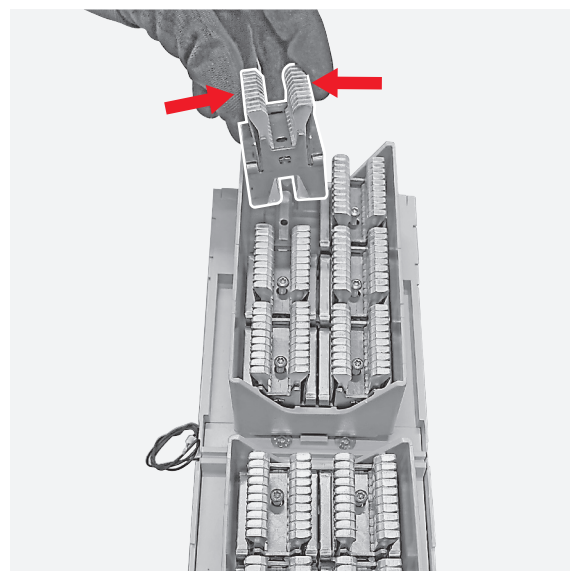
210

By means of the torx key (size 15) unscrew the 10 screws fixing the claw contacts to the pole.



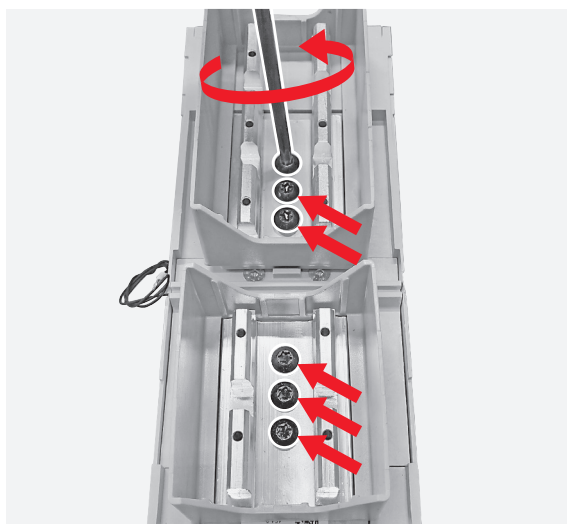
211

Push the claw contacts as indicated by the arrows and after manually remove the claw contacts.



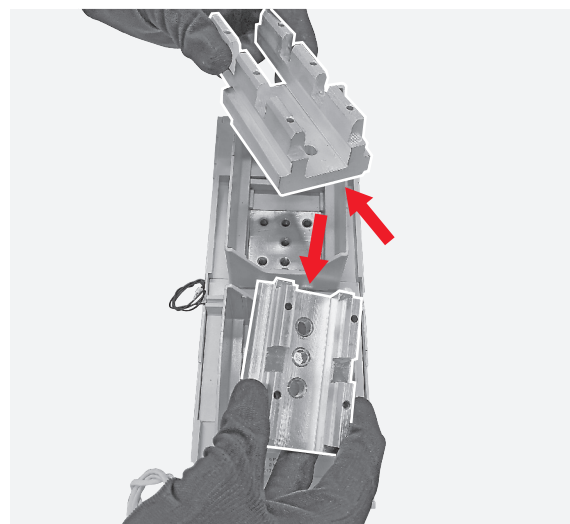
212

By means of the torx key (size 40) unscrew the 6 screws fixing the terminals and their protections to the pole.



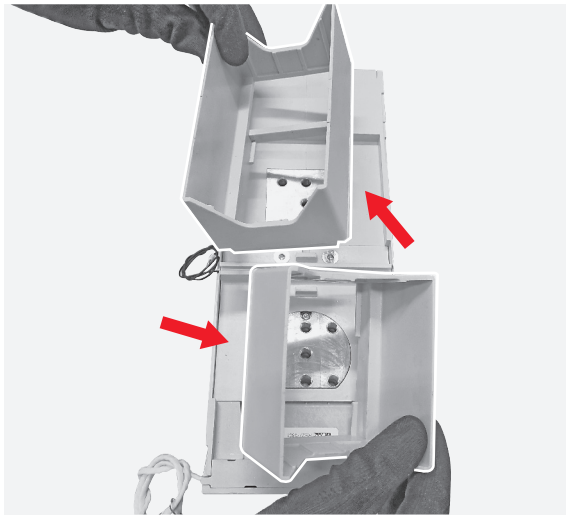
213

Manually remove the terminals from the pole.

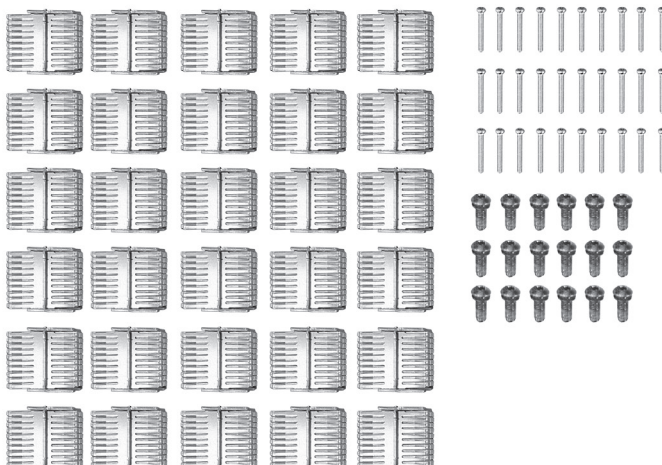
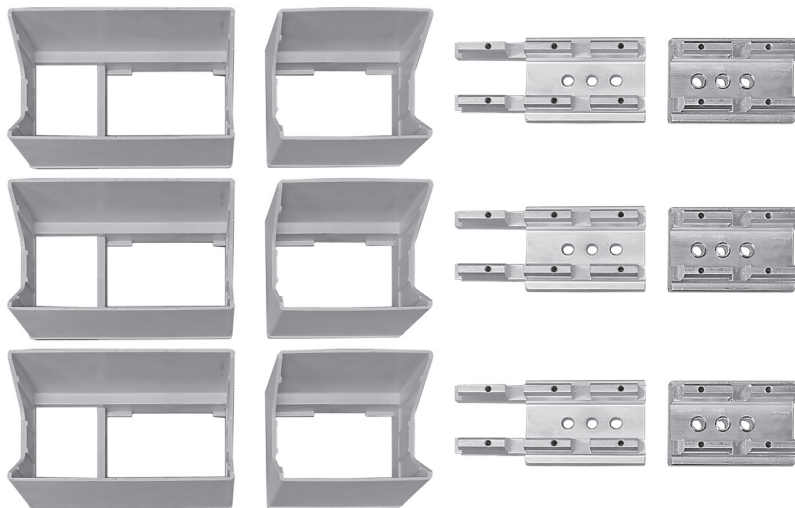


214

Manually remove the protections from the pole.



Disassembly operations illustrated at pictures 210, ... , 214 must be performed on the other 2 poles.

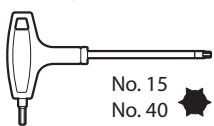
Disassembled parts

- 30 + 18 screws (Metal)
- 30 claw contacts (Metal)
- 6 terminals (Metal)
- 6 protections (Plastic) SEPARATE TREATMENT
(Thermoplastics containing brominated flame retardants)

Circuit breakers in UL version characterized by a current rating up to 2500A show differences at level of parts involved in this disassembly phase, consequently here below an analogous section is provided for these circuit breakers.

Tools

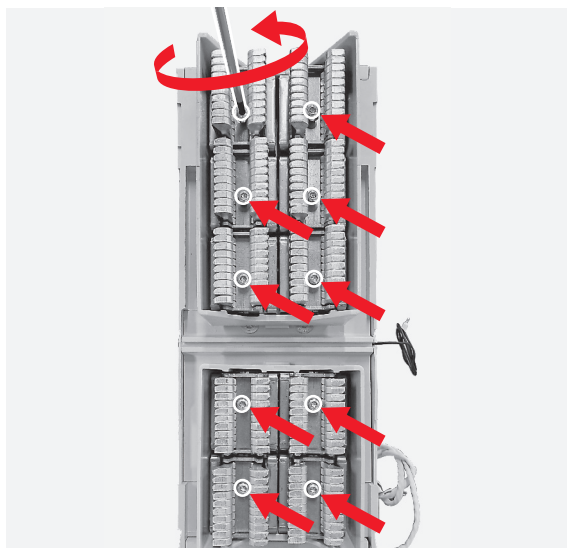
Torx key



UL version - Current rating up to 2500A

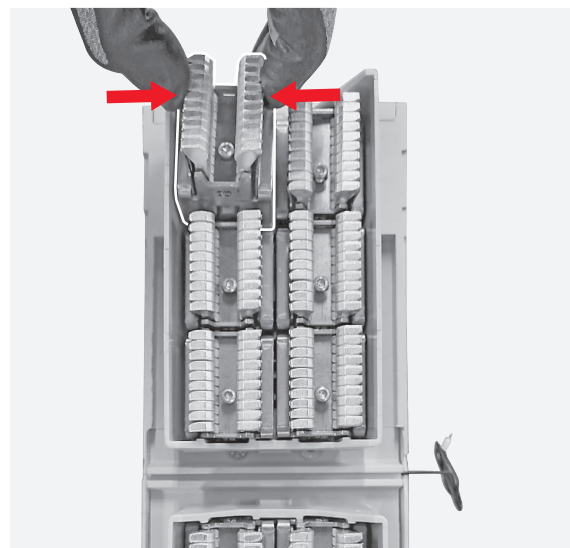
215

By means of the torx key (size 15) unscrew the 10 screws fixing the claw contacts to the pole.



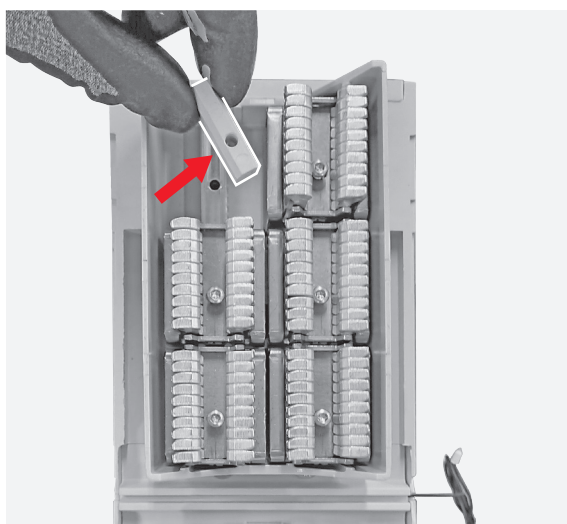
216

Push the claw contacts as indicated by the arrows and after manually remove the claw contacts.



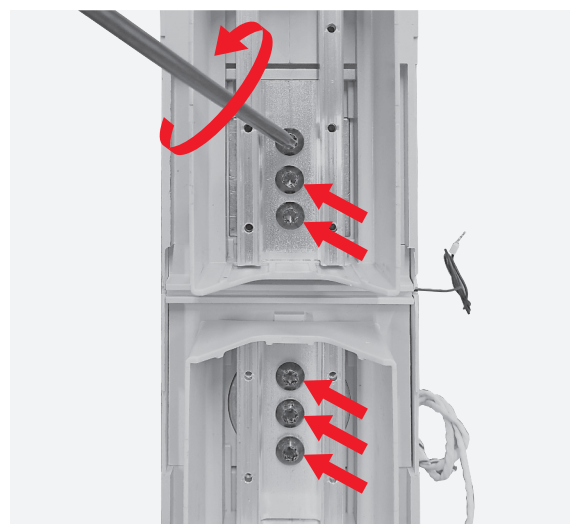
217

Manually remove the spacers located below the claw contacts.



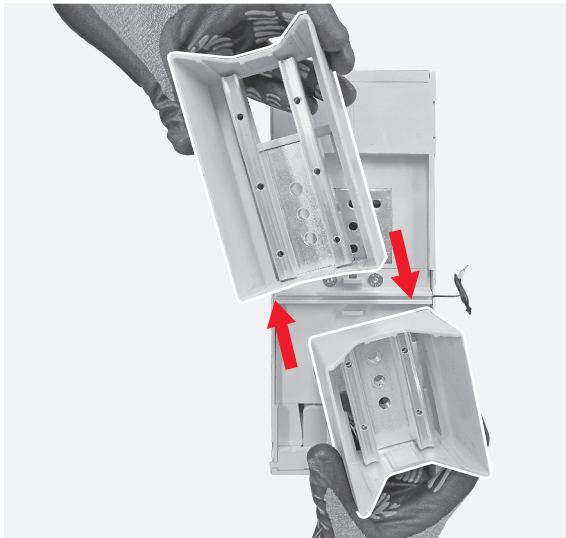
218

By means of the torx key (size 40) unscrew the 6 screws fixing the terminals and their protections to the pole.

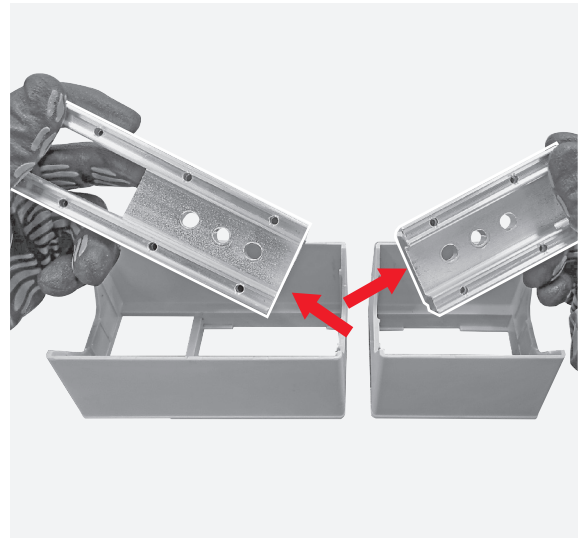


219

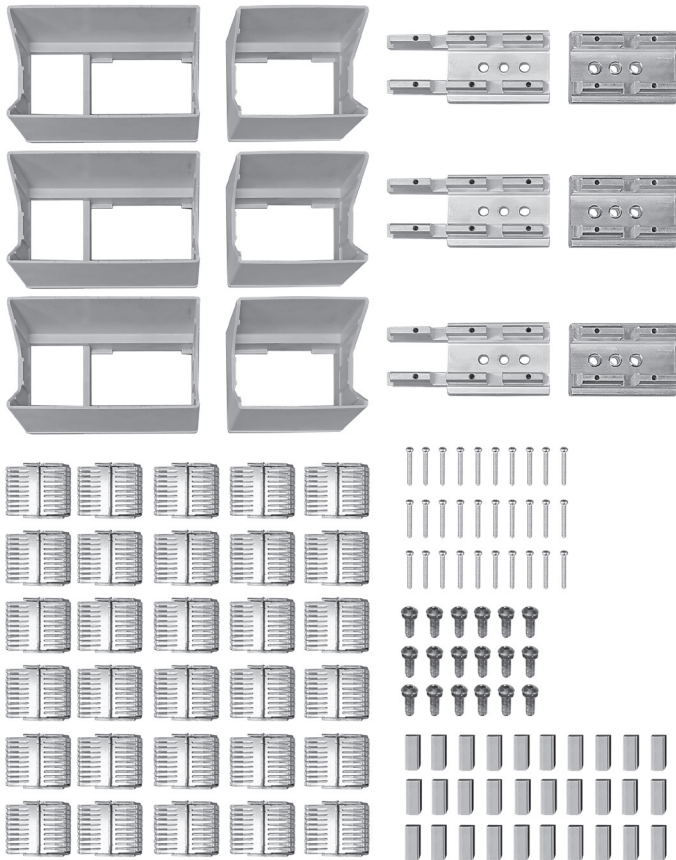
Manually remove the terminals and their protections.

**220**

Manually separate the terminals and their protections.



Disassembly operations illustrated at pictures 215, ... , 220 must be performed on the other 2 poles.

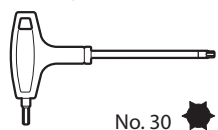
Disassembled parts

- 30 + 18 screws (Metal)
- 30 claw contacts (Metal)
- 30 spacers (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 6 terminals (Metal)
- 6 protections (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)

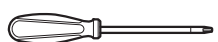
6.13 PHASE 13 – ARCHING CHAMBERS

Tools

Torx key



Cross screwdriver



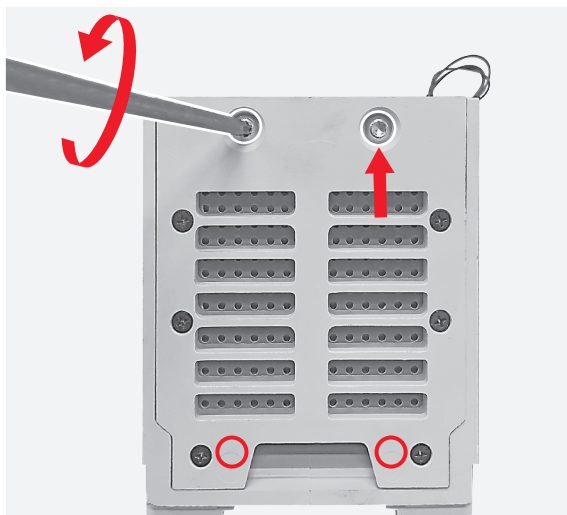
Flat screwdriver



Actions to be performed

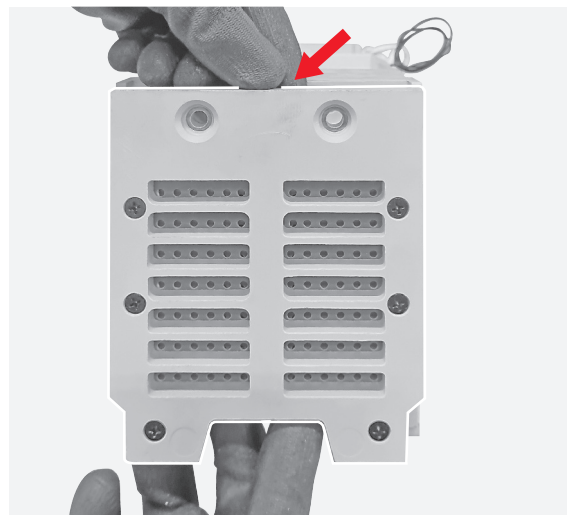
221

By means of the torx key unscrew the 2 screws fixing the arching chamber to the pole. *



222

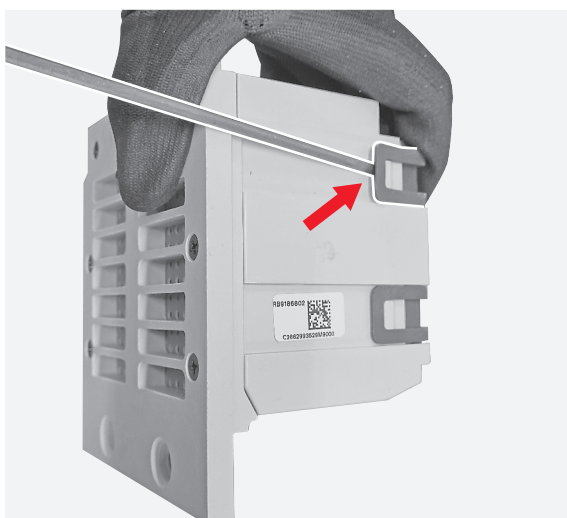
Manually remove the arching chamber.



* 2 additional screws must be unscrewed on circuit breakers with V breaking capacity (red circles indicate position of the 2 additional screws)

223

By means of the flat screwdriver unhook the 2 appendices fixing the arc quenching and the plate to the arching chamber main structure.



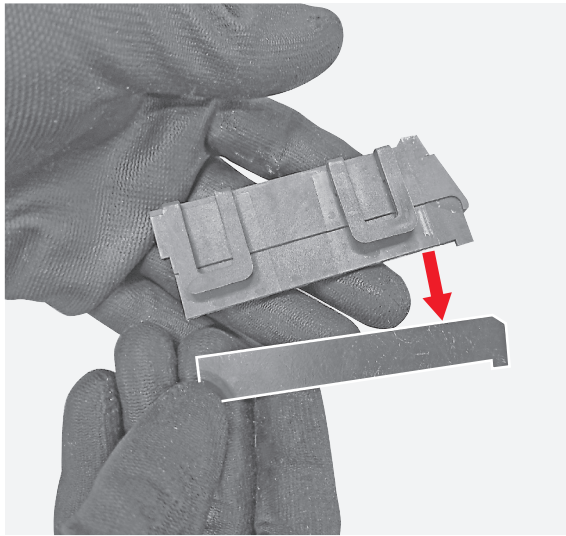
224

Manually remove the arc quenching and the plate from the arching chamber main structure; operation to be repeated on the other side of the arching chamber main structure.

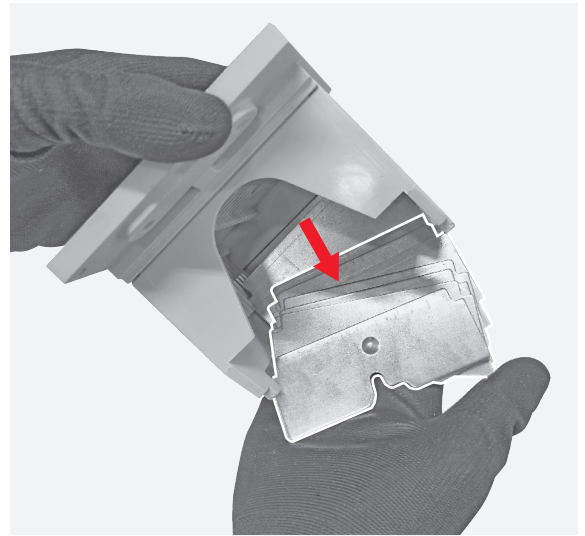


225

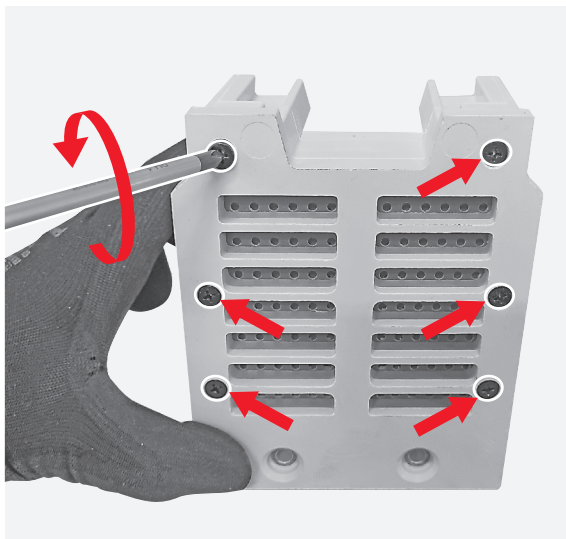
Manually separate the arc quenching and the plate.

**226**

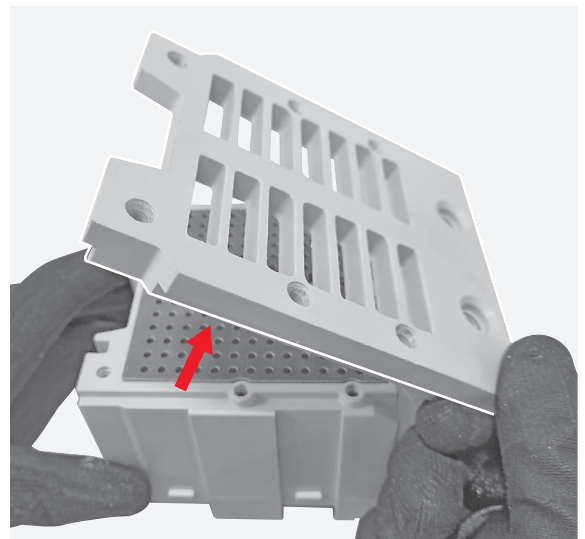
By gravity let the plates come out from the arching chamber main structure.

**227**

By means of the cross screwdriver unscrew the 6 screws fixing the arching chamber cover to the arching chamber main structure.

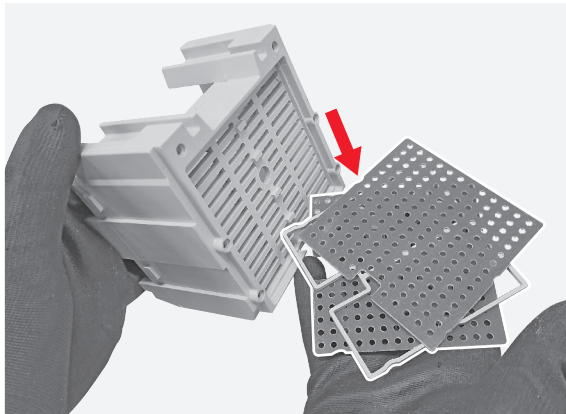
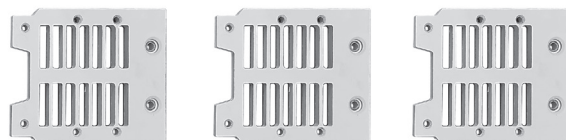
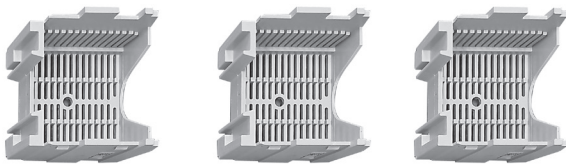
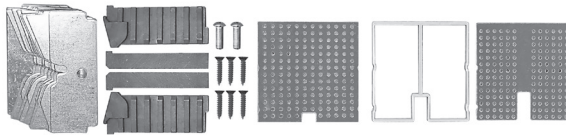
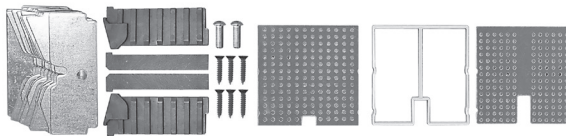
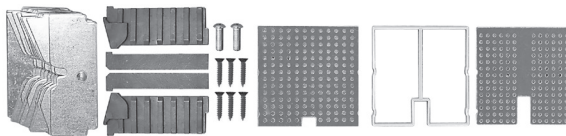
**228**

Manually remove the arching chamber cover.



229

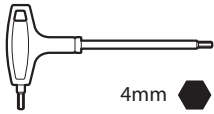
By gravity let the 2 filters and the spacer separate from the arching chamber shell.

**Disassembled parts**

- 6 + 18 screws (Metal)
- 6 arc quenchings (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 6 plates (GP0-3)
- 48 plates (Metal)
- 3 arching chambers covers (Plastic)
- 3 + 3 filters (GP0-3)
- 3 spacers (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 3 arching chambers shells (Plastic)

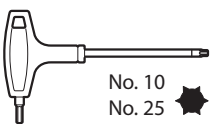
6.14 PHASE 14 – POLES**Tools**

Allen key



4mm

Torx key



No. 10

No. 25

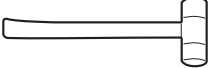
Flat screwdriver



Cross screwdriver



Hammer



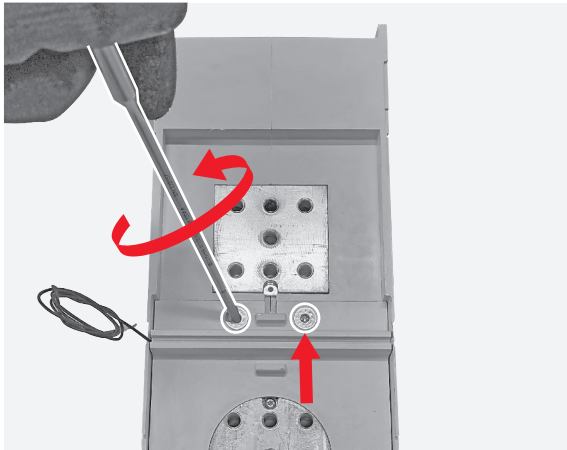
Rod Ø5mm



Min. 200mm

Actions to be performed**230**

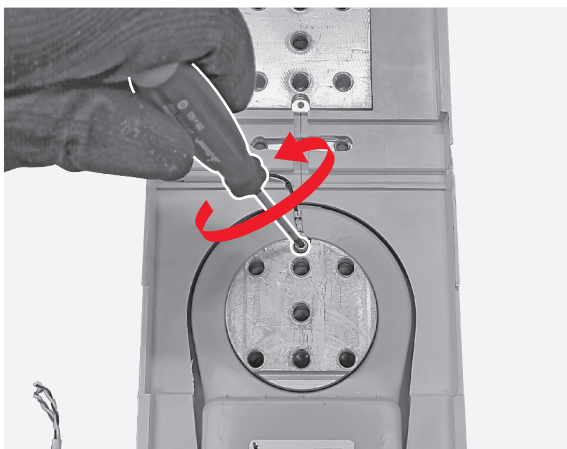
By means of the allen key unscrew the 2 screws fixing the sensor cover to the pole.

**231**

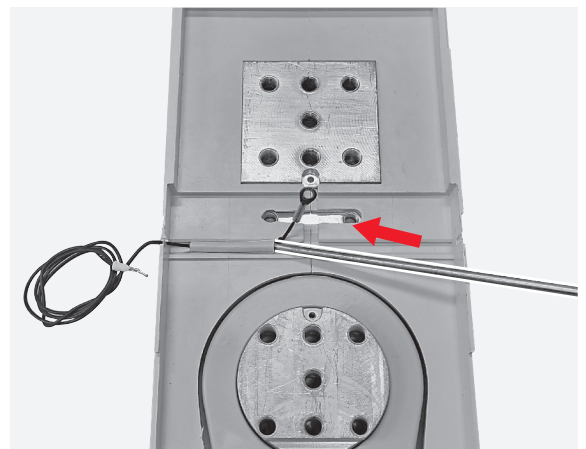
Manually remove the sensor cover.

**232**

By means of the torx key (size 10) unscrew the screw fixing the wire to the pole.

**233**

By means of the flat screwdriver remove the cables cover and after manually remove the wire.

**234**

By means of the flat screwdriver unhook the sensor plug mounted below the sensor and after manually remove the sensor plug.

**235**

Manually remove the sensor.

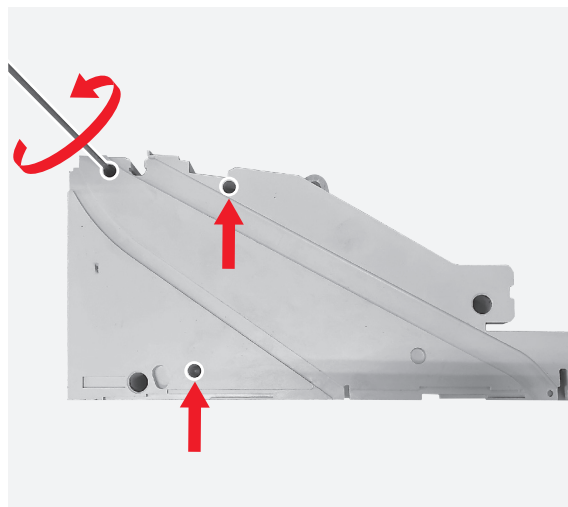


236

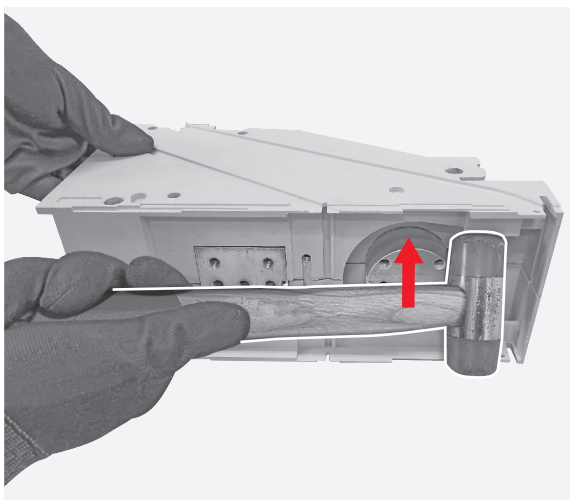
Manually unhook the cable from the sensor.

**237**

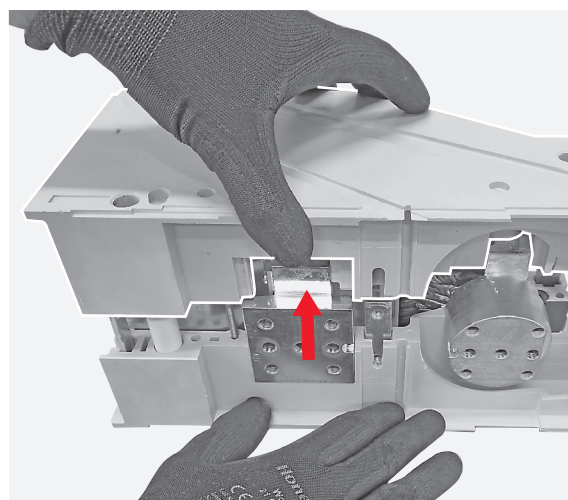
By means of the torx key (size 25) unscrew the 3 screws located in the left side of the pole.

**238**

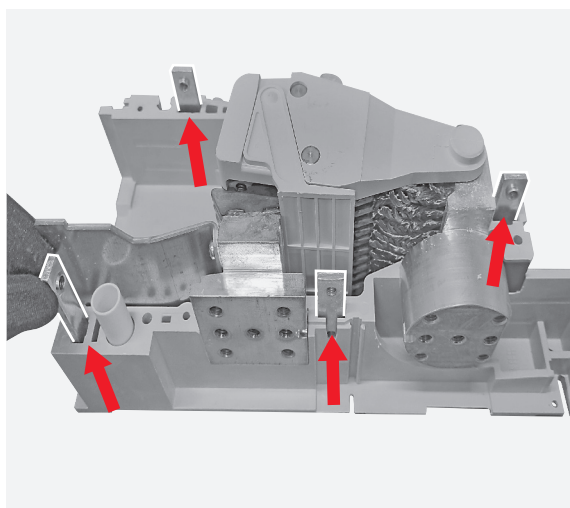
By means of the hammer start separating the pole cases.

**239**

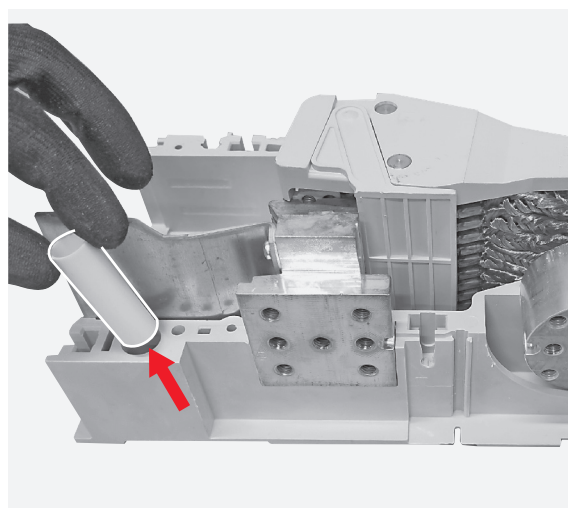
Manually complete the separation operation.

**240**

Manually remove the 4 plates.

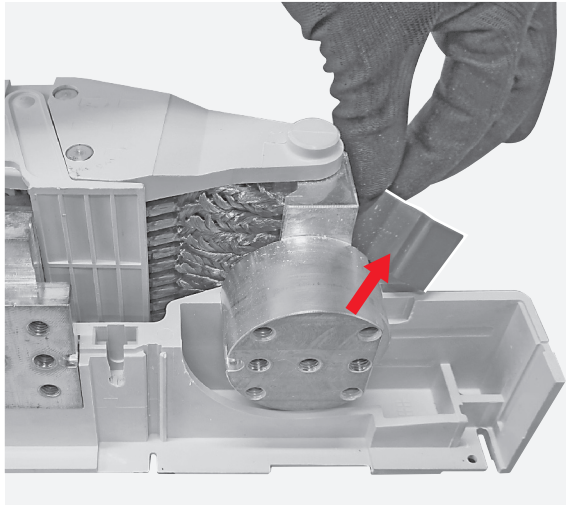
**241**

Manually remove the bush.

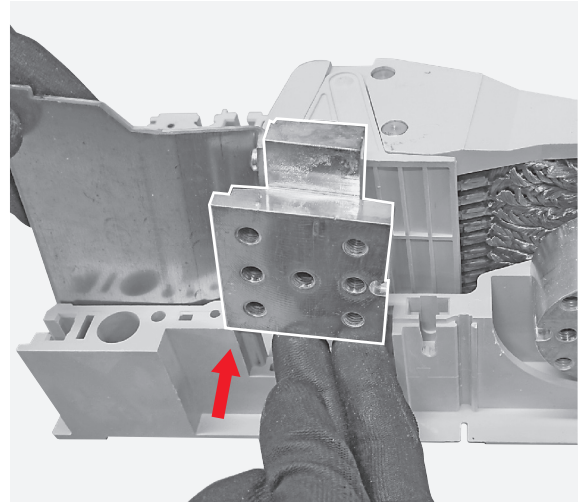


242

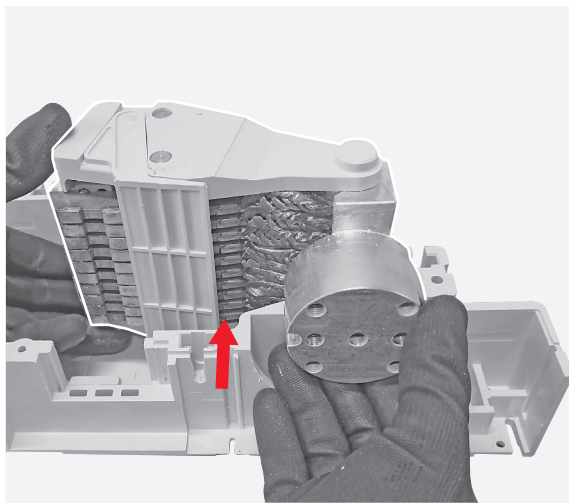
Manually remove the insulating protection.

**243**

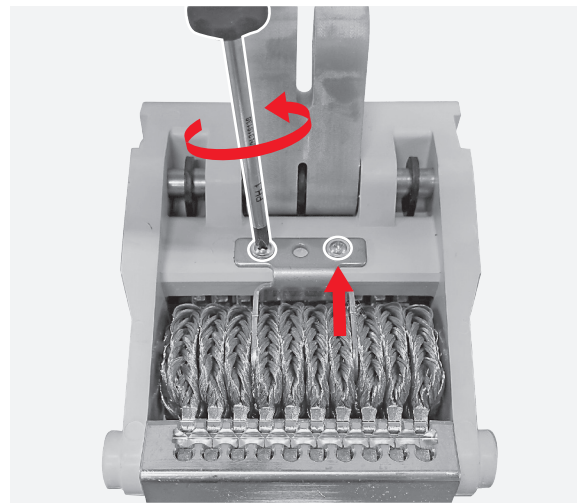
Manually remove the fixed contact.

**244**

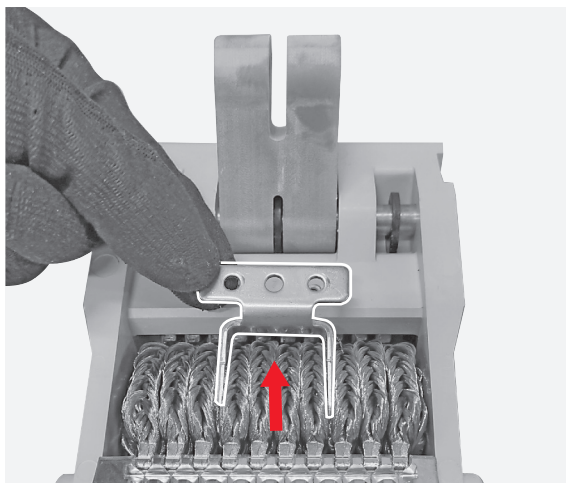
Manually remove the mobile contact.

**245**

By means of the cross screwdriver unscrew the 2 screws fixing the jumper to the mobile contact assembly.

**246**

Manually remove the jumper.

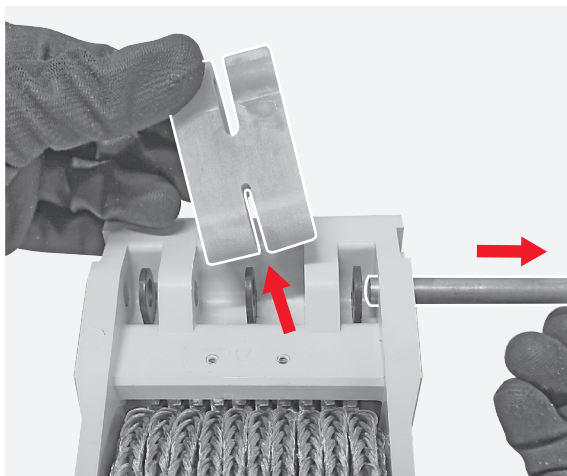
**247**

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

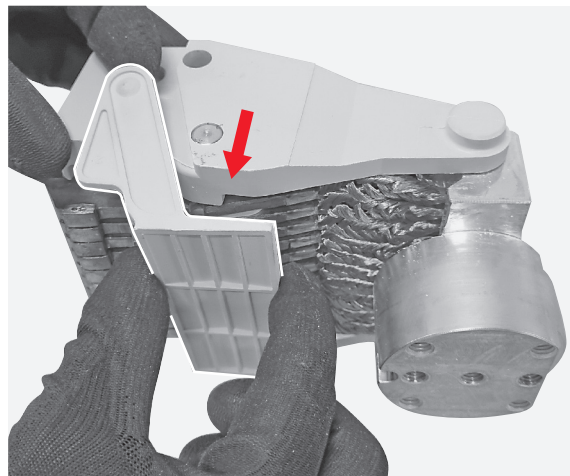


248

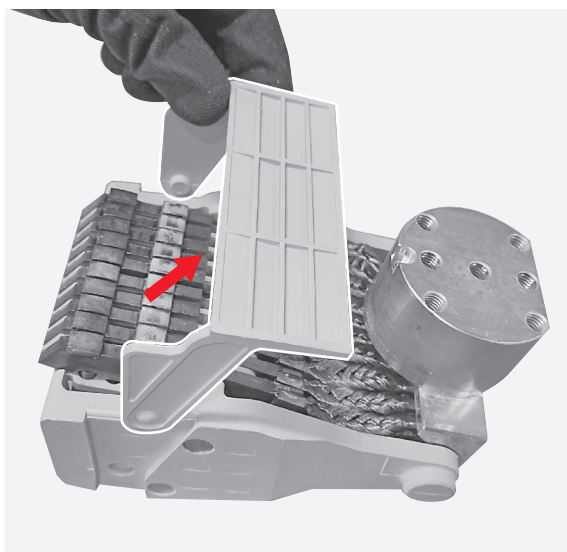
Manually remove the pin and the tie rod.

**249**

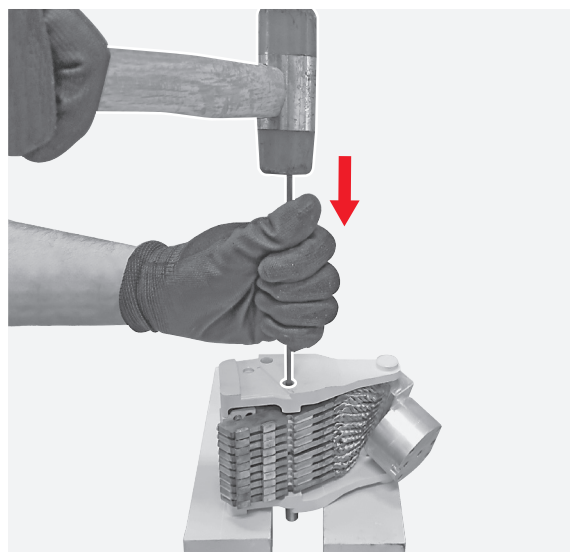
Manually unhook both appendixes of the insulation protection.

**250**

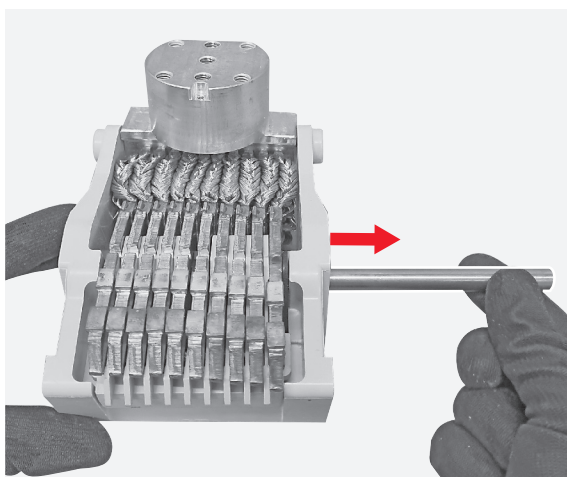
Manually remove the insulation protection.

**251**

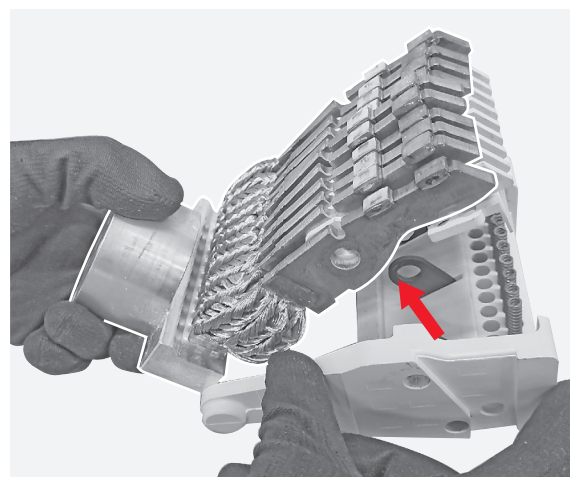
Place the mobile contact assembly as shown in the picture and then by means of the hammer and of the rod push out the pin.

**252**

Manually remove the pin.

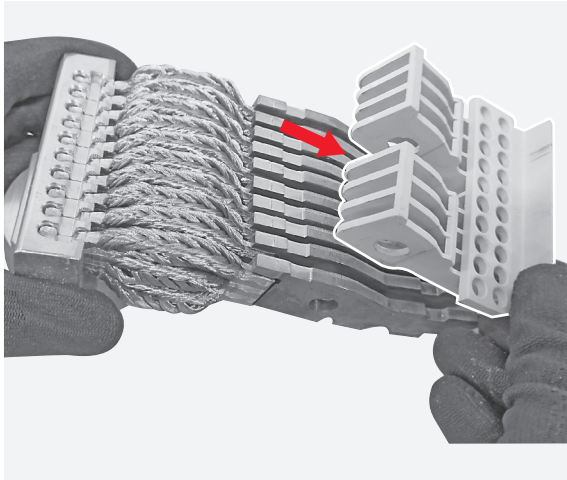
**253**

Manually separate the mobile contact from its contacts holder.

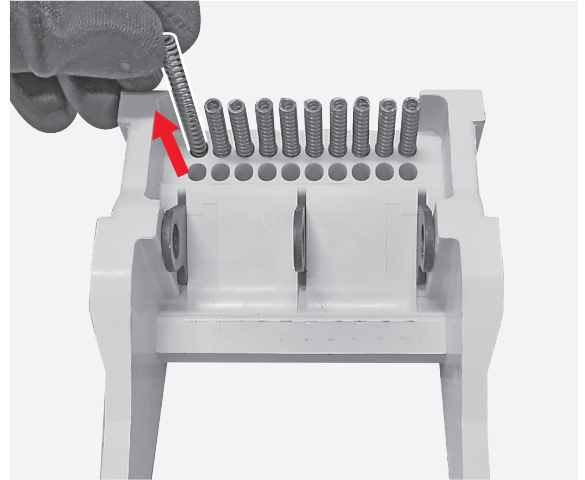


254

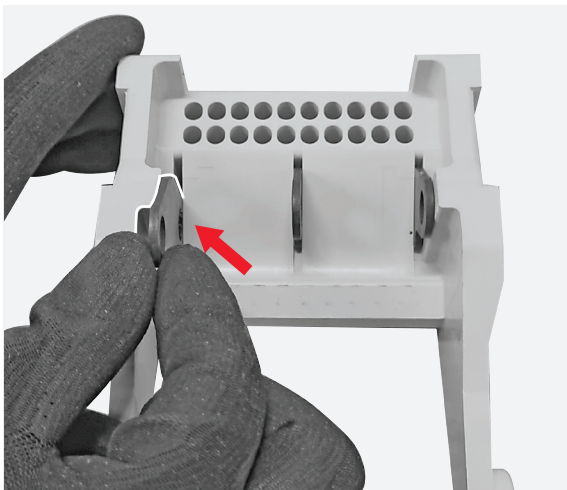
Manually remove the contacts spacer.

**255**

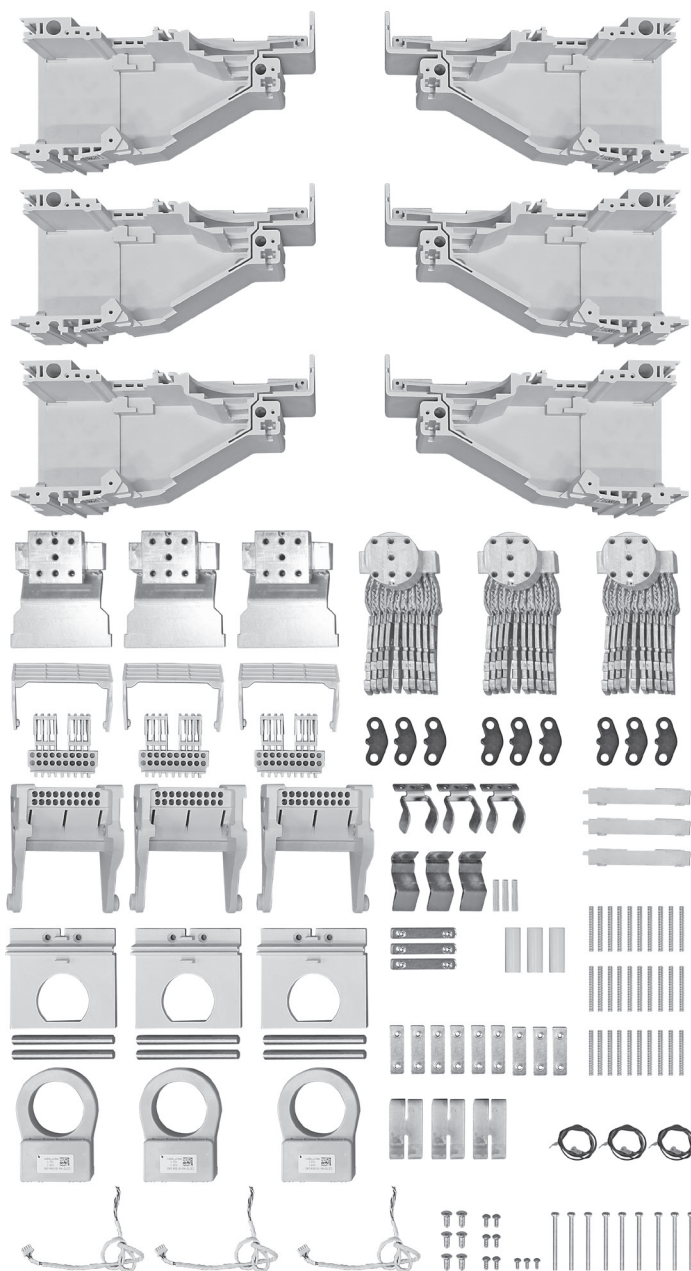
Manually remove the 10 springs mounted on the contacts holder.

**256**

Manually remove the 3 shoulders.



Disassembled parts



- 6 + 3 + 9 + 6 screws (Metal)
- 3 sensor covers (Plastic)
- 3 cables covers (Plastic)
- 3 wires (Plastic and Metal)
- 3 sensor plugs (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 3 sensors (Plastic and mixture) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 3 cables (Plastic and Metal) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 6 poles cases (Plastic)
- 12 plates (Metal)
- 3 bushes (Plastic)
- 3 insulating protections (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 3 fixed contacts (Metal)
- 3 jumpers (Metal)
- 6 pins (Metal)
- 3 tie rods (Plastic)
- 3 insulation protections (Plastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 3 mobile contacts (Metal)
- 3 contacts spacers (Pastic) SEPARATE TREATMENT (Thermoplastics containing brominated flame retardants)
- 30 springs (Metal)
- 9 shoulders (Metal)
- 3 contacts holders (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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