instructions for use

LF draw−out
circuit−breakers
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symbols and conventions

Caution: you will find all the symbols below throughout the document, indicating the hazard levels depending on the different types of situation.

DANGER

as per iso 3864–2

DANGER: failure to follow this instruction will result in death or serious injury.

WARNING

as per iso 3864–2

WARNING: failure to follow this instruction may result in death or serious injury.

CAUTION

as per iso 3864–2

CAUTION: failure to follow this instruction may result in injuries. This alert signal can also be used to indicate practices that could damage the SM6 unit.

INFORMATION–ADVICE

We draw your attention to this specific point.
Call your sales representative who will put you in contact with the closest SCHNEIDER ELECTRIC group service centre. You can log on to: www.schneider–electric.com

distribution rules

The aim of this publication is to enable the SF6 unit to be installed correctly.

This document is not a commercial document. It is a strictly technical document drawn up by Schneider Electric.

safety rules

CAUTION

All the operations described below must be performed in compliance with applicable safety standards, under the responsibility of a competent authority.

WARNING

The contractor must be certified and authorised to manipulate and perform work on the SF6 unit.

CAUTION

Only undertake the work after having read and understood all the explanations given in this document. If you have any difficulty complying with these rules, please contact Schneider Electric.
draw–out circuit–breakers

LF1 630A

LF1 1250A

LF2 630A and 1250A

LF3 2500A
**front panel**

A : poles  
B : operating mechanism plate  
C : circuit-breaker frame  
D : front plate  
E : mechanical opening pushbutton  
F : moving part position selector  
G : opening for inserting the operating crank handle of the moving part  
H : moving part position mechanical indicator

**operating mechanism plate**

1 : operating mechanism charging lever  
2 : closing pushbutton  
3 : opening pushbutton  
4 : operation counter  
5 : "open or closed" device status mechanical indicator  
6 : "charged or uncharged" operating mechanism charging status mechanical indicator
identification

Check:
- that the technical data marked on the rating plates match the information given on the order form.
- that the connection diagram is enclosed with the device manual.

location of the information plates

IEC standard
A: technical data and auxiliaries plate
B: serial number

contactor and auxiliaries rating plates

1: device type designation
2: rated voltage
3: rated lightning impulse withstand voltage
4: rated continuous operating current
5: rated breaking capacity for CC 3s
6: no-load breaking capacity
7: rated operating sequence
8: class
9: SF6 mass
10: reference standard
11: characteristics information plates

option label
(stuck on the operating mechanism plate)

Label indicating the undervoltage trip device option.

Label indicating the undervoltage trip device option.
storage

The circuit-breakers are dispatched in the open position, with the operating mechanism deactivated.

Store the devices in their original packing.

prolonged storage

In the exceptional case of the circuit-breaker being delivered separately from an MCset FU and in the event of prolonged storage, the device must remain in its original packing.

After prolonged storage, all insulating parts must be thoroughly cleaned prior to use. The enclosure must be dusted using a clean, dry cloth.

unpacking and handling

In the exceptional case of the circuit-breaker being delivered separately from an MCset FU.
- unpack the equipment on the installation site.
- avoid impacts.

Once the device is unpacked, handle it by lifting or rolling means.

handling by lifting

Sling up the device using the lifting lugs and place it on the OED. When the device has been taken up by the OED, unhook the slings, remove the handling parts and their screws.

NB: keep the lugs and screws for subsequent handling operations.

handling by rolling

The device is handled by its front face by means of a moving part extraction tool (OED) on an even floor.

CAUTION

Never pull or push the device by the poles (the poles are pressurised).
### Overall Dimensions

<table>
<thead>
<tr>
<th>Devices</th>
<th>Phase to Phase</th>
<th>Dimensions A</th>
<th>Dimensions B</th>
<th>Dimensions C</th>
<th>Weight Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF1 630 A</td>
<td>145</td>
<td>497</td>
<td>749</td>
<td>897</td>
<td>160</td>
</tr>
<tr>
<td>LF1 1250 A</td>
<td>145</td>
<td>497</td>
<td>749</td>
<td>897</td>
<td>170</td>
</tr>
<tr>
<td>LF2 630 A et 1250 A</td>
<td>185</td>
<td>627</td>
<td>749</td>
<td>897</td>
<td>190</td>
</tr>
<tr>
<td>LF3 2500 A</td>
<td>240</td>
<td>827</td>
<td>749</td>
<td>897</td>
<td>280</td>
</tr>
<tr>
<td>LF3 3150 A</td>
<td>240</td>
<td>827</td>
<td>749</td>
<td>897</td>
<td>320</td>
</tr>
</tbody>
</table>
fitting and extracting

To fit or extract a draw-out LF on an MCset functional unit, refer to the functional unit user manual.

plugging in and out

To plug in or out a draw-out LF on an MCset functional unit, refer to the functional unit user manual.

removing the front plate

Remove the front plate.

Remove the 6 front plate fixing screws.

Reassemble the covers in reverse order to disassembly.
electrical diagram n° 889461
MV circuit breaker fixed or withdrawable (pressure switch 1 threshold)
<table>
<thead>
<tr>
<th>type de branchement 1 ère lettre du schéma</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>P</th>
</tr>
</thead>
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<tr>
<td>présence de pont entre les bornes --- / ---</td>
<td>72 / 73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bridge between terminals --- / ---</td>
<td>72 / 38</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td><strong>H pontage standard et niveau C</strong></td>
<td>73 / 74</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td><strong>H bridge standard and level C</strong></td>
<td>89 / 95</td>
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<td></td>
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<tr>
<td>A pontage à utiliser qu’en cas de retrofit (interchangeabilité).</td>
<td>69 / 71</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A bridge only to be used in retrofit cases</strong></td>
<td>74 / 38</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

les pontages sont possibles uniquement sur les disjoncteurs avec prises de raccordement
the bridges are only possible on the circuit breaker with low voltage connectors
operating mechanism plate
1: operating mechanism charging lever
2: closing pushbutton
3: opening pushbutton
4: operation counter
5: "open or closed" device status mechanical indicator
6: "charged or uncharged" operating mechanism charging status mechanical indicator

operating instructions

circuit-breaker manual operation

carrying out a Closing – Opening cycle charging the operating mechanism

Charge the operating mechanism by an up and down motion until you hear a click.

The circuit-breaker position indicator remains on "O" (device open).
The operating mechanism indicator moves to the charged position.

Press the pushbutton to close the circuit-breaker.

The circuit-breaker position indicator moves to "I" (device closed).
The operating mechanism indicator moves to the deactivated position.

if the circuit-breaker is equipped with an undervoltage release (optional), the latter must be energised in order to close the circuit-breaker (except in the case of downstream supply).

CAUTION
opening

Press the pushbutton to open the circuit-breaker. The circuit-breaker position indicator remains on “O” (device open). The operating mechanism indicator moves to the deactivated position.

carrying out an Opening – Closing – Opening cycle

charging the operating mechanism

Charge the operating mechanism by an up and down motion until you hear a click. The circuit-breaker position indicator remains on “O” (device open). The operating mechanism indicator moves to the charged position.

closing

if the circuit-breaker is equipped with an undervoltage release (optional), the latter must be energised in order to close the circuit-breaker (except in the case of downstream supply).

Press the pushbutton to close the circuit-breaker. The circuit-breaker position indicator moves to “I” (device closed). The operating mechanism indicator moves to the deactivated position.

charging the operating mechanism

Charge the operating mechanism by an up and down motion until you hear a click. The circuit-breaker position indicator remains on “I” (device closed). The operating mechanism indicator moves to the charged position.
opening
Press the pushbutton to open the circuit-breaker.
The circuit-breaker position indicator remains on "O" (device open).
The operating mechanism indicator moves to the charged position.

closing
Press the pushbutton to close the circuit-breaker.
The circuit-breaker position indicator moves to "I" (device closed).
The operating mechanism indicator moves to the deactivated position.

opening
Press the pushbutton to open the circuit-breaker.
The circuit-breaker position indicator moves to "O" (device open).
The operating mechanism indicator moves to the deactivated position.

circuit-breaker remote operation

electrical charging of the operating mechanism
A gear motor unit automatically recharges the operating mechanism after a circuit-breaker closing.

opening and closing
The release opening and closing operations are remote controlled.
foreword

safety instructions

All the operations described below must be performed in accordance with applicable safety standards under the supervision of a competent authority.

We recommend that you extract the circuit-breaker from the MCset cubicle (see functional unit user manual).

To access the various parts:
- open the circuit-breaker
- cut the supply to the auxiliary circuits and the main circuit
- close then open the circuit-breaker by means of the push buttons in order to deactivate the operating mechanism
- avoid impacts (pressurised enclosure)

general rules

Our equipment is designed to guarantee optimum service provided that the maintenance operations described in this document are complied with.

These operations require removal of the protective covers (front plate and operating mechanism plate). Removal and replacement of the covers is described in the installation instructions section.

The front plate is removed by withdrawing its clips.

cycle and maintenance operations

This device is designed to operate for 10 years or 10 000 operations in normal conditions of use according to the IEC 694 standard.

We recommend:
- an opening/closing operation at least once a year
- a visual inspection at least once every 5 years with the Groupe Schneider service centres.
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<td>spring guide</td>
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<td></td>
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<tr>
<td>latching mechanism and linkage</td>
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<td></td>
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<tr>
<td>gear motor</td>
</tr>
<tr>
<td>pole operating mechanism connection mechanism</td>
</tr>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>propulsion guide</td>
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<td></td>
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<tr>
<td>endless screw</td>
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</table>
preventive maintenance and cleaning instructions

The pressurised SF6 gas inside the pole retains all its dielectric properties after breaking. Electrical durability is limited by contact wear. This wear depends on device use. We draw your attention to the risk of cleaning processes, consisting of spraying solvents at high pressure.

The main drawbacks of such processes are:
- damage due to jet pressure and impossibility of re-lubricating inaccessible fixing points.
- risk of overheating due to solvent presence on contact areas.
- elimination of special protections.

CAUTION
Never use solvents and alcohol.

If the insulating parts are dusty, it is recommended that you remove the dust using a dry cloth.

monitoring arcing contact wear
This operation requires removal of the springs.

Arcing contact wear is monitored on the operation mechanism/circuit-breaker pole link. Check that the circuit-breaker is open, with its operating mechanism deactivated.

removing the closing springs

Slightly charge the operating mechanism using the charging lever...

... the springs will be compressed...
as soon as possible insert a 6 dia. 40 mm long min. screw or pin into the hole shown above. Release the lever. The springs will exert a force on the pin. On no account must the pin be free. *(do not exceed the first notch on the operating mechanism, or perform a complete cycle and start again).*

Remove the washer and circlips A. Release and withdraw the spring. Remove ring B taking care not to damage it (Teflon coating).

---

**checking**

Serial connect the three phases of the device and insert a bell type indicator in the circuit.

Charge the operating mechanism until you hear a click indicating charging is complete.

Exert pressure on the lever and at the same time pull the right-hand crank handle towards you until the ratchet wheel is latched.

At the same time press the closing “I” pushbutton and the charging lever in order to release the latching mechanism.
Very slowly close the circuit-breaker using the lever. Stop charging as soon as the lamp comes on: the arcing contacts of the three phases are in contact.

**CAUTION**

Keep the lever in this position, with the bell activated. If the position is overshot, repeat the operation.

When the lamp is on, a rod with a diameter less **than or equal to 6 mm** can be inserted in the hole shown above. For larger diameters, absence of signal means the device must be replaced.

fitting the closing springs

Fit the spring on pin C and ring B of the operating mechanism.

**CAUTION**

Do not lubricate when mounting and do not scratch the teflonised ring.

Press the closing button and at the same time....
... continue charging....

... in order to bring the crank handle D into the axis of the lower fixing hole of the spring guide.

Fit the washer and the circlips A.

Check that the circuit-breaker is open and that the operating mechanism is deactivated.

Slightly charge the operating mechanism in order to unflange the springs.

Remove the locking created on the springs with the 6 dia. screw or pin.
Continue charging until you hear a click.

**Check:** Close then open using the “I” and “O” pushbuttons in order to deactivate the operating mechanism.

---

**lubricating the spring guides closing spring**

Charge the operating mechanism by an up and down motion until you hear a click.

The circuit-breaker position indicator remains on “O” (*device open*). The operating mechanism indicator moves to the charged position.

The springs will be compressed.
- lubricate the guides
- oil the phosphatised springs

**CAUTION**

*do not lubricate the teflonised ring A.*

**WARNING**

*A brush must be used to lubricate. Do not dismantle the spring to perform this operation.*
opening spring
manual closing of the circuit-breaker

CAUTION

If the circuit-breaker is equipped with an undervoltage release (optional), the latter must be energised in order to close the circuit-breaker (except in the case of downstream supply).

Press the push button “I” to close the circuit-breaker.

The circuit-breaker position indicator moves to “I” (device closed).
The operating mechanism indicator moves to the deactivated position.

The springs will be compressed:
- lubricate the guides
- oil the phosphatised springs.

WARNING
A brush must be used to lubricate. Do not dismantle the spring to perform this operation.

manual opening of the circuit-breaker

Press the push button “O” to open the circuit-breaker.

The circuit-breaker position indicator moves to “O” (device open).
The operating mechanism indicator indicates that the mechanism is deactivated.

operating mechanism unit

Clean the entire subassembly.
Oil all the phosphatised parts.
Check that the locking eye bolts are fitted.
Lubricate the pins and hinges.

WARNING
A brush must be used to lubricate.
Do not dismantle the operating mechanism to perform this operation.
Clean the entire subassembly
Lubricate the gears

**WARNING**
A brush must be used to lubricate.
Do not dismantle the gear motor to perform this operation.

---

**SEPAM diagnosis**

This function supplies the total number of breakings and the cumulated total of broken kA2. The cumulated total of broken amps reflects the degree of wear of the breaking part.

This information is used to manage arcing contact wear and to generate monitoring. Maximum levels of broken amp cumulated totals:

- **LF1, 2 or 3:** cumulated 30000 (KA)^2.
Corrective maintenance operations are designed to replace faulty subassemblies.

The operations listed in the summarising table below can be performed either by the customer or by the Groupe Schneider After-Sales representatives. For any other operations consult your nearest Groupe Schneider representatives.

After each operation carry out the electrical tests in accordance with current standards.

**CAUTION**
when replacing equipment, the following accessories must all be replaced by new devices.
- Nylstop (self-locking nut)
- Contact washer
- Locking eye bolts
- Mechanical pin

## summarising table

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<tr>
<th>description</th>
<th>performed by</th>
<th>comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>replacing the enclosure</td>
<td>Schneider Electric</td>
<td>(replacing the device)</td>
</tr>
<tr>
<td>replacing the RI operating mechanism</td>
<td>Schneider Electric</td>
<td></td>
</tr>
<tr>
<td>replacing the key-lock</td>
<td>Schneider Electric</td>
<td></td>
</tr>
<tr>
<td>replacing the closing spring</td>
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<tr>
<td>replacing the closing spring</td>
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</tr>
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<td>replacing the releases</td>
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<tr>
<td>simple closing releases</td>
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<tr>
<td>shunt releases or simple overcurrent trip devices</td>
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<td>undervoltage trip devices with out lifting system</td>
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<td>undervoltage trip devices with out lifting system with a time delay unit</td>
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<tr>
<td>undervoltage trip devices with lifting system</td>
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</tr>
<tr>
<td>shunt releases or double overcurrent trip devices</td>
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<tr>
<td>replacing the MITOP release</td>
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<tr>
<td>replacing the gear motor</td>
<td>Schneider Electric</td>
<td>every 10 000 operations</td>
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<tr>
<td>replacing the microswitch (SE)</td>
<td>Schneider Electric</td>
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<tr>
<td>replacing the M1, M2 and M3 end of charging contacts</td>
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<td>replacing the antipumping relay</td>
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<tr>
<td>replacing the auxiliary contact unit</td>
<td>Schneider Electric</td>
<td></td>
</tr>
<tr>
<td>replacing the operation counter</td>
<td>Schneider Electric</td>
<td>every 10 000 operations</td>
</tr>
</tbody>
</table>
replacing a key–lock removal

This interlocking is optional. With MCset integration, interlocking is conducted on the functional unit.

fitting and checking

Fit the lock on its support. Fit and tighten the lock fixing screws.

Part A must not be flanged by the latch on lock B.

replacing the closing springs

Check that the circuit–breaker is open and that the operating mechanism is deactivated.

removing the closing springs

Very slightly charge the operating mechanism using the charging lever...

... the springs will be compressed...
.... as soon as possible insert a 6 dia. 40 mm long min. screw or pin into the hole shown above. Release the lever. The springs will exert a force on the pin.
On no account must the pin be free.
(Do not exceed the first notch on the operating mechanism, or perform a complete cycle and start again).

Remove the washer and the circlips A.
Remove ring B taking care not to damage it (Teflon coating).

fitting the closing springs

Fit the spring and ring B on pin C of the operating mechanism.

CAUTION
Do not lubricate when mounting and do not scratch the teflonised ring.

...continue charging....

Press the closing button and at the same time....

... in order to bring the crank handle D into the axis of the lower fixing hole of the spring guide.
Fit the washer and the circlips A. Check that the circuit-breaker is open and that the operating mechanism is deactivated.

Slightly charge the operating mechanism in order to unflange the springs. Remove the locking created on the springs with the 6 dia. screw or pin.

Check:
Close then open using the "I" and "O" pushbuttons in order to deactivate the operating mechanism.

Continue charging until you hear a click.
replacing a release
different positions of releases in the operating mechanism

<table>
<thead>
<tr>
<th>release</th>
<th>undervoltage release</th>
<th>shunt release</th>
<th>overcurrent trip unit</th>
<th>top view of assembly position</th>
</tr>
</thead>
<tbody>
<tr>
<td>single closing release</td>
<td></td>
<td></td>
<td></td>
<td>I</td>
</tr>
<tr>
<td>undervoltage release</td>
<td></td>
<td></td>
<td></td>
<td>II</td>
</tr>
<tr>
<td>single opening release</td>
<td></td>
<td></td>
<td></td>
<td>III</td>
</tr>
<tr>
<td>double opening release</td>
<td></td>
<td></td>
<td></td>
<td>V</td>
</tr>
</tbody>
</table>

single closing release according to position I
removal

Mark and disconnect the wires. Remove the two M6 fixing screws. Remove the release.

fitting and checking

Fit in reverse order to removal. **Tightening torque: 13 Nm.**
Position the release with its cylindrical rod pointing towards the latching crank handle.
Check that the coil rod does not flange the crank handle in the tripped position and ensures passage of the closing lock A on the eccentric catch B.
undervoltage release
according to position II
removal
Mark and disconnect the wires. Remove the two M6 fixing screws. Remove the trip unit.

fitting and checking

Place the trip unit in the tripped position. Place the crank handle in the limit stop position. There must be a clearance of 0.5 to 1 mm between the crank handle and the trip unit. Fit the two M6 fixing screws. **Tightening torque: 13 Nm.**

shunt release or
overcurrent trip unit
according to position III
removal
Mark and disconnect the wires. Remove the two M6 fixing screws. Remove the release.

fitting and checking

Fit in reverse order to removal. **Tightening torque: 13 Nm.** Position the release with its cylindrical rod pointing towards the latching crank handle. Check that the coil rod does not flange the crank handle in the tripped position and ensures passage of the closing lock A on the eccentric catch B.
according to position IV removal

**NB:** the coil is mounted to the left or right of the operating mechanism according to the protection type.
Mark and disconnect the wires.
Remove the two M6 fixing screws.
This assembly is **compatible** with the presence of an undervoltage release.
Remove the release.

fitting and checking

Fit in reverse order to removal.

**Tightening torque: 13 Nm.**
Position the release with its cylindrical rod pointing towards the latching crank handle.
Check that the coil rod does not flange the crank handle in the tripped position and ensures passage of the closing lock A on the eccentric catch B.

shunt release or overcurrent trip unit (two coils)

according to position V removal

Mark and disconnect the wires.
Remove the two M6 fixing screws.
Remove the release.

fitting and checking

Fit in reverse order to removal.

**Tightening torque: 13 Nm.**
Position the release with its cylindrical rod pointing towards the latching crank handle.
Check that the coil rod does not flange the crank handle in the tripped position and ensures passage of the closing lock A on the eccentric catch B.
according to position VI
removal

Mark and disconnect the wires.
Remove the two M6 fixing screws.
Remove the release.

fitting and checking

Fit in reverse order to removal.

Tightening torque: 13 Nm.

Position the release with its cylindrical rod pointing towards the latching crank handle.
Check that the coil rod does not flange the crank handle in the tripped position and ensures passage of the closing lock A on the eccentric catch B.

replacement
gear motor and roller
on the ratchet holder
removing the gear motor

Unhook the ratchet holder return spring and lift the gear latching ratchet by means of a screwdriver.

Raise the motor ratchet holder as high as possible and lock it in place with the screwdriver.

Remove the gear motor (3 screws).

Disconnect the 2 motor supply wires.
**removing the roller on the ratchet holder**

- Remove spring A.
- Remove the roller.
  - Truarc B.
  - washers C.
  - bearing D.
  - internal bearing ring E.
  - pin F.

**placing the roller on the ratchet holder**

- Place the spring on the ratchet holder.

Assemble the roller, with the part of the pin used to hook the spring turned towards the gear motor.

Prepare and lubricate the parts:
- bearing D.
- internal bearing ring E.
- pin F.
- washers C.
- Truarc B.
- spring A.
fitting the gear motor

Stick (SR 270 strong loctite) and screw the HM6 length 12, **class 12.9** stud in the yellow column on the tool mark side.

Stick (SR 270 strong loctite) and screw the new column equipped with the stud into the operating mechanism column.

To fit the gear motor, raise the ratchet wheel as far as it will go and lock it using the screwdriver.

Should a ratchet catch in the ratchet wheel, it will prevent this operation.

Raise the motor ratchet wheel as far as it will go and lock it using the screwdriver.

Insert the gear motor, taking care not to remove screw G so as not to lose spacer H placed between the two flanges.

Fit the screws **class 10.9** (stick using SR 270 strong loctite) and secure the gear motor assembly to a **torque of 13 Nm**.

Hook the spring onto the gear motor pin.
replacing an SE microswitch

removal

- connect the wiring to the terminal block

- Remove the two fixing screws.
- Remove the microswitch without withdrawing the insulating plates.

fitting and checking

Perform reverse operation to disassembly having first compensated clearance in an anticlockwise direction and pushed the contact in the direction of the auxiliary contacts.

- Tightening torque: 0.7 Nm.

replacing an end of charging contact (M1/M2/M3) removal

- Mark and disconnect the wires.
- Remove the 6 hexagon socket screws and fixing nuts.

fitting and adjustment

- Proceed in reverse order.
- Lock the contact fixing screws.
- Tightening torque: 0.7 Nm.
- Adjustment:
  - do not flange the contact,
  - adjust travel \( A \, 0.7 \pm 0.1 \) mm.
- NB: to adjust \( A \),
  - loosen nut \( B \)
  - move the part along \( C \)
replacing the antipumping relay removal

Mark and disconnect the wires.

Loosen the fixing screw and slide the relay so that the screw leaves the slot. Use a 7 wrench.

fitting

Fit the fixing screw on the relay and position the relay.

Lock the fixing screw in place. **Tightening torque : 0.7 Nm.**

Connect the wires as in the wiring diagram and bind.

replacing the auxiliary contact unit removal

Remove the operating mechanism cover.
  - locate the contact unit A.
  - mark and disconnect the wires.

Remove the terminal block assembly B, fixed by screws, washers and nuts C.
Presentation

OLD rotary switch ENTRELEC.

NEW rotary switch MAFELEC.

Dismantling the OLD rotary switch

Remove the 2 nylstop nuts D.

- remove pin E and collar F
- remove rotary switch A

- remove rivet G which locks small plate J
- remove crank H and small plate J
fitting of new rotary switch

Assemble on the new unit, crank H according to the assembly direction shown above:
- reference "O" (engraved on the pin) in front of the hole of rivet G

Fit plate J and fix it by a rivet G (or a diameter 3 screw).

To end the assembly, the operation is the reverse to the dismantling:
- fix rotary switch D on the operating mechanism
- fix pin E and colar F

- fix and lock the 2 nylstop nuts K
- fix the assembly terminal block D, fix by screws, washers, nuts

dismantling of the new rotary switch

Remove the 2 nylstop nuts K.

Remove pin E and colar F, remove rotary switch D.
Remove rivet G which locks small plate J. Remove crank H and small plate J.
SF6 gas recovery conformity rules

The SF6 must be removed before any dismantling operation can be carried out in compliance with the procedures described in IEC-61634 and according to the following instructions.

The gas must be treated in compliance with IEC-60480.

intervention method

Tool necessary for the operation

LF

Plug (A).

Connect the vacuum/filling device.

Vacuum/filling device connected.

Wait until the pressure gauge shows 0 (15 min to empty the tank) before removing the connection.
problems, probable causes and solutions

The information given below reduces operating downtimes to a minimum. If the solutions proposed are not effective, we suggest you contact the Groupe Schneider service centre.

<table>
<thead>
<tr>
<th>symptoms</th>
<th>Faulty devices</th>
<th>Probable causes and solutions</th>
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</thead>
<tbody>
<tr>
<td>Charging impossible.</td>
<td>Electrical operating mechanism: motor</td>
<td>Insufficient voltage at motor terminals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ restore voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ replace motor if required</td>
</tr>
<tr>
<td></td>
<td>End of charging contact</td>
<td>■ check contact state</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ replace it if required</td>
</tr>
<tr>
<td></td>
<td>Wiring</td>
<td>■ check auxiliary circuit connections</td>
</tr>
<tr>
<td>Circuit–breaker closing impossible. the indicator remains green</td>
<td>Undervoltage release</td>
<td>The coil is not energised</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ energise the release or keep it artificially in the « closed circuit » position</td>
</tr>
<tr>
<td></td>
<td>Closing release</td>
<td>The release is badly connected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ check the circuit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ The winding is cut</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ replace the release</td>
</tr>
<tr>
<td></td>
<td>Charging device</td>
<td>The operating mechanism is not charged</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ charge the operating mechanism</td>
</tr>
<tr>
<td>The circuit–breaker closes and opens immediately and remains open although the closing order is maintained.</td>
<td>All opening trip units (direct or indirect)</td>
<td>There is a fault on the main HV circuit, or protection circuits are incorrectly adjusted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ remove the fault</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ adjust the protection circuits</td>
</tr>
<tr>
<td>The circuit–breaker opens and closes in turn.</td>
<td>Antipumping relay or direct releases</td>
<td>■ replace the relay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ readjust</td>
</tr>
<tr>
<td>The circuit–breaker does not open manually or remotely. (circuit–breaker without electrical operating mechanism).</td>
<td>Operating mechanism or circuit–breaker (incomplete closing)</td>
<td>Hard spot on the operating mechanism or circuit–breaker</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ finish charging the mechanism with the manual charging handle.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Warn the Groupe Schneider service centre.</td>
</tr>
<tr>
<td>Trip unit</td>
<td>The trip unit is badly connected</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ check the circuit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ The winding is cut</td>
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<td></td>
<td></td>
<td>■ replace the trip unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ check the protection circuit</td>
</tr>
</tbody>
</table>
group Schneider Electric service centers are there for:

engineering and technical assistance
start-up
training
preventive and corrective maintenance
adaptation work
spare parts

Call your sales representative who will put you in touch with your nearest group Schneider Electric service centers.