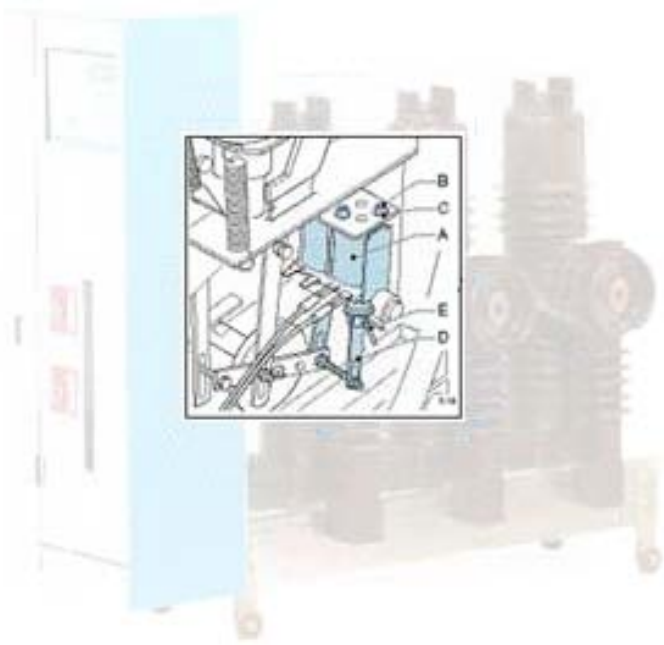
VA-2 (RP)

CIRCUIT BREAKER TRIP COIL



User Manual

IT IS MANDATORY TO CONSULT THIS DOCUMENT AT ALL TIMES BEFORE OPERATION

MEVOCO
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PREFACE

This document

This document is intended as a reference with which operators can safely and economically transport, install, use and maintain the circuit breaker. At all places where the word ‘circuit breaker’ is mentioned in this document, this refers to the circuit breaker VA-2 with the optional digital protection relay RP600. All cases involving specific information with respect to the digital protection relay RP600 (optional) are indicated as such. Therefore this document applies to the types of circuit breakers given below:

- VA-2: Circuit breaker
- VA-2RP: Circuit breaker + digital protection relay RP600

The chapters and sections are numbered. The page numbering (consisting of the chapter number and the page number) and the document code can be found at the bottom of each page.

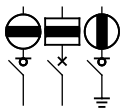
Pictograms in the documentation

The following pictograms are used in the user's manual of the circuit breaker:

CAUTION
Procedures that - when not carried out with due care - can result in damage to the circuit breaker, the surrounding area or the environment.

WARNING
Danger of high voltage

Notes, suggestions and advices



Open the load-break switch as well as the circuit breaker and close the earthing switch before carrying out the work described.

Consult the indicated information sources first.

Protect the circuit breaker from water or damp.

Ensure reuse or environment-friendly processing of the materials used.

Related documentation

The following related technical documentation is available for the circuit breaker:

- Circuit breaker brochure.
- Digital protection relay RP600 brochure.
- User's manual for digital protection relay RP600.

Service and technical support

For information concerning specific settings, maintenance or repair work that is not mentioned here, please contact Mevoco N.V.
In this case always mention the following data of the circuit breaker:

- type of circuit breaker
- rated voltage circuit breaker
- rated current circuit breaker
- trip power of circuit breaker
- serial number of circuit breaker
- serial number of digital protection relay

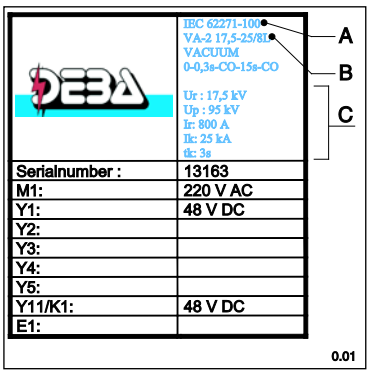
See "Identification of the circuit breaker".

Identification of the circuit breaker

Each circuit breaker is fitted with a type plate (fig. 0.01) and a stamped serial number (fig. 0.02).

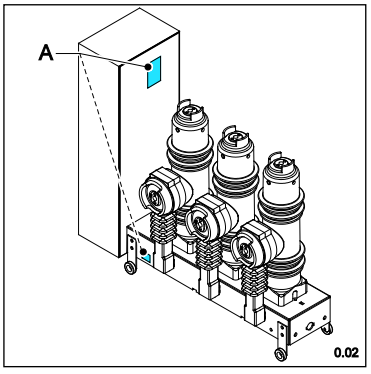
Identification plate (fig. 001)

A IEC standard
B Type of circuit breaker
C Specifications



Serial number (fig. 002)

A Serial number



General safety directions and instructions

Mevoco n.v. does not accept any liability for damage or injury caused by not (strictly) following the safety regulations and instructions, or by negligence during the installation, use, maintenance or repair of the circuit breaker and any accompanying options.
Depending on the specific circumstances of use or options applied, extra safety instructions may be necessary. Please contact Mevoco n.v. immediately if you encounter a potential danger when using the circuit breaker.

The operator/owner of the circuit breaker is fully responsible at all times for following the locally applicable safety regulations and guidelines.

User Manual

- Everyone using or operating the circuit breaker must know the contents of the user's manual and very closely follow the directions contained in it. The operator/owner must instruct the users in accordance with the user's manual and observe all directions and instructions.
- Never change the order of the activities to be carried out.
- Always keep the user's manual in the vicinity of the circuit breaker.

Pictograms and safety symbols

Pictograms, symbols and instructions on the circuit breaker are part of the safety provisions. Therefore, they may not be covered or removed and must be present and clearly legible throughout the entire lifetime of the circuit breaker.

- Replace or repair illegible or damaged pictograms, symbols and instructions immediately. For this purpose contact Mevoco n.v.

Technical specifications

- The technical specifications may not be changed.
- Modification of (parts of) the circuit breaker is not permitted.

Transport, storage, installation, use and maintenance

- See:
  - “Safety regulations – transport”
  - “Safety regulations – storage”
  - “Safety regulations – installation”
  - “Safety regulations – use”
  - “Safety instructions – maintenance”

Intended use

The circuit breaker has been exclusively designed for protection of distribution and dispersion switchgear, transformers, generators and electric motors so as to enable the circuit breaker to safely break or switch off the (normal) operating current as well as a fault current (current that occurs at a fault, thermal overload or short circuit) in conformity with the specifications and conditions provided by Mevoco n.v. Any other or further use is not considered to be in accordance with the intended use.[1]
Mevoco n.v. accepts no liability for any damage or injury resulting from such unauthorised use.

The circuit breaker complies with the applicable standards and guidelines. See the Technical Brochure.

Only use the circuit breaker in a technically perfect condition in accordance with the intended use described above..

Keep sealed connections intact at all times. Breaking the sealed connections irrevocably voids any claims under guarantee.

[1] "Intended use" as laid down in EN 292-1 is "...the use for which the technical product is suited as specified by the manufacturer-including his directions in the sales brochure." In case of doubt it is the use that can be deduced from the construction, the model and the function of the technical product that is considered normal use. Operating the product within the limits of its intended use also involves observing the instructions in the user manual.

1 MOUNTING OPTIONS

One or more of the options given below can be mounted on the VA-2 (possibly combined):

- closing coil(s)
- trip coil(s)
- tensioning motor
- undervoltage coil(s)
- key lock(s)
- auxiliary contact(s)
- operation counter

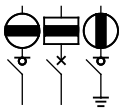
This manual informs on the trip coil and its mounting instructions.

2 TRIP COIL(S)

One or more tripping coils can be mounted on the mechanical drive of the VA-2(RP). With the help of these tripping coil(s) the compression spring that is to provide the energy for the opening cycle of the VA-2 can be automatically relaxed. After the VA-2(RP) has been closed, the circuit breaker can be opened with the help of the trip coil.
The compression spring that is to provide the energy for the opening cycle of the VA-2(RP) is activated by the tripping coil that puts a trip mechanism into operation.

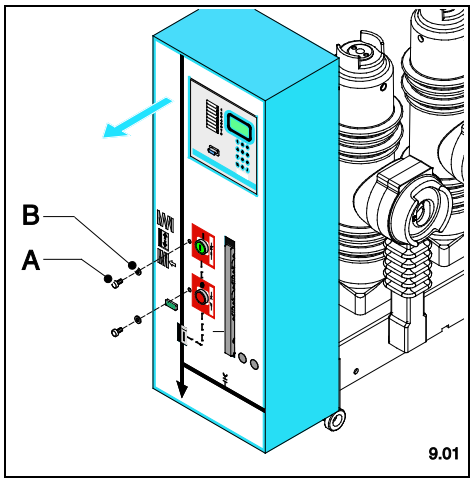
2.1 Preparation for mounting

The following preparations must always be taken **before** you start mounting the trip coil(s):



- Make the entire medium voltage switchgear and the circuit breaker voltage free.
- Open on the particular cubicle both the load-break switch and the circuit breakers.
- The HV cable connection side must also be voltage free.
- Close the earthing switch of the medium voltage switchgear.

- Remove the door of the medium voltage switchgear.
- Dismount the sheet cover from the VA-2 (RP).
  - Unscrew the 2 (fig. 9.01A) screws.
  - Remove the two screws with their PVC rings (fig. 9.01B).
  - Remove the cover.



2.2 Mounting the tripping coil(s) - general

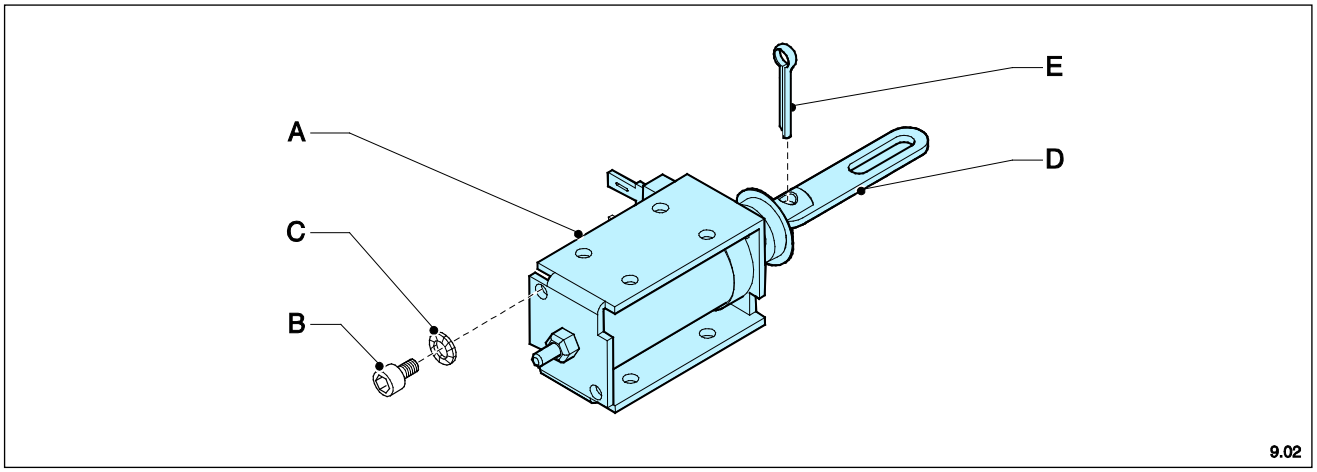
Special mounting kits are available for mounting the trip coil(s). The composition of these mounting kits depends on the type of trip coil.

Available mounting kits dependent on coil type

order number	description
VA001392	Tripping coil VA-2 / VA-2RP 24 VDC
VA001393	Tripping coil VA-2 / VA-2RP 48 VDC
VA001394	Tripping coil VA-2 / VA-2RP 60 VDC
VA001395	Tripping coil VA-2 / VA-2RP 110 VAC
VA001396	Tripping coil VA-2 / VA-2RP 110 VDC
VA001397	Tripping coil VA-2 / VA-2RP 220 VAC

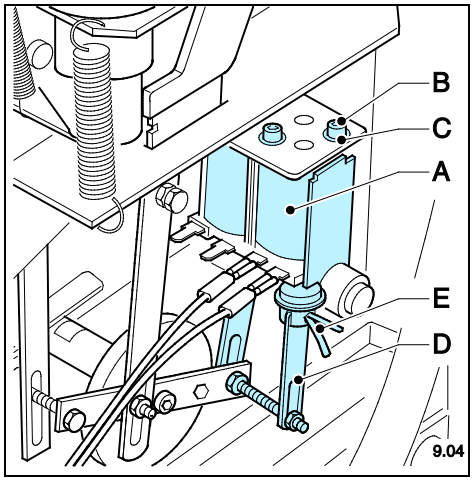
Order number mounting kit: VA00139x consists of:

order number	description	number	pos. no.
Dependent on the chosen coil:			
OP20xxxx	Coil depending on the voltage	1	fig. 9.02 A
Mounting material:			
GR040909	Cyl. screw DIN 912 M4x6 full thread	2	fig. 9.02 B
GR041604	Lock washer DIN 6798A Ø M4	2	fig. 9.02 C
VA407296	Shaft shunt-trip coil mech. VA-2 G.V.	1	fig. 9.02 D
GR043130	Split pin DIN 94 Ø 3.2 x 20	1	fig. 9.02 E



2.2.1 Mounting instructions

- Slide the shaft (D) of the trip coil (A) over the premounted bolt on the white disc.
- Mount from the top side of the sheet metal support the tripping coil using the screws (B) and the lock washers (C).



The bolts anchoring the coil are mounted diagonally, as indicated in the drawing.

Check the operation of the tripping coil by pressing it - with the circuit breaker still opened and not closed - by hand. The shaft must be free and be able to move smoothly.

- Electrically connect the coil according to the electrical diagram delivered.

The connection cards of the coils(s) point at the tensioning handle of the VA-2 (RP). Places for two tripping coils have been provided. They are placed along both sides of the shaft that rests on the white disc.

2.2.1.1 Electrical monitoring with external power source

Prevent burning out of the coil. Interrupt the voltage to the coil if the load break switch is open.
Place an auxiliary contact if supply comes from an external power source (battery).

2.3 Final check and commissioning

The following activities must always be carried out after mounting the tripping coil.

- Check that the fitting materials are properly attached.
- Test the circuit using a multimeter. If the tripping coil is supplied by an external power source, an auxiliary contact must always be installed.
  - Mount the sheet-metal shield of the VA-2 (RP).
  - Put the entire medium voltage switchgear and the circuit breaker into operation.