



# DF-2

## MEDIUM VOLTAGE SWITCHGEAR THE MODULAR CONCEPT



### Lifting & Transport Manual



**MEDIUM VOLTAGE SWITCHGEAR, BUILT TO LAST**

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## 1 PREFACE

### 1.1 About this manual

This document is intended as a reference for qualified and trained operators to transport the medium voltage switchgear in a safe and economical way.

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

In the documentation the words “left”, “right”, “front” and “behind” are used to indicate a specific part of the medium voltage switchgear. The starting point of is always the position of the operator, standing in front of the medium voltage switchgear, facing the switchgear.

### 1.2 Pictograms and safety symbols in and on the medium voltage switchgear.

Depending on the version, the following pictograms are used on the medium voltage switchgear:



#### **WARNING**

High Voltage Danger

Access to this cubicle is only allowed after this cubicle and both the directly adjacent cubicles (previous and next one) are voltage-free.



#### **TIP OVER DANGER**

### 1.3 Related documentation

The following technical documentation for medium voltage switchgear is available:

- transport manual
- installation manual
- user manual

### 1.4 Service and technical assistance

For information concerning specific settings, maintenance or repair work that is not mentioned here, please contact SGC nv - SwitchGear Company.

- When contacting SGC nv – Switchgear Company, always provide the following information::
  - Cubicle type and voltage
  - Serial number of the cubicle(s) *See 1.5 Identification of the cubicles.*

## 1.5 Identification of the cubicles

Each medium voltage switchgear cubicle is fitted with a nameplate and a stamped serial number

### Name plate

- A cubicle type
- B voltage
- C other technical specifications

Range / Type:		DF-2+ / DF-A+
Categorie:		AA10 / AA20 / AA35
Serialnumber / Year of construction:		58397 / 2011
LBS / Earthing switch:		RV44 / EM20
U <sub>i</sub> (U <sub>p</sub> ): 17,5 (95-110) kV		U <sub>a</sub> : 38 kV
I <sub>n</sub> : 800 A	f: 50 Hz	Class: E3
I <sub>c</sub> : 25 kA	I <sub>p</sub> : 63 kA	t <sub>c</sub> : 1s
VDS range: 10-16 kV		U <sub>a</sub> : 48 VDC
SF <sub>6</sub> bar abs. / m <sup>3</sup> / kg:		1,5 / 0,0173 / 0,157
Service continuity:		LSC2A
Type of partion:		PI
IAC:		AFLR-20kA-1s
IEC:		62271-102 62271-103 62271-200 62271-1 61243-5
User manual DF-2 NL/F:		AG602101 / AG602201
Arc Killer DF-A NL/F:		AG646104 / AG646204

## 1.6 General safety directions and instructions.

SGC nv - SwitchGear Company. does not accept any liability for damage or injury caused by not (strictly) following the safety directions and instructions, or by negligence during the transport of the medium voltage switchgear and its (possibly) additional options.

Always wear protection gloves and other specific individual protection means (to prevent possible cuts).

In case of any specific user circumstances, or in case of any additional, fitted options, extra safety instructions may be required. Please contact SGC nv - SwitchGear Company immediately if you encounter a potential danger during the transport of the medium voltage switchgear.

**The owner / operator of the medium voltage switchgear is fully responsible at all times for observing the locally applicable safety instructions and guidelines.**

## 1.7 Transport manual usage

Anyone who transports the medium voltage switchgear, must be familiar with the contents of the transportation manual, and follow the directions contained within very closely. The owner / operator must educate the users in accordance with the transport manual and he or she must obey all directions and instructions.

- Never change the order of the required actions.
- Always keep the transport manual close to the medium voltage switchgear.

## 1.8 Pictograms and safety symbols

The pictograms, symbols and instructions applied to the medium voltage switchgear are a part of the safety equipment. They may therefore not be covered or removed, and must be present and clearly readable throughout the entire life span of the medium voltage switchgear.

- Replace or repair unreadable or damaged pictograms, symbols and instruction immediately. Contact SGC nv - SwitchGear Company for replacements.

## 1.9 Operators

The execution of the work detailed herein (transport) is strictly reserved for trained and qualified operators, who are familiar with the dangers that may arise from transporting the material.

## 1.10 Technical specifications.

- The technical specifications must not be changed.
- Modification of the medium voltage switchgear (or parts thereof) is not permitted.
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## 2 TRANSPORT

### 2.1 Packaging

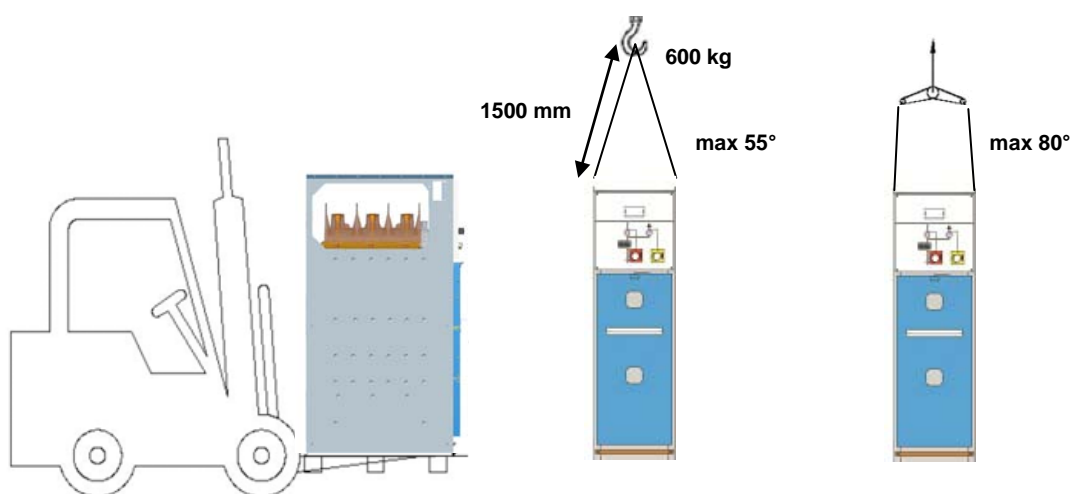
The DF-2 is delivered plastic-wrapped or in a wooden crate, and fixed onto a pallet, with packing straps. It is advised to not remove any packaging until the unit is located in its final installation position.



## 2.2 Lifting Instructions

Every unit has to be in an **upright, vertical position**, on a pallet or on the floor.

A **forklift truck** is required for operation. The unit will always be located in front of the driver in order to avoid potential damage to the front. Slings or rocker arms are also valid. These are fixed to the elevator pieces, which are located in upper area of the units, in order to pull in a vertical direction with an angle of **55 ° for slings and of 80 ° for rocker arms**. Slings should have a length of at least **3000 mm** and support a weight of at least **600 kg**.



In order to safely and securely lift the unit, use the provided **lifting eyebolts**. Secure the slings or rocker arms tightly to all four lifting eyebolts before moving the unit into its final position.

Please note the availability of 2 different **lifting eyebolts**:

Version A:



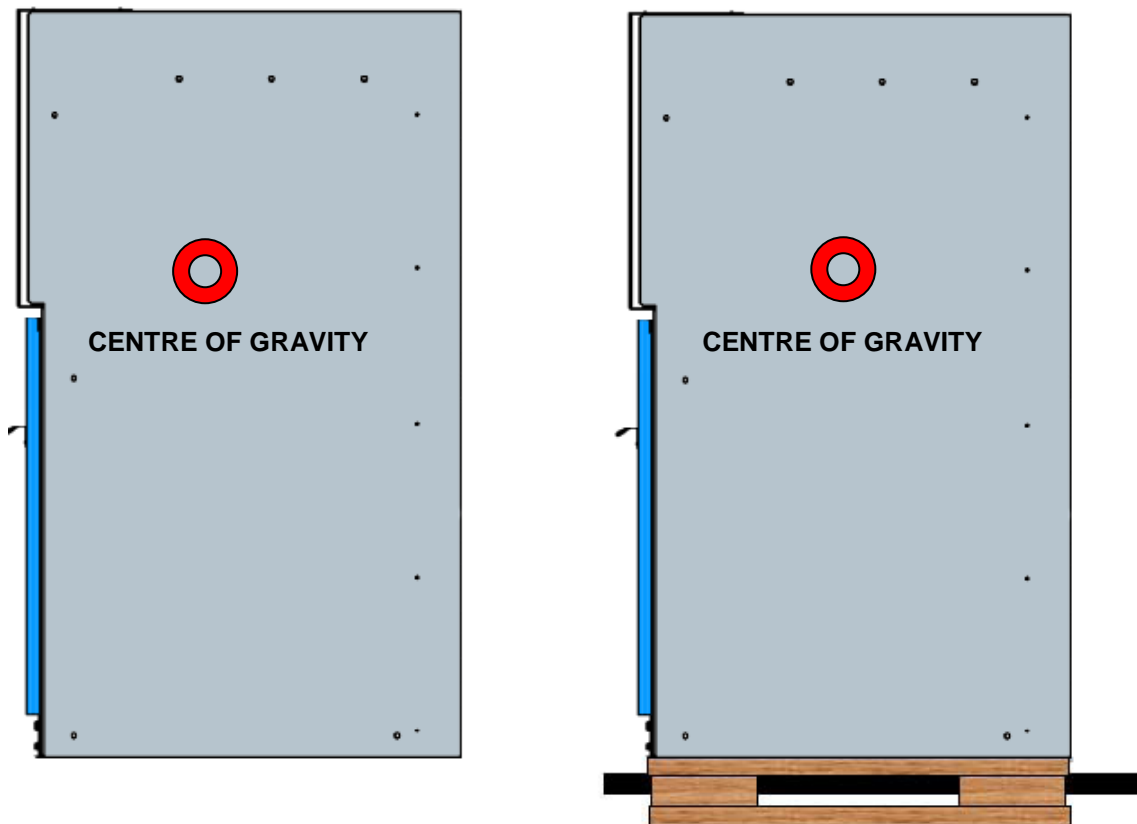


Version B: lifting eyebolts are secured using bolts:





In case of forklift truck transport, **take into account that the centre of gravity is quite high and therefore it is easy to tip over the unit:**



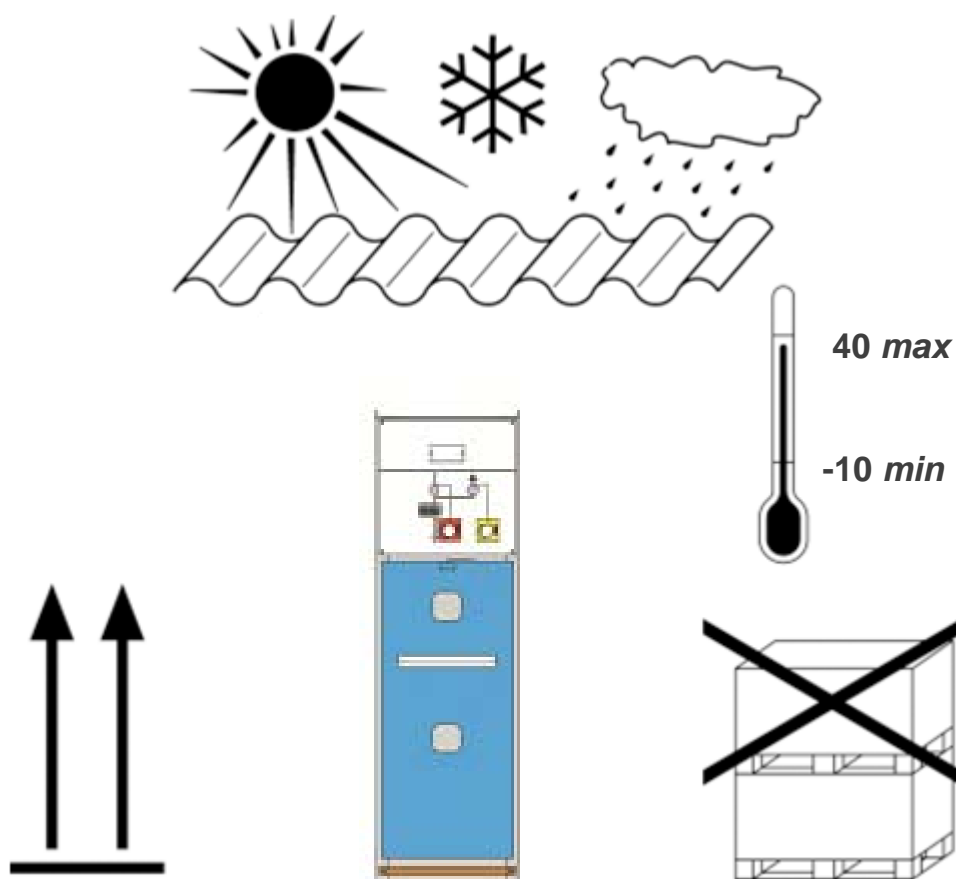


### 3 STORAGE

All units should be stored under the following conditions:

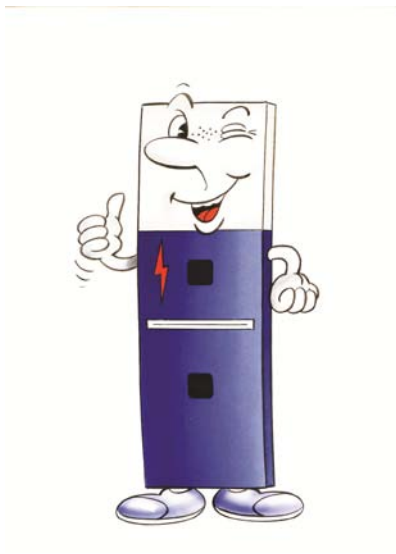
- ✓ Indoor storage
- ✓ Vertical, upright position
- ✓ Units cannot be stacked or piled up onto other units
- ✓ All units need to be protected from rain
- ✓ Units cannot be exposed to direct sunlight
- ✓ Temperature range for unit storage: -10 °C to 40 °C

After being stored and before being installed, all units need to be carefully cleaned, especially all insulating parts:









**BUIL TO LAST**