INSTRUCTION

Waste disposal and Recycling
AMXE Motors
NOTICE

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1. Introduction

1.1. General

The purpose of this document is to describe general guidelines for the disposal of the AMXE132 and AMXE200 motors.

• Actions shown in this manual are only to be performed by trained personnel authorized by ABB or authorized by the end user.

The actual appearance of the motor may vary from the illustrations in this manual, depending on the final design.

Abbreviations and nomenclature used in this manual:

• D-end or DE: Drive side of motor.
• ND-end or NDE: Non drive side of motor.
• WARNING: signal word used to indicate a potentially hazardous situation which, if not avoided, can result in death or serious injury.

Symbols used in this manual:

Caution, risk of electric shock.

Safety Alert Symbol, warns of a potential personal injury hazard.

Warning, magnetic field.

Prohibition, No access for people with active implanted cardiac devices (pace maker).
1.2. Intended application

The motor is primarily intended to be used for heavy electrical vehicle applications, as a traction motor, generator or auxiliary motor. It also fits as propulsion or auxiliary unit in Marine segment. Due to the nature of their electrical and mechanical operating conditions, improper installation or operation, as well as insufficient maintenance, could introduce hazards which could lead to severe bodily injuries or damages to property.

These instructions only consider those measures which must be observed when the motor is being operated in its operative range and in its intended application. The applicable national, local and plant regulations must also be taken into consideration.

1.3. Warranty

The warranty period is 12 months after commissioning but no later than 18 months from the date of notification of being ready for shipment. An extended warranty can be offered on request.

1.4. Information on electromagnetic compatibility

The user must take precautions during installation and operation in order not to impair the electromagnetic compatibility.

If it is necessary to replace any anti-interference components, filters or screened cables, the new parts must be identical to the originals.

1.5. Required qualifications for personnel who handle the motor

Installation, operation, maintenance and repair work may only be carried out by mechanically and electrically skilled personnel qualified and properly trained for this work. These persons must be well informed about the motor, that is, they must have completely read and fully understand the relevant chapters of these operating instructions.
1.6. Safety

The motor is manufactured and intended for use only as prescribed by this manual. Modification, alteration, or lack of maintenance procedures as described in the service manual may adversely affect the safety and efficiency of this device. The manufacturer is not responsible for malfunctions that comprise safety as a result of alteration, use of non ABB replacements parts, neglect or misuse.

Should pre-owned ABB equipment be purchased and reconditioned, the equipment should not be used until testing and analysis demonstrate that the equipment meets the original or upgraded specifications.

The use of solvents as cleaning agents and the use of lubricants can involve health and/or safety hazards. The recommended precautions and procedures stated by manufacturers should be followed.

Non-authorized modifications as well as the use of tools, components and auxiliary components not corresponding to the installation or maintenance instructions exclude any liability of the motor manufacturer.

The motor has rotating parts and parts which may be spinning even at rest, and possibly hot surfaces.

1.7. Contraindications

The motor is not designed, sold or intended for any use except as indicated above. Furthermore, it is not intended to be used outside of the motor specifications or limitations. The motor must be in good working order.

If technical modifications are considered, they shall always be approved by ABB and be carried out by qualified personnel.
2. Waste disposal and recycling

This instruction concerns the disposal and recycling of AMXE132 and AMXE200. The motors are designed in such a way that it is easy to separate different components and types of material from each other, making it easier to recycle.

**NOTE:** The methods are described in a very general way. All instructions are to be performed by personnel who are trained and skilled for the procedure.

2.1. Dismantling the motor

**Warning - Heavy Components**
Risk of personal injury when dismantling the motor. Only skilled and trained personnel should carry out dismantling.

Dismantling the motor is done by simply separating all the components of the motor. Since the motor mainly is assembled with screws and nuts, it is rather simple to carry out the dismantling. When the motor has been dismantled into its different components, the different components have to be separated and grouped together depending on material types.

2.2. Normal carbon steel

The following components are separated into one group for normal carbon steel:

1. Bearing cover
2. Locking nut
3. Bearings
4. Connection box cover/rear cover
5. Connection flange (AMXE200)
6. Rotor shaft
7. Stator end plates (support plates)
8. Motor feet
9. Retaining ring
10. Spring washer
11. Screws and bolts etc.
2.3. Electrical silicon steel non oriented

The following components are separated into one group for electric silicon steel non oriented:
1. Stator lamination
2. Rotor lamination
3. Resolver rotor/stator
These laminations are shrink fitted to respective components and can be separated by using heat.

2.4. Stainless steel

1. Cooling pipe and connectors

2.5. Nodular cast iron

1. DE-shield

2.6. Aluminum

1. Stator frame
2. Rating plates
3. NDE shield
4. Rotor end plates/rotor fan

2.7. Copper

Copper is mostly integrated in the actual components and require some effort in order to be separated. There are some special tools available to help separation but normally wedges, large hammers, gas burners and manpower is used.
The following components are separated into one group for copper:
1. Stator winding
2. Stator connection
3. Resolver winding
2.8. Metallic

1. HV connectors
2. LV connector housing

2.9. Non-Metallic

1. Parts in winding
2. Parts in connection box
3. Shaft seal
4. O-rings
5. Cable insulation
6. Parts in resolver
7. Parts in connectors

2.10. Hazardous waste

**Warning - Grease handling**
The grease from the bearings is to be considered as hazardous waste and must be taken care of according to regulations.

2.11. Permanent magnets

Magnets need to be removed and recycled. Removal is only performed in a specialized (ABB) Service Center and will be according to instructions developed for this purpose.
For more information and contact details:
www.abb.com/motors&generators