

Motor and generator services

Life cycle services – replica and capital spares for large ASEA DC motors



As the original manufacturer of old ASEA DC motors, ABB has access to the old drawings and manufacturing documents. This knowledge allows ABB to manufacture replicas of the old ASEA motors and spare parts which are identical to the original motor. As it is often very difficult to replace these large DC motors with an AC motor, the option of using a replica motor can be very attractive. ABB is also able to produce DC coils for rotors and stators, which can be beneficial in providing the best conditions for successful projects.

The need for replica motors and capital spares

ABB's motors and generators often play a critical role in the plants in which they operate. In many cases the complete process would be brought to a halt if the motor or generator stop working.

Downtime may result in considerable costs in terms of lost production, waste and damage. Therefore the availability of this equipment is a top priority.

When unexpected downtime needs to be kept a minimum, capital spares often represent the optimum investment and provide the basis for optimizing operational availability.

Using the original drawings to manufacture spares and/or complete motors also means using the approved and reliable design, often individually engineered for a specific application, which assures trouble-free operation for many years into the future.

Carrying out major overhauls on a regular basis is crucial to allowing preventative maintenance to be performed and for keeping the motors in good condition.

ABB recommends taking the rotor out of stator once every 10–15 years to carry out a major overhaul. It can be very convenient to have a spare motor to use while the original motor is out of operation for the overhaul.

Aging and reliability

All equipment are subject to aging through stress caused by factors such as operating and ambient conditions, poor maintenance, and other.

ABB equipment is highly reliable and designed for trouble-free operation over its entire lifetime. However, factors relating to aging may eventually lead to a failure.

Any unplanned stoppage is costly and component failure may result in consequential damage to vital parts, such as the stator and rotor. It is therefore very important to be fully prepared in the event a failure should occur.

The optimal capital spare for every case

A range of capital spares are available for ABB’s motors and generators. Some examples are:

- Complete spare motor/generator
- Complete rotor
- Complete stator

Determining the optimal capital spare for every case is a matter of performing a risk analysis and reviewing the specific case in consideration to the motor/generator:

- What component is subject to the greatest stress?
- What are the ambient and operating conditions?
- What are the original design parameters?
- What is the motor/generator application?

ABB’s specialists can apply their vast experience to help determine the optimal capital spare for each case by performing site surveys and motor/generator diagnostics.

Expected downtime

The table illustrates how a serious failure may affect availability and how downtime will be significantly reduced if capital spares are kept on site. Note that the table is an example only: the actual downtime depends on the motor/generator type and size.

Spares/failure expected downtime:

- No capital spare
 - Rotor failure, several months–half year
 - Stator failure, several months
- Capital spare on site
 - Rotor failure, days–weeks
 - Stator failure, days–weeks
- Complete spare motor/generator
 - Any failure, days



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Reference list

DC spares made by ABB Motor & Generators service in Sweden	
1 off motor LAN 710G	2014
1 off motor LAN 710K	2013
1 off rotor LC 2309	2013
1 off rotor LAA 1120/1250	2010
1 off rotor LAA 900/630	2008
1 off motor LA 1704	2006
1 off rotor LC 2414	2006
1 off motor LH 2208	2005
1 off rotor LC 1907	2004
1 off motor LAN 560	2002
1 off rotor LAA 1250/1000	2000
1 off rotor LA 1605	1998
1 off rotor LH 2214	1998
1 off motor LAA 1000/630	1995
1 off rotor LC 2312	1993
1 off rotor LC 2405	1991
A number of other spares like poles, coils, bearings, stators	
A number of rewinding DC rotors and DC stators	

For more information please contact:

ABB AB
Service
SE-721 74 Västerås, Sweden
+46 21 32 50 00
service.abb@se.abb.com

www.abb.com/service
www.abb.com/motors&generators