ACS 6000 AC Drive
Preventive maintenance

FACT FILE

SPD27 EN REVA 2004

Service Notes

ABB recommends regular maintenance for AC drives throughout their lifetime in order to ensure maximum availability and to eliminate unplanned and unbudgeted repair costs.
Drives preventive maintenance service aims for increased reliability, optimized performance and extended lifetime. This service consists of annual drive inspections and component replacements according to a product specific maintenance schedule.

Drives preventive maintenance is based on ABB's extensive knowledge and experience in manufacturing and maintaining AC drives for more than 30 years and takes environmental and operational conditions into account. Qualified and certified drives specialists perform on-site preventive maintenance work.

Benefits

- Increased drive reliability
- Optimized maintenance costs and minimized repair costs
- Easy-to-plan maintenance budget
- Extended drive lifetime
- Genuine, factory-certified ABB parts

Service scope

Preventive maintenance service includes labor and service parts to perform on-site maintenance work according to the maintenance schedule:

- Visual inspection of the electrical drive and its environmental conditions
- Inspection of the drive parameters and optimization when needed
- Inspection of drive protection and monitoring
- Inspection of the power and control terminal connections
- Inspection of the optic fibers
- Functional inspection of the cooling system and replacement of the parts according maintenance schedule
- Functional testing of the drive under normal conditions and/or test conditions
- Inspection of the drive spare part inventory including function check of boards

A detailed service report, including recommendations for future actions, is provided once the maintenance work has been completed and inspection data fully analyzed.

Preparations before preventive maintenance

Successful preventive maintenance depends on the information recorded on the service reports and provided by the end user. Usually, the benefits of preventive maintenance increase in direct proportion to the quality of the information provided. This is especially true if the drive has not been inspected and serviced annually according to the maintenance schedule.

In order to perform the maintenance work, ABB must have free access to the drive for the duration of the shutdown as agreed. Preventive maintenance must be planned well in advance in order to reserve the resources and service parts needed.

Product Lifecycle Services

- Installation & Commissioning
- Training
- Support & Remote Services
- Spare Parts & Repairs
- Maintenance & Field Services
- Migration & Retrofits
- Optimization

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Maintenance schedule

It is a common belief that electronic equipment does not require regular maintenance. However, based on ABB's experience, the failure probability of electrical equipment increases with its age. With electric drives this is typically after 5 to 10 years. The main cause is the aging of components but operational conditions are also influential. A component failure may cause consequential damage to other parts of the drive including power semiconductors.

A maintenance schedule provides systematic and functional means of maintaining ACS 6000 drives. It is based on extensive experience and know-how in manufacturing and maintaining electric drives. The specifications of component suppliers are also carefully observed.

Environmental and operational conditions of the drive are also considered. A demanding environment with, for example, a high ambient temperature or heavy load, can measurably shorten component lifetime and thereby maintenance and component replacement intervals.

ABB recommends that an annual inspection be carried out to ensure optimum drive performance throughout its entire lifetime.

	Years from start-up																			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Start-up	P																				
Cooling																					
➢ Air Filters		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
➢ Cooling fan (if installed)		I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R
➢ De-ionizer and mech. filters		I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R
➢ Cooling pump seals		I	I	I	R	I	-	I	I	I	R	I	-	I	I	I	R	I	-	I	I
➢ Cooling pumps		I	I	I	I	I	R	I	I	I	I	I	R	I	I	I	I	I	R	I	I
➢ Heat exchanger		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Aux Cooling fan (if installed)		I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R
Aging																					
➢ Battery of UPS (if installed)		I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R
Connections & Surroundings																					
➢ Cable and DC Bus connection torques		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Dustiness, corrosion and temperature		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Improvements																					
➢ SW / HW upgrade		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Based on product notes		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Measurements																					
➢ Basic measurements with aux supply voltage / control of protection settings		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
➢ Optical connected boards with transmitter		I	I	I	I	I	I	I	P	I	P	I	R	I	I	I	I	I	I	I	I
➢ Fiber optic cables		I	I	I	I	I	I	I	I	I	P	I	R	I	I	I	I	I	I	I	I
➢ Clamp capacitors		I	I	I	I	I	I	I	P	I	I	I	P	I	I	I	P	I	I	I	P
➢ Snubber capacitors		I	I	I	I	I	I	I	P	I	I	I	P	I	I	I	P	I	I	I	P
➢ DC capacitors (CBU)		I	I	I	I	I	I	I	P	I	I	I	P	I	I	I	P	I	I	I	P
Spare Parts																					
➢ Spare Parts		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I

Legend:
R = Replacement of component
I = Inspection (visual inspection, correction and replacement if needed)
P = Performance of on-site work (commissioning, tests, measurements, etc.)

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