

Drives Repair Center

***Drives Repair Center  
New Berlin, Wisconsin***



Dedicated in 2001 the ABB New Berlin, WI, repair facility covers more than 24,000 square feet. It includes a heat room, dedicated cleaning area, and over 200 load motors with a combined capacity of 1,500 HP.

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## ***Drives Repair and Exchange Services***

ABB's Drives Repair Center at New Berlin, Wisconsin, delivers:

- Diagnoses and recommendations from ABB certified and factory trained technicians
- Quick repairs and exchanges, usually less than 10 days for repairs and less than 48 hours for exchanges
- Fault-finding reports and analyses
- Cleaning and preventative maintenance
- ISO-certified services



Fully tested exchange drives.

### *Summary of Services*

	<b>Standard Repair (see p. 3)</b>	<b>Emergency Repair (see p. 5)</b>	<b>Exchange (see p. 9)</b>
<b>Turn-around</b>	10 -15 business days	1 to 5 business days	1 to 3 business days
<b>Fault-finding reports and analyses</b>	Standard report (included) Contamination and corrosion analysis (additional)	Standard report (included) Contamination and corrosion analysis (additional)	Standard report (on request) Contamination and corrosion analysis (additional)
<b>Warranty</b>	12 months	12 months	12 months
<b>Cleaning and preventative maintenance</b>	Available for operating units only; no warranty		

## ***Drives Service***

The ABB Drives Repair Center completes most drive repairs in just 10 to 15 business days, ensuring minimal downtime.

The repair service begins with cleaning, visual inspection, troubleshooting, and measurements, leading to a full fault-finding analysis, repair, and functional test. All repairs are automatically upgraded to the latest software version, according to the manufacturer's instructions, unless the customer instructs otherwise.

A repair report always accompanies the repaired unit. Additional copies are available upon request.



Together, ABB certified and factory trained technicians offer more than 100 years of experience.

### **Drives Supported**

- ACS/ACH400
- ACS/ACH500
- ACS/ACH550
- ACS600
- ACS800
- ACV700
- Multi-Drive
- SAMI A and B
- SamiStar (Sami-F)
- AAD
- AND
- DKH
- DRH
- DCF500
- DCF600
- DCS400
- DCS500
- DCS600
- PARAJUST
- PAD

The Drives Repair Center also services legacy products (including SamiStar, ACV700, PAD and AAD) as a preventative maintenance measure. For details, see the "Preventative Maintenance" section of this document.

## Drives Repair Center

### Speed of Service

For most drives (ACS400, ACS500, ACS600, Phase Modules, DCS400, and DCS500), the maximum repair time is 10 business days after ABB receives the item.

For larger drives (ACV700, SamiStar, and some DC product lines), the maximum repair time is 15 business days after ABB receives the item.

The Drives Repair Center constantly works to shorten cycle times. If more time is needed (for example, if a component is temporarily not available) or if a unit isn't repairable, the Drives Repair Center contacts the customer as soon as possible and offers alternative solutions.

### The Repair Report

The repair report provides the following information:

- Initial inspection observation
- Findings during the cleaning process
- All defective components
- Testing methods
- Most probable cause of failure
- Recommendations for preventative maintenance

### Summary of Service

- Fault finding (including visual inspection and cleaning)
- Repair work, according to the manufacturer's instructions
- Original ABB spare parts and components when needed
- Upgrading to the latest software version according to the manufacturer's instructions, unless the Drives Repair Center is instructed otherwise
- Functional test in accordance with the manufacturer's instructions
- Repair report
- Sticker of approval
- 12-month warranty
- ESD package (for printed circuit boards)

**Repair Price:** As quoted at the order point  
**Repair Complete:** 10 to 15 business days after receiving the item  
**Warranty Period:** 12 months from date of shipment from ABB

## ***Emergency Repair Service***

Emergency Repair Service is available if a drive or printed circuit board must be repaired in the shortest possible time and no exchange drive or circuit board is available. The defective item is repaired, tested, and returned within one to five business days. An additional fee is charged for all emergency repairs. Emergency Repair must be requested at the order point, so the Drives Repair Center can reserve the necessary resources and components.

**Repair Price:** As quoted at the order point  
**Repair Complete:** 1-5 business days (after receiving the defective item)  
**Warranty Period:** 12 months from date of shipment from ABB  
**Note:** Please clearly mark the shipping container (preferably in big red letters): FOR EMERGENCY REPAIR.

### **Initiating a Repair Request**

- 1.) To avoid any unnecessary delays, call 1-800-HELP-365, option 4, option 2 to obtain a Return Material Authorization Number (RMA#) before shipping any part to us for repair. Clearly identify shipments by placing the issued RMA# on all paperwork and on the outside of the package.
- 2.) Provide as much information as possible about how the failure occurred, including the fault code on the display. When additional information is required, one of ABB's factory-trained technicians will contact the customer.
- 3.) Send all shipments pre-paid to the address below:

**ABB Inc.  
Product Service & Repair  
5000 S. Emmer Drive  
New Berlin, WI 53151  
Attn: RMA#**

- 4.) If emergency repairs were requested at the time of order, the address label *must* state: FOR EMERGENCY REPAIR.

## Drives Repair Center

### Terms

- Collect freight will be refused.
- Repaired drives are equipped with a tag of approval from the Drives Repair Center. Any unauthorized work or modification performed on the drive or circuit board while under the warranty period automatically voids the warranty. If an item shows evidence of being repaired by any unauthorized party, it will not be accepted for exchange, and ABB will charge the price difference between a new spare part and the exchange unit.
- If the Drives Repair Center finds that the drive or circuit card failed because of misuse or application-related problems, we will charge for the repair according to the repair price list.
- The delivery and payment terms are the same as agreed for new spare part orders.

### Price list

The published price list of January 1, 2003, is valid until further notice. This list is typically revised yearly. Repair service and exchange unit prices are also available at [www.abb.com/us](http://www.abb.com/us). The "Y" prefix indicates a repair service; the "EXC" prefix indicates an exchange unit. ABB reserves the right to make changes to the price list at any time.

### Warranty

The warranty period on an exchange drive and all repair orders is twelve (12) months from the date of the shipment from ABB. For an exchange drive or circuit board repair, the warranty covers the entire unit. All warranty work is performed by ABB at the Drives Repair Center. However, *ABB warrants against defects in material and workmanship only*. If a repaired or exchange drive or circuit board fails during the warranty period, a Return Material Authorization number (RMA#) is issued for returning the defective product pre-paid to ABB.

## Non-Repairable Units

The Drives Repair Center strives to guarantee high quality and functionality for all items we repair. Therefore, we only repair items that will meet our quality standards after the repairs are completed. The most common reasons why a unit is found “not repairable” are:

- **Mechanical damage** – Resulting from freight damage or miss-handling on site
- **Electrical damage** – Resulting from fire, electrical surge, etc.
- **Oxidation/corrosion** – Resulting from environmental conditions
- **Old revision** – When aging components are no longer available
- **Previously repaired elsewhere** – When repairs have been made at unauthorized third party repair centers

If an item is declared to be not repairable, the Drives Repair Center immediately informs the customer. If the reason is visible (corrosion, electrical damage, etc.), we take a digital photo of the problem area and e-mail the photo together with the repair report. Whenever possible, the Drives Repair Center offers alternative solutions; for example, a refurbished spare part or a similar new spare part. We also offer to dispose of the item at our premises and take care of the recycling free of charge.

## No Fault Found Repairs

If the Drives Repair Center can't find any problems with a unit returned for repair, more information is requested, including as many field-related symptoms (both application and environmental) as possible. This information is used to perform a more specific test on the unit.

If the unit passes all tests with very few or no components replaced (as defined by ABB), the Drives Repair Center returns the unit. The customer can either (a) pay for a clean and test charge only, without a repair warranty, or (b) pay the full repair charge which includes a 12-month warranty from the date of shipment from ABB.

## **Exchange Services**

Exchange service is the fastest and the most convenient way to fix a printed circuit board or a drive: exchanges are available immediately or within 48 hours of the order. (Special requirements may delay shipment for up to 72 hours maximum.)

As soon as a problem is reported, the Drives Repair Center ships out a refurbished drive or circuit card (subject to availability). The defective, but repairable unit must be returned to ABB within 10 days, items not returned within this time period will be subjected to additional charges. . A Return Material Authorization (RMA) number is required for all exchanges.

A detailed fault analysis report on the defective unit is available upon request.

ADD ImageFully tested exchange drives.

### **Exchange Availability**

Exchange Drives are available for:

ACS601-0006-4	ACS601-0030-2	ACS401601132
ACS601-0006-2	ACS601-0040-4	ACS401601632
ACS601-0009-4	ACS601-0040-2	ACS401602032
ACS601-0009-2	ACS601-0050-4	ACS401602532
ACS601-0011-4	ACS601-0060-4	ACS401603032
ACS601-0011-2	ACS601-0070-4	ACS401604132
ACS601-0016-4	ACS601-0100-4	ACH401600532
ACS601-0016-2	ACH401606032	ACH401600632
ACS601-0020-4	ACH401607032	ACH401601132
ACS601-0020-2	ACH401610032	ACH401601632
ACS601-0025-4	ACS401600432	ACH401602032
ACS601-0025-2	ACS401600532	ACH401603032
ACS601-0030-4	ACS401600632	ACH401604132

Most drives are available in the IP21-class; conformal coating must be specified. All drives are equipped with the following components:

- NAMC-03 or NAMC-11 (delivered with all requested software)
- Keypad
- 12-month warranty

## Drives Repair Center

The following exchange parts are available:

<b>PART NUMBER</b>	<b>DESCRIPTION</b>
U GOP3	GOP3, CONTROL PANEL
U34518050	AOS2.1, ADVANCED OPERATR
U57411431	SAFT-112POW, POWER SUPPLY
U57411449	SAFT-113POW, POWER SUPPLY
U57411490	SAFT-120PAC, PULSE AMP BD
U57411503	SAFT-121PAC, PULSE AMP BD
U57411511	SAFT 122 PAC, PULSE AMP,
U57411520	SAFT-123PAC, PULSE AMP BD
U57411562	SAFT-127CHC, CHOPPER,
U57776013	SAFT-173TSI, TACH SER.
U57777290	SAFT-103CON, CONTROL BD
U58095117	SAFT-168PAC, PULSE AMPLIF.
U58125121	SAFT-189TSI, TACH SER.COMM
U58130435	SAFT-190APC, POWER CONN.CD
U61001395	SNAT-602TAC, TERM BLK CD
U61007041	SNAT-603CNT, MOTR CNTRL BD
U61027769	SNAT-607MCI, MAIN CKT INT.
U61049444	SNAT-633PAC, PULSE AMPLIF.
U61049452	SNAT-634PAC, PULSE AMP,
U61073779	SNAT-609TAI, TACH INTRF CD
U58122203	SAFT-187CON, CONTROL BD
U58125067	SAFT-188IOC, INPUT, OUTPUT BD
U61218289	SNAT-617CHC, CHOPPER BD

### Scope of Services

- A printed circuit board or a complete drive, repaired and tested according to the manufacturer's specifications
- An ESD package (for circuit boards only )
- Upgrading of the exchange unit to the latest software version according to the manufacturer's instructions, unless the Drives Repair Center is instructed otherwise

<b>Exchange Unit Price:</b>	As quoted at the order point
<b>Exchange Complete:</b>	Within 48 hours from the date of order
<b>Delivery Terms:</b>	Defective unit received at ABB within 10 business days from the date of order
<b>Warranty Period:</b>	12 months from date of shipment from ABB
<b>Note:</b>	If the defective unit is not returned to the Drives Repair Center within the specified time, the customer is invoiced the list price for the exchange unit. If the defective unit is not repairable, ABB reserves the right to invoice the price difference between a new part and the exchange part.

## ***Cleaning and Preventative Maintenance Only***

*The ABB Drives Repair Center has a cleaning and preventative maintenance only service.*

If ABB equipment is in operating condition and requires cleaning, the Drives Repair Center will clean it and also replace any board level components that could fail due to aging. The cleaning and preventative process is intended to greatly reduce the likelihood of random failures as components age. Please contact the Repair Center for pricing.

This service doesn't apply to equipment with existing operational problems, and provides no expressed or implied warranty.

### **Scope of Services**

- Disassembly and cleaning of heat sink and all printed circuit cards
- Replacement of any components on circuit cards that could fail due to age
- Upgrades
- Re-assembly back to factory specifications
- Saving of any OEM specific software
- Full factory test using appropriate load
- Packaging and return of equipment

**Service Price:** As quoted at the order point  
**Service Complete:** Within 10 business days from date of order  
**Warranty Period:** No warranty provided



**BEFORE**



**AFTER**

## ***Contamination and Corrosion Analysis Service***

The Contamination and Corrosion Analysis service provides more detailed information about possible problems caused by environmental conditions.

Samples are taken from the circuit board or drive and analyzed to find impurities that might affect the unit's functionality. We evaluate information on the application of the drive as well as the environmental conditions where the unit was used.

The analysis service includes instructions on how to prevent similar damage in the future.

### **Repair Report Versus Contamination and Corrosion Analysis**

- The repair *report* suggests a most probable cause of failure conclusion.
- The contamination and corrosion *analysis* pinpoints the actual root cause of the failure.

### **Scope of Services**

- A detailed analysis of the impurities and their possible effects on functionality

<b>Analysis Price:</b>	As quoted at the order point
<b>Analysis Complete:</b>	Within 15 business days from date of order
<b>Warranty Period:</b>	No warranty provided
<b>NOTE:</b>	The price of the Contamination and Corrosion Analysis service does not include any repair work. An independent lab typically performs this service. The price covers actual lab charges plus administration.