Allen Bradley 1394 Digital Servo Control

Below is Northline Industrial’s 1394 Digital AC Servo System. This diagnostic system is comprised of the main system module, four axis amplifier modules (each with associated servo motors), and all necessary power and feed back cables. This 1394 test fixture allows dynamic testing of both the GML digital and digital Turbo system modules, as well as the analog types. Please contact Northline for all of your Allen Bradley 1394 repair needs.

Capabilities Include:

Main Controllers
1394-SJT05-A/C/T-XX
1394-SJT10-A/C/T-XX
1394-SJT22-A/C/T-XX
1394C-SJT05-A/C/T-XX
1394C-SJT10-A/C/T-XX
1394C-SJT22-A/C/T-XX

Axis Modules
1394 AM-XX
1394C AM-XX

AC Servo Motors
1326AS-XXXX
1326AB-XXXX

Contact your Northline sales representative for all of your repair needs.
Allen Bradley MP Series servo motors are a premium permanent magnet Rotary Servo Motor with a high resolution encoder and optional brake. These compact brushless servo motors are installed in many automated applications demanding high performance motion systems.

This series of servo motors is typically used with the Allen-Bradley Kinetix® 6000, Kinetix 6200, Kinetix 6500, Kinetix 300, Kinetix 350 as well as the Ultra 3000 servo drive families.

Northline has developed dynamic testing for the MP, MPL and MPF Allen Bradley Series Servo Motors. This is a powered dynamic test that includes confirmation of the encoder alignment and torque / speed viability. We also perform thermal or vibration analysis testing upon request. Northline is able to support repair and testing of all sizes within this Allen Bradley MP series.

Contact your Northline sales representative for all of your AB MP Series servo motor repair needs.
This is Northline Industrials “Fanuc Powermate D Control System”. It was designed to be used as a CNC control for multiple series of Fanuc servo drive systems with either the “Type A” or “Type B” PWM signal control interfaces. Legacy drives as old as the A06B-6057 “L Series” types and newer types such as the A06B-6093 “Beta” servo drives can all be tested with this newly developed Fanuc NC control system. In addition, this system can control either the 200V standard or 400V HV types of devices.

Contact your Northline sales representative for all of your Fanuc Powermate D repair needs.
Northline Industrial introduces repair and testing capabilities on our uniquely designed Fanuc Powermate Series test station. This extremely flexible test system has the ability to dynamically test almost all of the Fanuc A06B family of power supplies, spindle and servo amplifiers including Fanuc’s fiber-optic controlled equipment. This encompasses hundreds of model numbers and allows for full load, closed-loop simulation of factory conditions. Please contact us if you have questions about our testing procedures or the types of equipment we can repair for you.

Capabilities Include:

A06B-6057  A06B-6096
A06B-6058  A06B-6097
A06B-6066  A06B-6098
A06B-6077  A06B-6102
A06B-6078  A06B-6110
A06B-6079  A06B-6111
A06B-6080  A06B-6114
A06B-6081  A06B-6117
A06B-6082  A06B-6120
A06B-6083  A06B-6121
A06B-6085  A06B-6124
A06B-6087  A06B-6127
A06B-6088  A06B-6140
A06B-6089  A06B-6141
A06B-6090  A06B-6150
A06B-6091  A06B-6151
A06B-6092
A06B-6093

Contact your Northline sales representative for all of your Fanuc Powermate CNC repair needs.
This is Northline Industrials new “Fanuc Powermate D Servo System” built for our North Carolina Repair lab. It was designed to be used as a CNC control system for dynamically testing multiple series of Fanuc servo amplifiers with either the “Type A” or “Type B” PWM signal control interfaces. This system covers the Fanuc 200V Series of drive models listed below. Please contact Northline for all your Fanuc servo amplifier repair needs.

**Fanuc 200V Amplifiers**
- A06B-6057-HXXX
- A06B-6058-HXXX
- A06B-6066-HXXX
- A06B-6079-HXXX
- A06B-6080-HXXX
- A06B-6089-HXXX
- A06B-6090-HXXX
- A06B-6093-HXXX

Contact your Northline sales representative for all of your Fanuc Powermate D repair needs.
This is Northline Industrials “Fanuc Powermate Di Control System”. It was designed to be used as a CNC control for multiple series of Fanuc servo drive systems with the Fanuc fiber optic “FSSB” servo control interface. This system can control the older Alpha “6096” series of FSSB servo drives as well as the new Alpha i Series. In addition, this new Fanuc Alpha i control system is equipped with an integrated AC serial spindle control. Either serial or fiber optic spindles can be fully tested with this system. As always, this system can control either the 200V standard or 400V HV types of devices.

Capabilities Include:
A06B-6077
A06B-6078
A06B-6081
A06B-6082
A06B-6083
A06B-6087
A06B-6088
A06B-6091
A06B-6092
A06B-6093
A06B-6096
A06B-6097
A06B-6098
A06B-6102

Contact your Northline sales representative for all of your Fanuc Powermate Di repair needs.
Northline is first as always with the latest Fanuc CNC repair capability. The Fanuc 30i-B Servo system offers a totally integrated range of drives and motors. Simple maintenance, high quality, compact design and exceptional performance are key factors inherent in their design. High efficiency drive components, power source regeneration and cycle time reduction features combine to reduce energy usage by as much as 30% to 50%. Northline can repair and test your 30iB Equipment!

Contact your Northline sales representative for all of your Fanuc 30i-B Servo repair needs.
Below is Northline Industrial’s newest repair capability, the Yaskawa Sigma Series diagnostic test system. This test system was designed with a modular support concept that allows for quick and efficient set up. The Yaskawa SigmaWin+ software allows for thorough analysis of the drives operational functions. This extremely flexible system allows for multiple support voltages encompassed within the Sigma I, II, III & V series and provides a dynamic system test of the amplifiers. Contact Northline Industrial for all of your Yaskawa repair needs.

Sigma I: SGDA and SGDB
Sigma II: SGDH and SGDM
Sigma III: SGDS
Sigma V: SGDV
Display Repair

Automation Repair and Sales
Electronics
Robotics
Servo motors
Spindle Motors
CNC
HMI / Displays
Operator Stations
Monitors
PLCs
Light Curtains
Inverter Drives
AC/DC Drives
Welders
Process Controls

Capabilities Include:
CRT
LCD
Plasma
Touch Screens
Backlight
Inverter
Powersupply

BEFORE
Failing dimly lit display

AFTER
Bright Display with Warranty

Manufacturers Supported:

- ABB
- Advantage Electronics
- Allen Bradley
- Automation Direct
- Buehler
- Cincinnati Milacron
- Modicon
- Cutler Hammer
- GE Fanuc
- KME
- Kristel
- Mass Multimedia
- Motorola
- Nortech Engineering
- ProFace
- Proto Trak
- Samsung
- Siemens
- Selti Elettronica
- Sharp
- Star
- TCP Total Control Products
- Tecnel
- Toshiba
- Totoku Electric Co.
- Wells- Gardner Electric
- Excel

Contact your Northline sales representative for all of your display repair needs.

Northline Industrial, Inc.
12238 Woodbine
Redford, MI 48239
www.northlineindustrial.com

Phone: 313-537-9798
Fax: 313-537-9895
Email: info@northlineindustrial.com
Remanufactured Spares on Ebay
Automation Repair and Sales

Northline has the repair and test capabilities on the following Manufacturers and Series:

**Contact your Northline sales representative for all of your Display Repair needs.**

<table>
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<td>Nortech Engineering</td>
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Yaskawa Sigma II Servo Motor Repair (200V Class)

Below is Northline Industrial’s newest repair capability, the Yaskawa Sigma II series test system. It was designed to dynamically test various Sigma II associated AC servo motors. There are many Yaskawa servo motor types that can be tested with this system including: SGMAH, SGMPH, SGMGH, SGMSH, SHMUH & SGMBH types of servo motors.

Capabilities Include:

- SGMAH
- SGMPH
- SGMGH
- SGMSH
- SGMUH
- SGMBH

Contact your Northline sales representative for all of your Yaskawa servo motor repair needs.
Yaskawa Sigma V Series AC Servo Motors

These are the **Yaskawa Sigma V** series or AC servo motors. They are the latest generation of Yaskawa Sigma series motion control automation. The Sigma V series has far more options and features than previous versions of Sigma products. Contact Northline Industrial for all of your Sigma V servo motor repair needs.

**Capabilities Include:**

- **Rotary**
  - SGMMV
  - SGMJV
  - SGMAV
  - SGMGV
  - SGMSV

- **Direct**
  - SGMCS

- **Linear**
  - SGLGW
  - SGLFW
  - SGLTW

Contact your Northline sales representative for all of your repair needs.
This is the **Yaskawa Sigma V** AC 200V servo system. It is the latest version of the Yaskawa Sigma Series of motion control servo motors and amplifiers. Many of the Yaskawa Sigma series are backwards compatible thusly allowing upgrades from previous versions of the Sigma series a snap! The Yaskawa Sigma V series offers more features and options than previous Sigma series versions.

**Capabilities Include:**

**200V Types**

- SGDV-R70
- SGDV-R90
- SGDV-1R6
- SGDV-2R8
- SGDV-3R8
- SGDV-5R5
- SGDV-7R6
- SGDV-120
- SGDV-180
- SGDV-200
- SGDV-330
- SGDV-470
- SGDV-550
- SGDV-590
- SGDV-780

Contact your Northline sales representative for all of your repair needs.
The Mitsubishi MDS (Servo/Spindle) drive units are widely used in the machine tool industry. In response to the increased need for a quality repair source, Northline has developed the Mitsubishi MDS 200V Series/C64 CNC Diagnostic Test System. This system allows us to dynamically test Mitsubishi servo, spindle, and power supply units. It’s design allows for quick parts substitutions and full functional-testing as a definitive check of a quality repair.

Capabilities Include:

- MDS-B-CV-XXX
- MDS-B-CVE-XXX
- MDS-B-V1-XX
- MDS-B-V2-XXXX
- MDS-B-SP-XXX
- MDS-C1-CV-XXX
- MDS-C1-V1-XX
- MDS-C1-V2-XXXX
- MDS-C1-SP-XXX

Currently setting up for the:

- MDS-CH-V1-XX
- MDS-CH-V2-XXXX

Contact your Northline sales representative for all of your repair needs.
Mitsubishi MDS-CH 400V Servo Diagnostic Test System

The Mitsubishi MDS (Servo/Spindle) drive series are widely used in the machine tool industry. In response to the increased need for a quality repair source, Northline has developed the Mitsubishi MDS-CH 400V Series / C64 CNC Diagnostic Test System. This system allows us to dynamically test Mitsubishi MDS-CH 400V servo, spindle and power supply units. It’s design allows for quick parts substitutions as well as full functional-testing for a definitive check of a quality repair.

Capabilities Include:

- **MDS-CH-V1-XX** Single Axis Servo Amplifier Module
- **MDS-CH-V2-XX/XX** Dual Axis Servo Amplifier Module
- **MDS-CH-CV-XXX** Power Supply Module
- **MDS-CH-SP(H)-XXX** Spindle Amplifier Module (Limited Testing Capability)

Contact your Northline sales representative for all of your Mitsubishi repair needs.
Northline Industrial is pleased to announce the repair capability for the Mitsubishi MR-HXXX-AN servo amplifiers. The MR-H’s servo settling time has been sharply reduced when compared to conventional servo systems. The ability of the MR-H to respond quickly and precisely to a reference change is due to the high-performance. The MR-H has the most stable performance at low speed in its class of devices. This is made possible through the application of a high-resolution serial encoder and the model-reference adaptive control theory. This low speed performance makes the MR-H well suited for low speed machining operations.

Contact your Northline sales representative for all of your Mitsubishi servo amplifier repair needs.
The Mitsubishi Melservo MR-J2S Super Series is a legacy AC servo amplifier and rotatory servo motor system that is advanced and flexible. Northline now offers repair on these MR-J2S servo amplifiers that helps avoid retrofitting and upgrades that are expensive and also create unwanted production downtime. In response to a need for a quality repair source, Northline has engineered a dynamic and full functional testing system as a definitive check of a quality repair. Call Northline if you need repair support on the Mitsubishi Melservo MR-J2S series.

Capabilities Include:

- MR-J2S-XXXA
- Melservo Amplifier Series
- HC-SFSXXXX
- AC Servo Motor

Contact your Northline sales representative for all of your repair needs.
Northline is proud to offer repair of your precision, high speed, high frequency, and belt driven spindles—serving the automotive, machine tool, and aerospace industries. Northline can improve your capabilities and productivity and lower your maintenance costs. Skilled technicians will provide quality repairs promptly and accurately with complete diagnostic documentation.

- In-depth Inspection/analysis
- Written Repair Quotes
- Obsolete Parts Manufactured
- Precision Surface Grinding
- Worn component replacement
- Vibration Analysis
- Comprehensive Final Analysis
- Vibration Spectrum Reporting
- SKF Certified Technicians
- Routine & Emergency rebuilds
- Custom Modifications
- Fast Turnaround, Guaranteed Quality

Contact your Northline sales representative for all of your Spindle repair needs.
Servo Motor Testing

In an evolving effort to improve quality and reliability of our repairs, Northline Industrial has added 2 test systems to our arsenal.

The Mitchell TI-3000 is an industry standard for run testing servo feedback motors. This system allows run testing of multiple manufacturers on a common drive system using a patented Commutation Converter technology. Used to confirm alignment and feedback confirmation with a dynamic test.

The Baker Instrument Company ST106E is a Surge and DC Hipot tester in one. As a test to measure voltage and current leak, this unit allows us to test integrity of AC Stators, DC field coils, DC armatures, Synchronous motors, generators as well as a myriad of coils and Motor windings. Used before and after repair as predictive maintenance tool.

Capabilities Include:

- Surge Testing
- DC Hipot
- Meg-OHM
- Voltage & Current leak Measurement
- Feed Back Alignment
- Increment encoders
- Serial Encoders
- Resolver Feedback

Contact your Northline sales representative for all of your Servo Motor Repair needs.
An experienced technician is assigned the responsibility of servicing your repair; they will perform a number of computer, mechanical as well as technical base steps. Each repair goes through a systematic process: disassembling, cleaning, evaluating, assembling, aligning/synchronizing & testing. Once the technician has completed the repair, it is sent to quality control (QC) for final inspection and testing. A summarized report accompanies each job & outlines the initial test results at incoming, replacement & repair of defective components, cause of failure, bench & system test results. Common Manufacturers Supported:

- Allen Bradley
- ABB
- AEG
- Baumuller
- Bautz
- Cincinnati Milacron
- Elmo
- Emerson
- Fanuc
- Fuji
- Gettys
- Gould
- Giddings & Lewis
- Giddings & Lewis
- Indramat
- Industrial Drive
- Kollmorgen
- Lenze
- Mitsubishi
- Moog
- MTS
- Pacific Scientific
- Panasonic
- Parker
- Siemens
- Yaskawa
- Whedco

Contact your Northline sales representative for all of your Servo Motor Repair needs.
## Automation Repair and Sales

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<td>TTBL Series</td>
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</table>

Contact your Northline sales representative for all of your Servo Motor Repair needs.
This is Northline Industrial’s Siemens 611 AC Servo Control System. This system was designed to provide all the necessary life support for larger Siemens 6SN1145 and 6SN1123 infeed and power modules. The test station utilizes an integral “Siemens 611 Universal” control card that is capable of controlling up to two servos, spindle or induction axis. All facets of the 611 Universal card can be properly tested. There are dozens of 6SN1118 control cards for the 611 series and Northline is continually adding more cards to our dynamic testing capabilities. This system is used in conjunction with Northline’s “Dynamic Load System” in order to ensure a quality repair every time. Please contact us if you have questions about our testing procedures or the types of equipment we can repair for you.

Contact your Northline sales representative for all of your Siemens 611 repair needs.
Siemens Drive-Cliq Servo Motors

**Automation Repair and Sales**
- Electronics
- Robotics
- Servo motors
- Spindle Motors
- CNC
- HMI / Displays
- Operator Stations
- Monitors
- PLCs
- Light Curtains
- Inverter Drives
- AC/DC Drives
- Welders
- Process Controls

**Capabilities Include:**

Motors used on:
- SINAMICS S120 Drive System

Paul - Do you know a few Motor Part#'s that have this Drive CLIQ?

DRIVE-CliQ is an open encoder interface. This enables users to select the measuring system that is perfectly tailored to their application. Encoders that use new measuring techniques (such as magnetic / inductive systems, magnetostrictive sensors, lasers) can also be connected through DRIVE-CliQ. DRIVE CLIQ motors and encoders information is automatically programed into the drive.

Northline has invested in the hardware needed to perform a full system test of Siemens Drive-Cliq Motor and Interface. Choose Northline for your quality repair partner.

Contact your Northline sales representative for all of your servo motor repair needs.
This is Northline Industrial’s Siemens PM240 Power Module Test Rig. The PM240 Power Modules belong to the modular family of SINAMICS G120 inverters. A modular inverter is comprised of a Control Unit and Power Module. The PM240 Power Modules are designed for line voltages of 3 AC 380 V - 480 V. (This PM module is used to Test the inverter(What Type) and Control Units?) Please contact us if you have questions about our testing procedures or the types of equipment we can repair for you.

Capabilities Include:

- Control Units
  - CU230P-2
  - CU240B-2
  - CU240E
  - CU240E-2
  - CU240S
  - CU250S-2

- Inverters
  - FSA
  - FSB
  - FSC
  - FSD
  - FSE
  - FSF
  - FSGX

Contact your Northline sales representative for all of your Siemens PM240 repair needs.
This is Northline Industrial's Siemens Sinamics S120 AC Servo System. This system was designed to provide all the necessary life support for the Siemens Sinamics S120 high-performance booksize power supplies and motor modules. This test station utilizes a CU320-2 DP controller that is capable of controlling multiple servo, spindle or induction axis. All facets of the S120 can be properly tested. This system utilizes the Siemens “Drive-Cliq” communications format for system modules as well as servo and spindle axis feedback interconnection. Please contact us if you have any questions about the various types of Sinamics S120 equipment we can repair for you.

Capabilities Include:

*See Page 2 for Complete Model Numbers

- Power Supply Active Modules
  - Internal, External, Cold Plate, Liquid
- Power Supply Smart Modules
  - Internal, External, Cold Plate
- Power Supply Basic Modules
  - Internal, Cold Plate
- Internal Cooled Motor Modules
  - Single/Dual Axis Motor Modules
- External Cooled Motor Modules
  - Single/Dual Axis Motor Modules
- Cold Plate Cooled Motor Modules
  - Single/Dual Axis Motor Module
- Liquid Cooled Motor Modules
  - Single Axis Motor Modules

Contact your Northline sales representative for all of your Siemens Sinamics repair needs.
Siemens Sinamics S120 AC Servo System

Automation Repair and Sales
Electronics
Robotics
Servo motors
Spindle Motors
CNC
HMI / Displays
Operator Stations
Monitors
PLCs
Light Curtains
Inverter Drives
AC/DC Drives
Welders
Process Controls

Capabilities Include:

- **Power Supply Active Modules**
  - Internal Modules
    - 6SL3130-7TE21-0AXX 16kW Active Module
    - 6SL3130-7TE23-0AXX 24kW Active Module
  - External Modules
    - 6SL3131-7TE31-0AXX 25kW Active Module
  - Cold Plate Modules
    - 6SL3136-7TE21-0AXX 16kW Active Module
  - Liquid Modules
    - 6SL3136-7TE31-2AXX 120kW Active Module

- **Power Supply Smart Modules**
  - Internal Modules
    - 6SL3130-6AE21-0AXX 5kW Smart Module
  - External Modules
    - 6SL3131-6AE21-0AXX 10kW Smart Module
  - Cold Plate Modules
    - 6SL3136-6AE15-0AXX 5kW Smart Module
  - Liquid Modules
    - 6SL3136-6AE15-2AXX 120kW Smart Module

- **Power Supply Basic Modules**
  - Internal Modules
    - 6SL3130-1TE22-0AXX 20kW Basic Module
  - External Modules
    - 6SL3130-1TE23-0AXX 25kW Basic Module
  - Cold Plate Modules
    - 6SL3136-1TE23-0AXX 40kW Basic Module

- **Internal Cooled Motor Modules**
  - Single Axis Motor Module
    - 6SL3120-1TE13-0AXX 3A Single Motor Module
    - 6SL3120-1TE21-0AXX 5A Single Motor Module
    - 6SL3120-1TE23-0AXX 10A Single Motor Module
    - 6SL3120-1TE27-0AXX 18A Single Motor Module
  - Dual Axis Motor Module
    - 6SL3120-2TE13-0AXX 3A/3A Dual Motor Module
    - 6SL3120-2TE21-0AXX 5A/5A Dual Motor Module
    - 6SL3120-2TE23-0AXX 10A/10A Dual Motor Module

- **External Cooled Motor Modules**
  - Single Axis Motor Module
    - 6SL3121-1TE13-0AXX 3A Single Motor Module
    - 6SL3121-1TE21-0AXX 5A Single Motor Module
    - 6SL3121-1TE23-0AXX 10A Single Motor Module
    - 6SL3121-1TE27-0AXX 18A Single Motor Module
  - Dual Axis Motor Module
    - 6SL3121-2TE13-0AXX 3A/3A Dual Motor Module
    - 6SL3121-2TE21-0AXX 5A/5A Dual Motor Module
    - 6SL3121-2TE23-0AXX 10A/10A Dual Motor Module

- **Cold Plate Cooled Motor Modules**
  - Single Axis Motor Module
    - 6SL3126-1TE13-0AXX 3A Single Motor Module
    - 6SL3126-1TE21-0AXX 5A Single Motor Module
    - 6SL3126-1TE23-0AXX 10A Single Motor Module
    - 6SL3126-1TE27-0AXX 18A Single Motor Module
  - Dual Axis Motor Module
    - 6SL3126-2TE13-0AXX 3A/3A Dual Motor Module
    - 6SL3126-2TE21-0AXX 5A/5A Dual Motor Module
    - 6SL3126-2TE23-0AXX 10A/10A Dual Motor Module

- **Liquid Cooled Motor Modules**
  - Single Axis Motor Module
    - 6SL3128-1TE13-0AXX 3A Single Motor Module

Contact your Northline sales representative for all of your Siemens Sinamics repair needs.

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Below is Northline Industrial’s newest repair capability, the Yaskawa Sigma II series test system. It was designed to dynamically test various Sigma II associated AC servo motors. There are many Yaskawa servo motor types that can be tested with this system including SGMAH, SGMPH, SGMGH, SGMSH, SHMUH, and SGMBH types of servo motors.

Capabilities Include:

Supported Servo Motors

- SGMAH
- SGMPH
- SGMGH
- SGMSH
- SHMUH
- SGMBH

Contact your Northline sales representative for all of your Yaskawa servo motor repair needs.
Yaskawa Sigma V Series AC Servo Motors

These are the Yaskawa Sigma V series or AC servo motors. They are the latest generation of Yaskawa Sigma series motion control automation. The Sigma V series has far more options and features than previous versions of Sigma products. Contact Northline Industrial for all of your Sigma V servo motor repair needs.
Yaskawa Sigma V AC Servo Amplifiers

This is the **Yaskawa Sigma V** AC 200V servo system. It is the latest version of the Yaskawa Sigma Series of motion control servo motors and amplifiers. Many of the Yaskawa Sigma series are backwards compatible thusly allowing upgrades from previous versions of the Sigma series a snap! The Yaskawa Sigma V series offers more features and options than previous Sigma series versions.

### Capabilities Include:

#### 200V Types

- SGDV-R70
- SGDV-R90
- SGDV-1R6
- SGDV-2R8
- SGDV-3R8
- SGDV-5R5
- SGDV-7R6
- SGDV-120
- SGDV-180
- SGDV-200
- SGDV-330
- SGDV-470
- SGDV-550
- SGDV-590
- SGDV-780

Contact your Northline sales representative for all of your repair needs.