



**NORTHLINE**  
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## Test Fixture Bulletin

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# NORTHLINE INDUSTRIAL REPAIR INC. 2019

## 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



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## *INDUSTRIAL REPAIR SERVICE & EQUIPMENT SALES*

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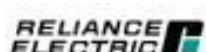
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# ABB IRC5 IRB2400 Robot System

## 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:

### Flex Teach Pendant

3HAC023195-001/04

### Main Servo Drive

3HAC025338

### Servo Supply

3HAC026289-001 : DSQC626A

### Control Power Supply

3HAC12928-1 : DSQC604

### Rectifier

3HAC14549-3

### SMU Board

3HAC16014-1/07 : DSQC562

### Capacitor Unit

3HAC14551-2

### Computer Unit

3HAC020929-006

### Drive Power Supply

3HAC020466-001 : DSQC627

### Motors

3HAC17346-1

3HAC17326-1/02

3HAC15ARA-AB11

Below is Northline's ABB IRC5 with IRB2400 manipulator robot system. IRC5 is ABB's fifth generation robot controller. Its motion control technology, featuring TrueMove & QuickMove, is key to the robot's performance in terms of accuracy, speed, cycle-time, programmability and synchronization with external devices. Our test system allows us to support dynamic repair and testing on IRC5 integral components such as the teach pendants, servo controllers, power supplies, auxiliary modules and servo motors. Repaired equipment is energized and system-tested to ensure a quality repair.



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

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# ABB S4 IRB1400 Robot System

## Automation Repair and Sales

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Servo motors  
Spindle Motors  
CNC  
HMI / Displays  
Operator Stations  
Monitors  
PLCs  
Light Curtains  
Inverter Drives  
AC/DC Drives  
Welders  
Process Controls

## Capabilities Include:

### Teach Pendant

3HNE00312-1

### Servo Amp

3HAB2207-1/3 : DSQC-236D

### Servo Supply

3HAB2215-1 : DSQC-314A

### Logic Supply

3HAA3563-AUA : DSQC-258

### Control Cards

YB560103-CH/10 : DSQC-239

(remote I/O)

3HAB2214 : DSQC-223 (I/O)

3HAB2214-1/2 : DSQC-315

(I/O)

3HAB2211-1 : DSQC-256 (Input

I/O)

3HAB2241-1 : DSQC-325 (CPU)

3HAB5956-1 : DSQC-323

(Memory)

3HAB6182-1 : DSQC-335 (CPU)

### Motors:

3HAB3125-1/8

Below is Northline's ABB S4 with IRB1400 manipulator robot system. This controller first produced in 1992 is capable of controlling up to 6 servo axis. This control has a large install base in the welding and pick-and-place markets. Our test system allows us to support dynamic repair and testing on S4 integral components such as the teach pendants, servo controllers, power supplies, auxiliary modules and servo motors. Repaired equipment is energized and system-tested to ensure a quality repair.



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### ABB S4C IRB2400 Robot System

#### Automation Repair and Sales

Electronics  
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AC/DC Drives  
Welders  
Process Controls

#### Capabilities Include:

##### Teach Pendant:

3HNE-00313-1

##### Servo Supply:

3HAB8101-3 : DSQC-345B

##### Logic Supply:

3HAC3462-1 : DSQC-374

##### Servo Amp:

3HAB8101-7 : DSQC-346C

3HAB8101-11 : DSQC-

346E

##### Control Cards:

3HAC3180-1 : DSQC-373

3HAB5956 : DSQC-323

3HAC0373-1 : DSQC-361

##### Motors:

3HAC3403-1/2

3KAC1674-1

3HAC2206-1/2

The ABB S4C is a multi-processor compact controller offering high performance with quick acceleration and deceleration of the servo axis. This flexible system is found in many weld, paint, and industrial pick-and-place material handling applications. Northline has the ability to repair and dynamically load-test the major components of this system. We support repairs on system components such as the control processors, teach pendants, power supplies, servo motor and servo control modules. Dynamic system testing is accomplished by installing your repaired part into our system to ensure a quality repair.



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# ABB S4C IRB6400 Robot System

## Automation Repair and Sales

Electronics  
Robotics  
Servo motors  
Spindle Motors  
CNC  
HMI / Displays  
Operator Stations  
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AC/DC Drives  
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The ABB IRB 6400 accounts for one third of the 90,000 ABB robot installations. This robot is a large, high-performance, all-steel constructed manipulator matched with the S4C controller. Northline has invested in this system to support the large install base on this industrial manufacturing robot. The acid test for any good repair is system-testing the repaired unit. We test your unit through a series of program exercises to simulate factory conditions. Additional weight on the manipulator, (up to 500lbs) allows us to load-test the system all the way back to the controller. Please inquire if we can repair your teach pendants, servo motors, drives, controller PCB's, or power supplies.

## Capabilities Include:

### Teach Pendant:

3HNE00313-1

### Servo Supply:

3HAB8101-3 : DSQC-345B

### Logic Supply:

3HAC3462-1 : DSQC-374

### Servo Amp:

3HAB8101-8/10 : DSQC-346G

### Safety Board:

3HAB7215-1/07 : DSQC-331

### Comm Interface Board:

3HAC2424-1 : DSQC-369

### Control Cards:

3HAC3180-1 : DSQC-373

3HAB5956 : DSQC-323

3HAC0373-1 : DSQC-361

### Motors:

3HAB5760-1

3HAB0200-1/04



Contact your Northline sales representative for all of your ABB IRB6400 repair needs.

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# ABB S4C+IRB2400 Robot System

## Automation Repair and Sales

Electronics  
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HMI / Displays  
Operator Stations  
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PLCs  
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Inverter Drives  
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Welders  
Process Controls

## Capabilities Include:

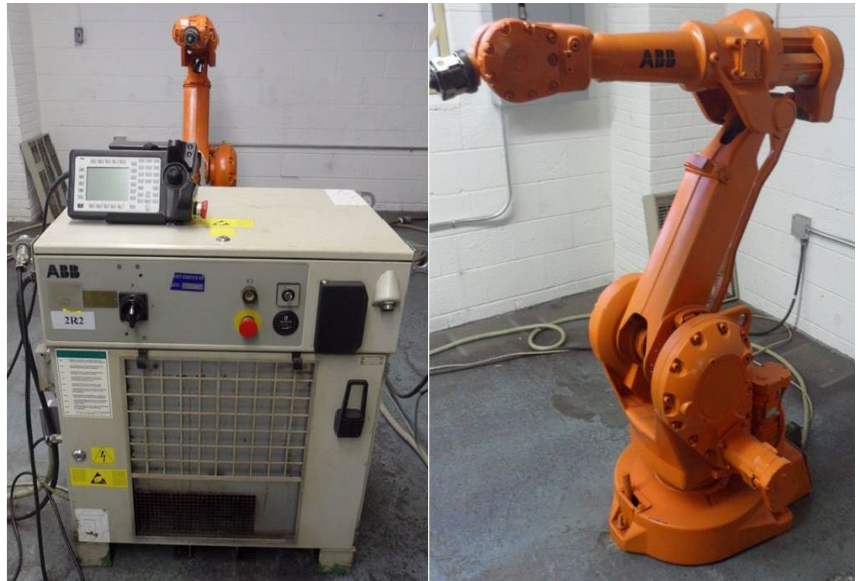
Teach Pendants:  
3HNE Series

Power supplies:  
3HAC Series  
DSQC Series

Drive Boards:  
3HAB Series  
DSQC Series

Computer  
3HAC9710-1

This is Northline Industrial's ABB S4C+PC robot system. This ABB controller is totally PC-based. An integral computer has all the necessary S4C+PC software preloaded. This allows the robot to operate with all the accuracy of the previous ABB hardware controllers along with the ease and reliability of a PC. The S4C+PC can be connected via Ethernet so coordinating factory tasks is simple and efficient. Dynamic testing is the only truly valid diagnostic-test, ensuring a quality repair. So contact your Northline sales representative today for all of your ABB S4C+PC service needs.



Contact your Northline sales representative for all of your ABB S4C+ repair needs.

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# ABB S4C+PC IRB6600 Robot System

## Automation Repair and Sales

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CNC  
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Operator Stations  
Monitors  
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Process Controls

## Capabilities Include:

### Teach Pendants:

3HNE00313-1

### Power supplies:

3HAC14265-1 : DSQC539

### Drive Controller Module

3HAB8101-19/07D :

DSQC545A

### Drive Module

3HAB8101-18/9 : DSQC546A

### Motors

3HAC020208-001

3HAC17484-6

3HAC17484-9

3HAC17484-10

### Safety Board

3HAC5687-1 : DSQC509

### Comm Interface Board

3HAC5689-1 : DSQC504

### Computer

3HAC020914-001

The ABB IRB6600 is a six axis robot mated with the S4C+PC Controller. This robot is best suited in heavily industrial uses such as spot welding, material handling, and machine tending. Northline has invested in this system to support repair and system testing on the multiple drives unique to this manipulator series. 2<sup>nd</sup> Generation TrueMove and QuickMove are additional software safety features of the IRB6600 not found on the 6400. Full system testing is the only measure of a successful repair. Let Northline be your spares and quality repair source on your ABB Robotics.



Contact your Northline sales representative for all of your ABB IRB6600 repair needs.

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# ABB Robot Servomotor (Resolver) Test System

## Automation Repair and Sales

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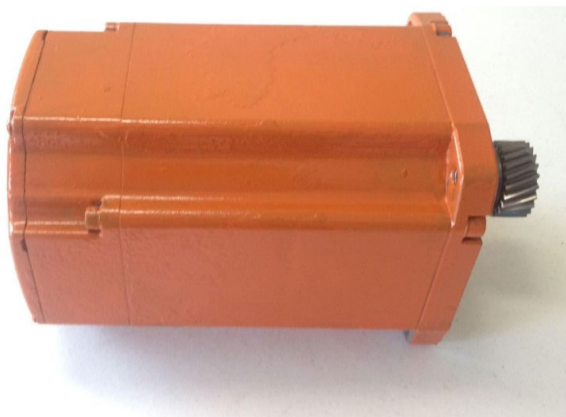
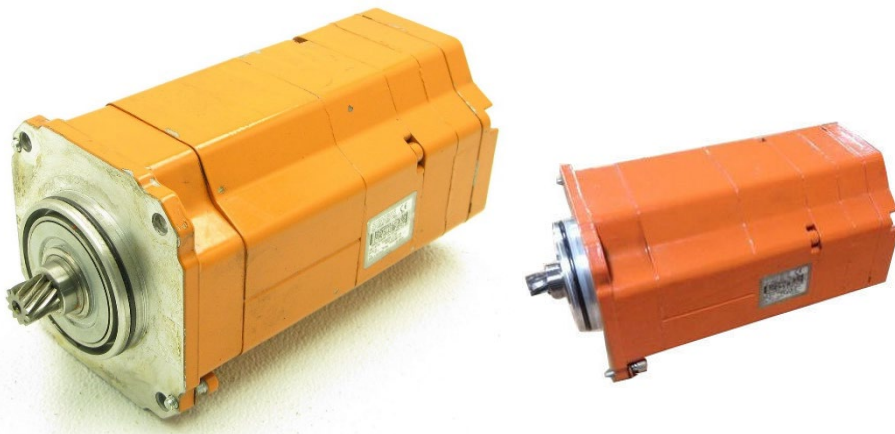
## Capabilities Include:

Pre-2004  
ABB Robotic Servo Motors  
w/ Resolver Feedback  
S3 through S4C+ Robot Series

Manufactured by:

Elmo  
Siemens

Northline has developed dynamic testing for all ABB resolver feedback robot servo motors that are "Pre 2004". These include all the servomotors found on ABB robot manipulators used with the S3 through S4C+ controllers. This dynamic testing allows Northline to troubleshoot motors in for repair as well as a definitive final quality control. Dynamic testing is a confirmation for correct encoder alignment and full function.



Contact your Northline sales representative for all  
of your ABB servo motor repair needs.

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# ABB Robotic Wrist Assemblies

## Automation Repair and Sales

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Operator Stations  
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AC/DC Drives  
Welders  
Process Controls

## Capabilities Include:

**Various Series and Models of ABB Robotic Wrist Assemblies**

This is an example of an ABB robotic wrist assembly. Northline Industrial now offers full rebuilds and dynamic testing for the ABB robot wrist assemblies. Northline supports many series and models of robotic wrists for remanufacture. Each remanufactured wrist is dynamically tested for accuracy and operation. Contact Northline for your specific ABB robotic wrist remanufacture needs.



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

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### Aker Wade UniMax 5001 Battery Charger

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AC/DC Drives  
Welders  
Process Controls

#### Capabilities Include:

**UniMax 5001 Cabinet**

**Display Module**

**Charger Supply**

This is the Aker Wade UniMax 5001 battery charger. It was designed to recharge fork lift batteries in high volume factory material handling applications. Northline Industrial can repair and dynamically test either the entire UniMax 5001 controller or the display control module or charger power module. Contact Northline Industrial for all of your Aker Wade charger repair needs.



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of your repair needs.

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### Allen Bradley 1394 Digital Servo Control

#### 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:

##### 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

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.



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

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### Allen Bradley ArmorStart 280/281D DeviceNet Motor Control

#### Automation Repair and Sales

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AC/DC Drives  
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Process Controls

#### Capabilities Include:

280/281D Base  
Modules

280/281D Control  
Modules

Below is Northline Industrial's newest high tech repair capability, the Allen Bradley ArmorStart 280/281D DeviceNet Motor Controller. This system was designed to dynamically test various AB 280D motor controls with the DeviceNet interface. There are many different models of 280D that can be tested with this system. Many different control voltages such as 24VDC, 120VAC and 240VAC power can all be tested.



Contact your Northline sales representative for all of  
your Allen Bradley 280/281D repair needs.

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## Allen Bradley MP Series Servo Test System

### Automation Repair and Sales

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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.

### Capabilities Include:

MPL-AXXXX  
MPL-BXXXX  
MPF-BXXXX  
MPM-BXXXX



Contact your Northline sales representative for all of your AB MP Series servo motor repair needs.





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### Allen Bradley PowerFlex 755 (Ethernet IP)

#### Automation Repair and Sales

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#### Capabilities Include:

20GXXXXXAA0NNNNN

Allen Bradley PowerFlex 755 AC Drives provide ease of use, application flexibility, and high performance. They include multiple control and hardware options, as well as optional embedded safety features. These drives are well-suited for a wide variety of motor control applications including pumps, fans, and conveyors. With Integrated Motion on EtherNet/IP, you can place these drives on the same network as Kinetix drives. Northline now has repair and test capabilities on the Powerflex 755 with Ethernet IP



Contact your Northline sales representative for all  
of your AB PowerFlex 755 repair needs.

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**NORTHLINE**  
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## Test Fixture Bulletin

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### Automation Field Service

#### 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:

Preventative Maintenance  
CNC Control  
Spare Part Support  
Robotics  
Project Management  
Training  
Systems Integration  
Custom Automated Equipment  
2D / 3D CAD Capabilities  
3D Robotic Simulation  
PLC Programming  
SCADA Design & Programming  
HMI Design & Programming  
Motion Control  
Industrial Networks  
Fieldbus  
Industrial Network Security  
Electro-mechanical System Installations  
Panel Build  
Fluid Power  
Hydraulics  
Pneumatics  
Barcode Readers  
RFID

Today's manufacturing plants employ a wide variety of automated equipment from dozens of Manufacturers. Many times the man-power and experience needed to service and install this equipment is in short supply while trying to meet ever tightening maintenance budgets. We offer a range of engineering services - all designed to help your company reach its full potential. Northline has the staffing and expertise to troubleshoot and service your PLC, HMI, Drive, CNC and Robotic control systems. From a one-time issue, reoccurring preventative maintenance, machine retrofit of obsolete controls, or new installations, Northline can provide Field Service on your automated systems ... service that minimizes machine downtime and doesn't break the bank.



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

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# Atlas Copco PowerMACS Torque Assembly System

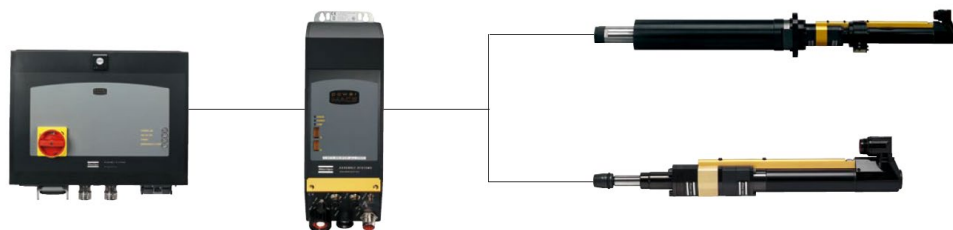
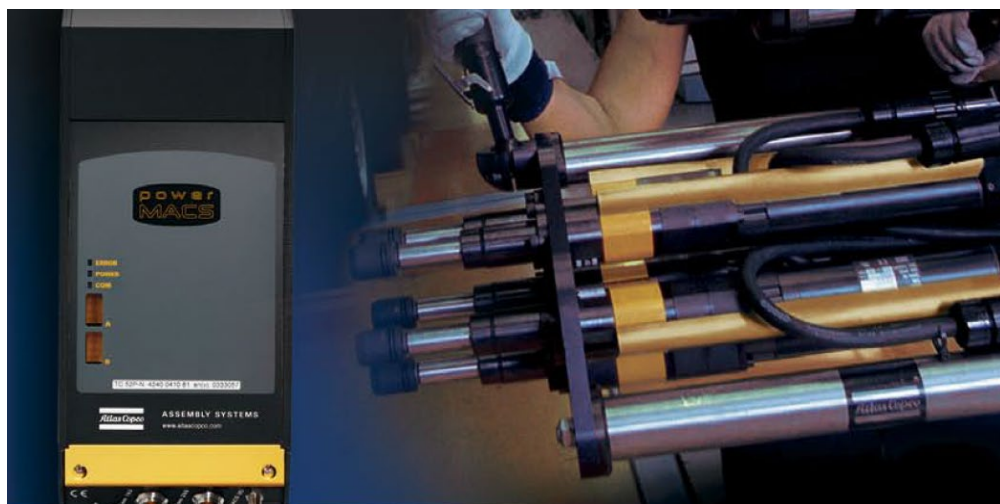
## Automation Repair and Sales

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:

Comnode Touch  
8433 2710 10  
TC52 S Controllers  
4240 0440 81  
No Fieldbus  
4240 0441 81  
Profibus  
4240 0443 81  
DeviceNet  
Power Box Unit (PBU)  
4240 0702 00  
R Servo Spindle Gun  
4230 1902 80  
4320 1903 80

Meet Northline Industrial's latest repair capability, the Atlas Copco PowerMACS multi torque control system. These torque systems were designed to uniformly tighten down groups of bolts in assembly operations where several fasteners being torqued down to predetermined torque specifications. Engine head bolts, main bolts, valve covers and automotive tires are good examples of multi rundown torque assembly operations.



Contact your Northline sales representative for all of your Atlas Copco torque systems repair needs.

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### BTM Pin and Hook Clamps

#### 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:

##### Models:

PD202400A  
PD202400B  
PD211001A  
PD211500D  
PD231100B  
PD234100C  
PD248300A  
PD248300B  
PD248500A  
PD285600B  
PD285800A  
PD291100A

BTM Pin Clamps reduce cost by both accurately locating through datum holes and clamping a part with one device. The BTM “Pin & Hook” clamps come in 3 types, clamping, retaining and locking. These clamps are pneumatically driven and operate with piston, spring, and air driven cam mechanisms. Northline has the ability to clean, rebuild, and dynamically run test these BTM pin and hook clamps. Please consider Northline to support BTM pin clamp spares at your plant.



Contact your Northline sales representative for all  
of your BTM pin clamp repair needs.

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# Emhart Tucker DCE1500 DCE1800 Stud Welders

## 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:

Stud Gun Testing  
MR 410/420  
LM 310

Feeder Testing  
ETF 20  
EFT 5

Weld Power Supply  
DCE 1500  
DCE 1800

Worldwide there are over 11,000 Tucker Stud welders in production. Northline is now supporting repair and test on components of the Emhart Tucker Automatic Stud Welding Systems. Northline can offer system testing on the stud guns & feeders. We offer repair and testing of the DCE weld power supply controllers. A dynamic test of repaired items is best quality control to simulate factory conditions and ensure full function.



Contact your Northline sales representative for all of your Emhart Tucker stud welder repair needs.

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# Fanuc 30i-B 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:

A06B-6200-HXXX (PS)  
Power Supply Module

A06B-6202-HXXX (PS)  
Level Up Power Supply

A06B-6240-HXXX (SV)  
Servo Amplifier

A06B-6220-HXXX (SP)  
Spindle Amplifier

A06B-6222-HXXX (SP)  
Level Up Spindle

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%!



Contact your Northline sales representative for all of your Fanuc 30i-B Servo repair needs.

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# Fanuc Powermate CNC

## 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:

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	

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.



Contact your Northline sales representative for all of your Fanuc Powermate CNC repair needs.

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### Fanuc Powermate D

#### 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:

A06B-6057	A06B-6085
A06B-6058	A06B-6087
A06B-6066	A06B-6088
A06B-6077	A06B-6089
A06B-6078	A06B-6090
A06B-6079	A06B-6091
A06B-6080	A06B-6092
A06B-6081	A06B-6093
A06B-6082	A06B-6098
A06B-6083	A06B-6102

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.

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# Fanuc Powermate D 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:

### 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

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.



Contact your Northline sales representative for all of your Fanuc Powermate D repair needs.

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### Fanuc Powermate Di

#### 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:

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

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.



Contact your Northline sales representative for all of  
your Fanuc Powermate Di repair needs.

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### Fanuc R30iA

#### 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:

CPU Drive Board  
A16B-3200-0600

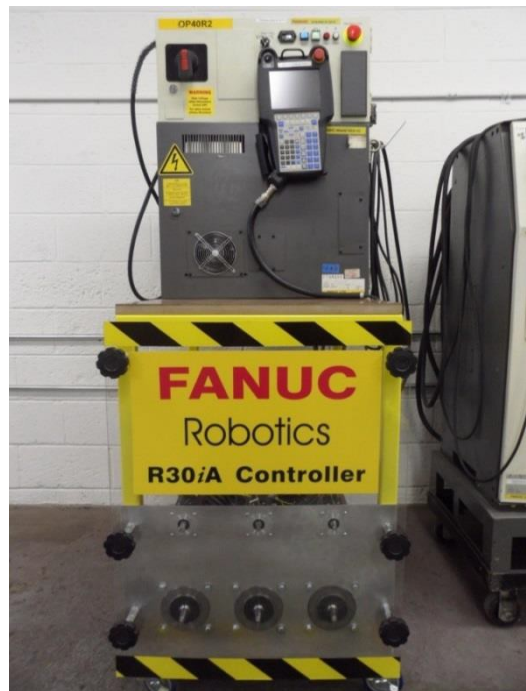
DeviceNet PC Board  
A16B-2203-0910

Servo Drive  
A06B-6107-H002

Cooling Module  
A05B-2501-C312

Fanuc iPendant  
A05B-2518-C200

Northline now repairs and tests components out of Fanuc Robotic's latest control system, the R30iA. This robotic control is found though-out the manufacturing industry in assembly, dispensing, paint, welding, and machine-tending applications. With our new test-stand we have the capacity to system test the R30iA controller, power supply, I/O, manipulator servo motors, associated PCBs and Fanuc's new iTouch 4D Teach Pendant. Please contact your Northline Industrial Representative for your Fanuc CNC repair needs.



Contact your Northline sales representative for all  
of your Fanuc R30iA repair needs.

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# Fanuc Arcmate 120iC with R30iB Robot 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:

### Drive Board

A16B-3200-0780/034  
A16B-2203-0910/07A

### Servo Drive

A05B-2600-C313

### Cooling Module

A05B-2601-C313

### Fanuc iPendant

A05B-2255-C101#EAW

### Servo Amplifier

A06B-6400-H102

### Servo Motors

A06B-6400-H102

Northline now repairs and tests components out of Fanuc Robotic's latest control system, the R30iB. This robotic control is found though-out the manufacturing industry in assembly, dispensing, paint, welding, and machine-tending applications. With our new ArcMate 120iC we have the capacity to system test the R30iB controller, power supply, I/O, manipulator servo motors, associated PCBs and Fanuc's new iTouch 4D Teach Pendant. Please contact your Northline Industrial Representative for your Fanuc CNC repair needs.



Contact your Northline sales representative for all of your Fanuc R30iA repair needs.

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### Fanuc RJ2 with S-420i Robot 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:

##### CPU

A16B-3200-0040

##### Power Supply

A16B-1212-0871

##### Servo Amplifier

A06B-6076-H101

##### Teach Pendant

A05B-2301-C300

##### Operator Interface

A20B-1006-0290

Below is Northline Industrial's Fanuc RJ2 Controller with a S-420i Manipulator. This Test Fixture is used to provide a source of quality repair and support of the integral components of the RJ2 controller. CPU's, powers supplies, servo controllers, teach pendants, I/O modules and servo motors can all be energized and system tested with this fixture. This test system provides our customers a means of timely repair and test on their parts....maximizing customer machine uptime and production!



Contact your Northline sales representative for all  
of your Fanuc RJ2 repair needs.

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# Fanuc Rj3 with S430iW Robot 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:

A05B-2301-C190

#### PowerSupply

A16B-2203-B370

#### Servo Amp

A06B-6100-H001

#### Boards

A16B-2100-0200 Top

A20B-2003-0131 CPU

#### Ethernet Module

A16B-3200-0330

#### DeviceNetModule

A16B-2203-0190

#### Motors

A06B-0136-B075

A06B-0166-B875

A06B-0163-B175

The Fanuc S430iW is a six-axis industrial robot capable of handling heavy assignments. Designed for the automotive industry, the S430iW RJ3 robot is found in parts transfer, material removal, dispensing and machine loading applications.

The FANUC S-430iw RJ-3 features the FANUC Servo Drive System, resulting in fast point-to-point positioning. Northline supports this equipment with repair and system testing of the controller and manipulator components. Teach pendants, CPU, E-stop PCB, Servo Amp and servo motors all require a system test to assure piece of mind that your spares are reliable and there when you need them.



Contact your Northline sales representative for all of your Fanuc RJ3 repair needs.

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# Fanuc Rj3iB R2000iA Robot 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:

### Teach Pendant

A05B-2301-C370

### CPU

A16B-3200-0412

### E Stop PCB

A05B-2452-C473

### Servo Amp

A06B-6105-H002

### Motors

A860-2014-T301

A06B-0267-B604

A860-2010-T341

Northline Industrial's Fanuc RJ3iB robot control system features a Fanuc R-2000iA robot manipulator and is software-ready for testing the new Fanuc "i-Pendants"! The RJ3iB controllers are on the leading-edge of today's robot technology. These new Fanuc controllers utilize "Six Pack" servo-drive modules so changing them out is easy and efficient. Over 300lbs. of dead weight attached to the front of the R2000iA robot provides a full dynamic load-test for the servo drive modules. Contact your local Northline sales representative today for all of your Fanuc RJ3iB service needs.



Contact your Northline sales representative for all of your Fanuc RJ3iB repair needs.

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# Fronius TransPuls Synergic (TPS) Weld Systems

### 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:

#### Series:

TPS 4000  
TPS 5000

#### Parts Supported:

Chiller  
Power Supply  
Wire Feeders  
Pendant panels  
Field Modules

Northline Industrial is now a factory authorized service center for Fronius TPS weld systems. Northline technicians have completed factory training to support the TransPuls Synergic (TPS) Systems. This includes the TPS 4000/5000 Series and includes all system subcomponents including power supplies, wire feeders, chillers, pendants and field modules.



Contact your Northline sales representative for all of your servo Fronius TPS welder repair needs.

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### Indramat DIAX04/IndraDrive

#### 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:

##### System Components

Teach Pendant, MRC JZCN  
Amplifier, CACR  
Motors, SGMP  
Power Supply, CPS

##### System Modules/PCB

JANCD-MCP01  
JANCD-MIF01  
JANCD-MI004  
JANCD-MSV01B  
JANCD-MRY01B-1  
JANCD-MEW02-1

The Indramat DIAX04 and IndraDrive M series are a modular compact ac servo drive that integrates motion control, spindle control, amplifier, power supply and I/O in a single, compact unit. Northline Industrial now has the ability to load-test completed repairs and test SERCOS communication on the Indramat DIAX04 and IndraDrive series with our newly developed diagnostic test center. Many devices from Indramat's DIAX04 and IndraDrive series can be fully functionally and dynamically tested. Please contact your Northline Representative for more details.



Contact your Northline sales representative for all of  
your Indramat DIAX04 IndraDrive repair needs.

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### Indramat Multiseries Test 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:

TVM  
TDM  
TDA  
TVR  
TVD  
DDS  
DKS  
KDA  
KDS  
KDV  
KDR

This is Northline Industrials “Indramat Multi Series Diagnostic Test System”. It was designed to dynamically run and test many of Indramat’s newer and legacy servo products with either the analog or SERCOS control interfaces. Many devices from Indramat’s ANAX, DIAX01, DIAX02 and DIAX03 series can be fully functionally and dynamically tested.



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

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# Indramat 2AD 2AC Spindle Motor 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:

### Controllers

RAC 2 & RAC 3

### Spindle Motor

2AD

2AC

Northline Industrial is pleased to announce repair and full dynamic test capabilities for the Indramat 2AD/2AC asynchronous main spindle motors.

Dynamic testing includes taking the spindle motor through a series of ramp up/down and quick stop speed changes with a RAC03.1 AC spindle drive.

Turn to Northline for a quality repair of your Indramat 2AD/2AC Spindle Motors.



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

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# Indramat SERCOS Interface 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:

#### Sercos Indramat Testing for:

DIAX-03 Family  
DIAX-04 Family  
IndraDrive Family

Shown below is Northline Industrial's New Fiber optic Indramat SERCOS Interface System. SERCOS (Serial Real-Time Communication System) is a globally standardized open digital interface for communicating between industrial controls, motion devices and I/O. Our test fixture allows us to dynamically test Indramat power supplies, servo drives and motors on completed repairs. This unit complements our dynamic testing capabilities and ensures a quality repair every time.



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

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# Large Eddy Current Dynamic Load 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:

High Current Dynamic  
Testing For:

Servo Motors  
Spindles Motors  
Servo Drives  
Spindle Drives

This is Northline Industrial's **Dynamic Load Testing System**. It utilizes an large industrial "Eddy Current" Brake in order to provide a fully adjustable linear load on to various "servo" and "spindle" motors. Virtually any motor, servo or spindle, can be mounted to the load systems X-Y rotary table. From there it can be precisely positioned into proper alignment with the Eddy Current Brakes pulley sheave. The system has an integrated hydraulic crane to ease in the motor exchange process. This system was specifically designed to draw higher levels of "load current" through servo and spindle drive modules and power supplies. This will ensure a quality repair that can withstand the rigors of day to day factory operations.



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

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### Display/HMI 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-to-LCD Retrofit  
LCD Integration  
Slow-Scan  
Auto-Sync

LCD, CRT, Touch Screen, CNC HMI, and many other monitors are repaired and serviced. Inverters, overlay replacement, backlight assemblies, and power supplies are just a few of the display repair services provided. Northline has the repair and test capabilities on the following Manufactures and Series:



- 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.

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# LCD CONVERSIONS

### 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:

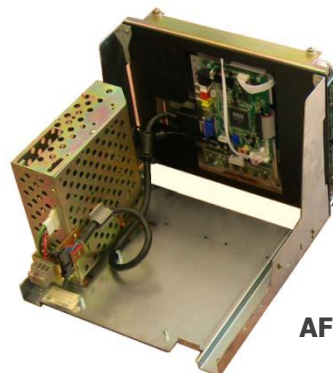
CRT-to-LCD Retrofit  
LCD Integration  
Slow-Scan  
Auto-Sync



**BEFORE**

Convert your old  
CRT Terminal...

...to a **NEW**  
**LCD TERMINAL!**



**AFTER**

### The benefits to a conversion are as follows:

- Less energy required to run (lower operating cost).
- Converted units weigh less (easier installation).
- LCDs emit less heat (extending component life).
- Cost-effective solution (compared to new).

*No panel modifications are required to mount a converted unit. No supply voltage, communications port, or cable modifications are required. Just plug the cables from your existing system into the unit and you're up-and-running!*

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# Lincoln Power Wave i400 Welder

### 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:

Load Bank Testing  
Robot Interface  
Ethernet  
Digital Communication

Models:  
11454  
11774

The Power Wave i400 is one of Lincoln Electric's newest high-end robotic weld power supplies. This unit delivers Lincoln's best performance technologies and welding processes all rolled into one highly efficient inverter power source.

Northline Industrial has acquired all the necessary equipment, training, and software to perform full diagnosis, repair, and system load testing on any components of the i400 robotic welder power supplies.

Northline Industrial is a "Factory Authorized Service Center" for Lincoln Electric welders. Robot World, a division of Northline Industrial, is an "Authorized Lincoln Electric Robotic Integrator". Contact your Northline sales representative for all of your i400 welder needs.

**LINCOLN<sup>®</sup>**  
**ELECTRIC**  
**THE WELDING EXPERTS<sup>®</sup>**  
**Factory Authorized**



Contact your Northline sales representative for all of your i400 welder repair needs.

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# Miller 74 Series Mpa Plus Wire Feeders (Right & Left)

## 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:

### 74 Series Mpa Plus

Dual Wire Feeder  
Controller

Right Wire Feeder  
Mechanism

Left Wire Feeder  
Mechanism

This is the **Miller 74 Series Mpa Plus** dual wire feeder. It comes in both manual and robotics application versions. It is a dual feed welder option for applications where multiple MIG guns are required. Northline offers full dynamic testing for both the right and left feeder mechanisms as well as the Mpa Plus wire feeder controller.



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

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# Mitsubishi CNC Diagnostic Test 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:

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

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.



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

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# Mitsubishi MDS-CH 400V Servo Diagnostic Test 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:

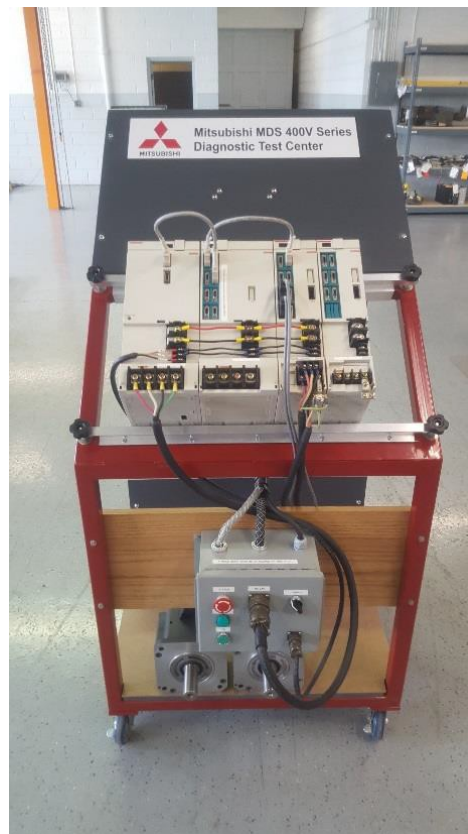
**MDS-CH-V1-XX** Single Axis  
Servo Amplifier Module

**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)

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.



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

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# Mitsubishi MR-HXXX-AN Series AC Servo Amplifiers

## 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:

**MR-HXXX-AN**

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.

## MELSERVO-H



Contact your Northline sales representative for all  
of your Mitsubishi servo amplifier repair needs.

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# Mitsubishi Melservo MR-J2S-A Series

## 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

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-XXXX  
Melservo Amplifier Series

HC-SFSXXXX  
AC Servo Motor



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

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# Motoman MRC w/SK16 Robot 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:

### System Components

Teach Pendant, MRC JZCN  
Amplifier, CACR  
Motors, SGMP  
Power Supply, CPS

### System Modules/PCB

JANCD-MCP01  
JANCD-MIF01  
JANCD-MI004  
JANCD-MSV01B  
JANCD-MRY01B-1  
JANCD-MEW02-1

This is Northline Industrial's Motoman MRC with SK16 Manipulator Robot System.



This complete robot system allows for diagnostic and dynamic load-testing of the component parts that make up the system (see components on the left). This is the only valid system-test that ensures a quality repair on your Motoman MRC amplifier, power supply, teach pendant and other system components.

Contact your Northline sales representative for all of your Motoman MRC SK16 repair needs.

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# Motoman NX EA1400N Robot 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:

### Teach Pendant

Yasnac NX JZRCR

### PC Servo Control

JZNC

### Motors

SGMRS

SGMPH

### Power Supply

JZNC

JZRCR

### Yaskawa I/O

JZNC

### Servo Packs

SGDR Type CNP6 CNP4

### Converter

SDGR

This is Northline Industrial's Motoman NX with EA1400N Manipulator Robot System. This system allows for dynamic system-testing of our component repairs. This includes repair/testing capabilities on the Yasnac touchscreen teach pendants, Yaskawa power supplies, PC servo controller, servo packs and I/O. Dynamic-system testing is the only test that ensures a quality repair every time. Contact your Northline sales representative for all your Motoman NX EA1400N service!



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

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# Motoman XRC UP165 Robot 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:

### Teach Pendant

JZNC-XPP02B

### Power Supply

JUSP01AAC

### Servo Amplifier

JZRCRX-XSU02

### Yaskawa I/O

JZNC-XIU01-1

### CPU Board

JANCD-XCP01

### Boards

JANCD-XSP01

JARCR-XFB01B

JARCR-XFB04

JANCD-XCP01C-1

JANCD-XCP02B

### Motors

SDMDH-45A2B-YR15

SGMGH-44A2A-YR15

SGMGH-13A2A-YR13

This is Northline Industrial's Motoman XRC 2001 with UP165 Manipulator Robot System. The XRC allows for control of up to 27 axis from one CPU with 32-bit RISC distributed architecture and digital servo drives. Our system allows for dynamic system-testing of our XRC component repairs. This includes repair/testing capabilities on the Yasnac teach pendants, Yaskawa power supplies, Servo controller, servo packs and I/O. Dynamic-system testing is the only test that ensures a quality repair every time. Contact your Northline sales representative for all your Motoman XRC service!



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

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# Nachi AR52 SA160F Robot 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:

AR-52-Kunit Power Unit  
RAX11 19-98030041 Drive  
R0P501 Teach Pendant  
MFM552HIV Motor  
MDM212HIV Motor  
FJK2005A Logic Supply

This is Northline Industrials new Nachi AR52 Controller with SA160F Robot Manipulator System. This Test Fixture allows us to dynamically system test the AR52 controllers integral components including teach pendants, power supplies, servo amplifiers and logical control components. Once repairs are completed, they are system tested to ensure the repairs meet or exceed OEM specifications.



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

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Fax : 313-537-9895





**NORTHLINE**  
INDUSTRIAL

## Test Fixture Bulletin

[www.northlineindustrial.com](http://www.northlineindustrial.com)

### Nachi AW11 SG160R Robot 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:

XTP111-15 Teach Pendant  
RFX-1120G Servo Drive  
UM136 Control PCB  
UM169 Control PCB  
UM116 Control PCB  
System I/O PCB  
System Power Supplies

This is Northline Industrials new Nachi AW11 Controller with SG160R Robot Manipulator System. This Test Fixture allows us to dynamically system test the AW11 controllers integral components including teach pendants, power supplies, servo amplifiers and logical control components. Once repairs are completed, they are system tested to ensure the repairs meet or exceed OEM specifications.



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

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**NORTHLINE**  
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## Test Fixture Bulletin

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# Nachi AX10 SC400L-01 Robot 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:

### Teach Pendant

AXTP

### Servo Drive

RIX 1120

### Power Supply

PSU10-10

### CPU Board

L8820C00

### I/O Board

L8800M00

### Sequence Board

L8800F00

### High Power Contactor

L8811A00

This is Northline Industrials new Nachi AX10 Controller with SC400L-01 Robot Manipulator System. This test fixture allows us to dynamically system test the PC based AX10 controllers integral components including the color teach pendants, power supplies, servo amplifiers and logical control components. Once repairs are completed, they are system tested to ensure the repairs meet or exceed OEM specifications.



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

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# Nasarc Intelliream MP Reamers

### 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:

Intelliream  
IRM010001-MP  
IRM020001-NT

Reamer  
Sprayer  
Cutter  
TCP Check

The Nasarc Intelliream MP is a robotic torch maintenance center. This reamer removes and limits spatter and extends the life of your Robotic MIG Torch.

Northline supports repair and testing on this Nasarc Intelliream MP Reamer. We have obtained the necessary interface software to support an full system test. Our test rig allows for extended cycle testing and confirmation of the 4 available processes- reamer, sprayer, cutter, and TCP.



Contact your Northline sales representative for all  
of your Nasarc MP reamer repair needs.

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**NORTHLINE**  
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# Power Designers PCXP & PHLV Series Charger Systems

### 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:

PCXP Series (10, 20 30KW)  
PCXP-10KW-48V-480VAC  
Charger Modules

PHLV Series (10, 20, 30KW)  
PHLV-10KW-48V-480VAC  
Charger Modules

This is the **Power Designers PCXP and PHLV** series battery charger systems. These were designed to recharge fork lift batteries in high volume factory material handling applications. Each charger system contains one to three charger drawers that are of capability each. Charger drawers can be stacked in parallel to add charging capacity up to 30KW! Contact Northline for all of your Power Designer 10KW s battery charger needs.



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

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## Test Fixture Bulletin

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### Precision Spindle 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:

Blanchard	Kingsbury
Browne &	Landis
Sharpe	Makino
Bryant	Mori-Seiki
Chiron	Pratt &
Cincinnati	Whitney
Doall	Parker
Dumore	Majestic
Excel	Pope
Excello	Precise
Fanuc	Rigid
Franz Kessler	Rockwell
GMN	Setco
Gros-ite	Taft Pierce
Heald	Voumard
Ingersoll	

Belt Driven



Lathe



Boring



Motorized



Gear Driven



High Speed



Block Type



Grinding



Milling



Machine Tool



- 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.

Northline is proud to offer repair of your of 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.



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**NORTHLINE**  
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## Test Fixture Bulletin

[www.northlineindustrial.com](http://www.northlineindustrial.com)

# Indramat Rexroth MKD/MHD 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:

MKD 041B-XXX-XXX-XX  
MKD 071B-XXX-XXX-XX  
MKD 090B-XXX-XXX-XX  
MKD 112B-XXX-XXX-XX  
MKD 112C-XXX-XXX-XX

MHD 041B-XXX-XXX-XX  
MHD 071B-XXX-XXX-XX  
MHD 090B-XXX-XXX-XX  
MHD 093A-XXX-XXX-XX  
MHD 093B-XXX-XXX-XX  
MHD 093C-XXX-XXX-XX  
MHD 095C-XXX-XXX-XX  
MHD 112D-XXX-XXX-XX  
MHD 115B-XXX-XXX-XX  
MHD 115c-XXX-XXX-XX

The Rexroth MKD and MHD series permanent magnet synchronous servo motors are used in a wide variety of motion control applications. The MKD/MHD series motors can be used with various series of Indramat / Rexroth servo drives.

Northline now supports repair and dynamic system testing for the MKD/MHD series servo motors. Thermal and vibration testing upon request. Turn to Northline to support your Rexroth MKD and MHD Series servo motor repair needs.



Contact your Northline sales representative for all of your Rexroth MKD/MHD servo motor repair needs.

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**NORTHLINE**  
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# Indramat Rexroth MSK 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:

**Models:**  
MSK030C thru MSK100E

Rexroth's MSK Series is a Synchronous servo motor with a maximum torque and an encoder capable of a diverse range of applications. Northline has gathered all the necessary power and feedback cables as well as electronic IndraDrives to support full dynamic test of the MSK servo motors. Thermal, Vibration testing available upon request.

An OEM dynamic system test is the only reliable method to insure full function and reliability of your critical spares. A Full Service Report is provided with each repair. Choose Northline as your reliable Rexroth



Contact your Northline sales representative for all of your Rexroth MSK servo motor repair needs.

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# Rexroth PSI 6000 Series Resistance Welders

## 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:

PSI 63CX.1XX L1  
Discrete Control (Air)

PSI 63CX.1XX W1  
Discrete Control (Water)

PSI 6300.7XX L1  
EtherNet IP (Air)

PSI 6300.7XX W1  
EtherNet IP (Water)

Northline Industrial introduces its latest capability in EtherNet IP controlled resistance weld control systems. The PSI 6000 concept provides parameterized functions for the resistance welding process in order to realize specific complex sequences. All units have a free slot that will accept Rexroth quality control modules. Secondary currents ranging from 250 up to 120,000 Amps are available on demand regardless of the preferred welding method. The integration of the weld timer control functions into an AC, or medium frequency inverter, provides a solid basis for modern automation tasks. The PSI 6000 concept is the amalgamation of many successful solutions in the field of resistance welding. A particularly valuable advantage of this innovative product is its enormous input and output flexibility.



Contact your Northline sales representative for all of your Rexroth PSI 6000 series weld repair needs.

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# Servo Motor Repair

## Automation Repair and Sales

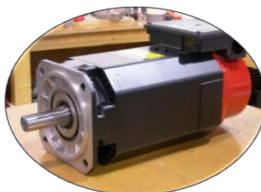
Electronics  
Robotics  
Servo motors  
Spindle Motors  
CNC  
HMI / Displays  
Operator Stations  
Monitors  
PLCs  
Light Curtains  
Inverter Drives  
AC/DC Drives  
Welders  
Process Controls

## Capabilities Include:

- AC Servo Motors
- Brushless DC Servomotors
- AC Spindle Motors
- Induction Motors
- DC Motors
- Robotic Wrists

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 | • 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.

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**NORTHLINE**  
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## Test Fixture Bulletin

[www.northlineindustrial.com](http://www.northlineindustrial.com)

### Servo Motor 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:

- AC Servo Motors
- Brushless DC Servomotors
- AC Spindle Motors
- Induction Motors
- DC Motors
- Robotic Wrists

#### ABB • Elmo

3HAB  
3HAC  
8C Series  
PS Series

#### AEG

120 Series  
R Series  
S Series

#### Allen Bradley Reliance

1326AB  
1326AD  
1326AS  
1326DP  
F Series  
H Series  
LD Series  
N Series

#### Baldor

BSM,M

#### Elwood Getty's • Gould

120 Series  
R Series  
Alpha αís  
Alpha α(HV)í  
Alpha α(HV)ís

#### GE Fanuc

Alpha α  
Alpha αí  
Alpha αís  
Alpha α(HV)í  
Alpha α(HV)ís  
Alpha αM, B, βí, βís  
MTR-3S  
MTR-3T  
S Series  
SL Series  
Spindle  
α Spindle  
H Series  
SW Series

#### Giddings & Lewis

FSM Series  
HSM Series  
NSM Series  
YSM Series

#### Giddings & Lewis

FSM Series  
HSM Series  
NSM Series  
YSM Series

#### Indramat • Rexroth

MAC Series  
MDD Series  
MHD Series  
MKD Series

#### Industrial Drive • Inland

B Series  
TT Series  
TTBL Series

#### Ingersoll Rand

E-2630 "R"  
E-3340 "U"

#### Kollmorgen Goldline

AKM Series  
B Series  
BH Series  
M Series  
MH Series

#### Lenze

MCA Series  
MCS Series  
MDFKS Series  
MDSKS Series  
MDFQA Series

#### Modicon

120 Series  
Cyberline R Series  
Cyberline S Series

#### Sew Eurodrive

F Series  
K Series  
R Series  
S Series

#### Siemens

1FK6 Series  
1FK7 Series

Contact your Northline sales representative for all of  
your Servo Motor Repair needs.

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### Servo Motor Testing

#### 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:

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

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.



Contact your Northline sales representative for all of your Servo Motor Repair needs.

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**NORTHLINE**  
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## Test Fixture Bulletin

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# Siemens Drive-Clq Servo Motors

## Automation Repair and Sales

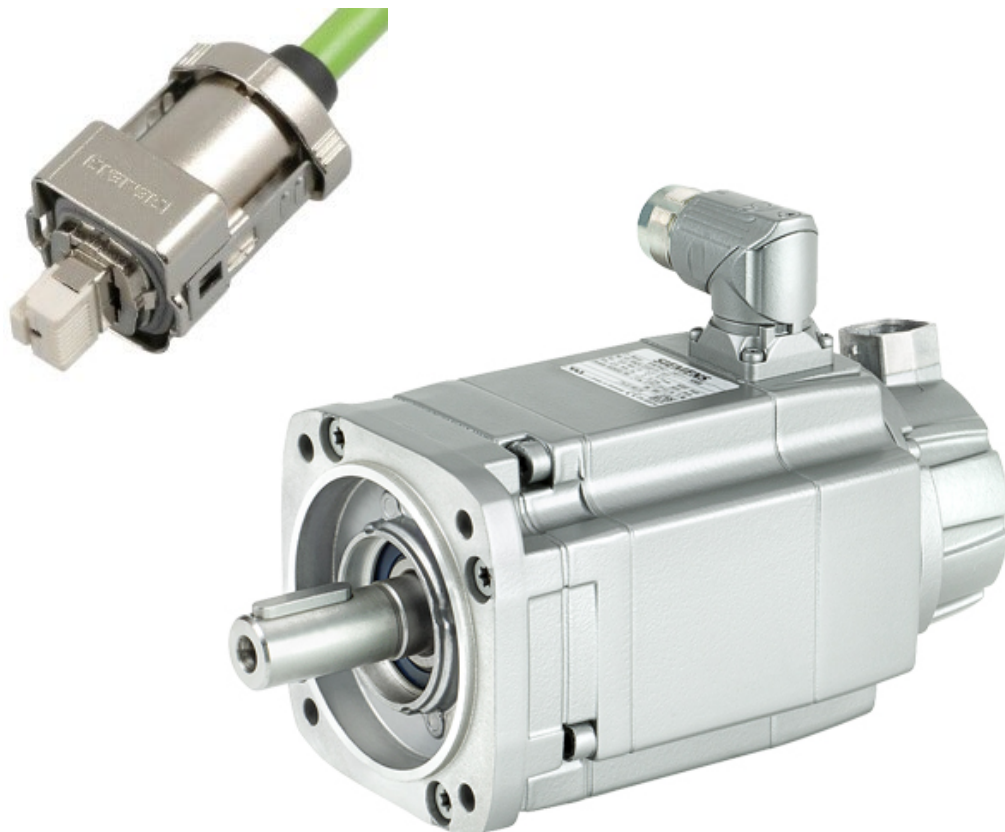
Electronics  
Robotics  
Servo motors  
Spindle Motors  
CNC  
HMI / Displays  
Operator Stations  
Monitors  
PLCs  
Light Curtains  
Inverter Drives  
AC/DC Drives  
Welders  
Process Controls

## Capabilities Include:

Servo Motors used on:

*Siemens SINAMICS with*  
"Drive-Clq Equipped"  
Servo Feedback Interfaces

Siemens Sinamics "DRIVE-CLiQ" is a "multi feedback" communications interface. This enables users to select the measuring system that is perfectly tailored to their application. Feedbacks that use new measuring techniques (such as magnetic / inductive systems, magneto-strictive sensors, lasers) can also be connected through DRIVE-CLiQ as well as traditional optical encoders and resolvers. With DRIVE CLiQ, the motors information is automatically programed into the drive saving set up time. Northline has invested in the hardware needed to perform a full system test of Siemens Drive-Clq Motor and Interface. Choose Northline for your quality repair partner.



Contact your Northline sales representative for all of your Siemens Drive-Clq servo motor repair needs.

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**NORTHLINE**  
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## Test Fixture Bulletin

[www.northlineindustrial.com](http://www.northlineindustrial.com)

# Siemens PM240 Power Modules

## 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:

**Sinamics G120 Inverters:**  
PM240 Power Modules

### Models:

6SL3120-XXXXX-XXXX  
6SL3121-XXXXX-XXXX  
6SL3130-XXXXX-XXXX  
6SL3210-XXXXX-XXXX  
6SL3224-XXXXX-XXXX

The SINAMICS G120 inverter has been designed for the accurate and efficient control of the speed and torque for three-phase motors. The SINAMICS G120 system comprises two basic modules, the “Control Unit” and the “Power Module”. The PM240 power modules belong to the modular family of SINAMICS G120 inverters. The PM240 Power Modules are designed for line voltages of 3 AC 380 V to 480 V range. Depending on the power rating, they are supplied in frame sizes FSA ... FSGX.

Northline now supports repair and system test of the PM240 Series power modules. Turn to Northline for a reliable repair partner of your Siemens PM240 power modules.



Contact your Northline sales representative for all of your Siemens PM240 power module repair needs.

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# Siemens 611 AC Servo Control 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:

Infeed Power Module  
6SN1145 (Entire Series)

Power Amplifier Module  
6SN1123(Entire Series)

Control Card Modules  
6SN1118 (Analog and  
Universal Series OD and  
OG series)

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.

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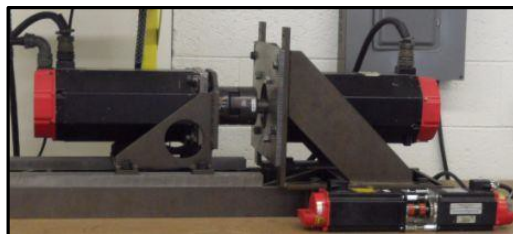
### Small HP Dynamic Load System

#### 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

Adjustable  
Amplifier  
Loading

Northline can also provide load-testing for your Fanuc servo amplifiers with our “Dynamic Load Control” station. Various-sized motors can be easily connected to a “Load” motor. The load motor generates voltage that can be applied to a resistor bank capable of handling up to 24K watts of power. The amount of voltage applied to the resistor bank can be adjusted from 0 to 100% thru PWM circuitry designed by Northline engineers. This allows us to load almost all Fanuc servo amplifiers up to their full ratings, providing true “System Testing”.



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

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Web : [www.northlineindustrial.com](http://www.northlineindustrial.com)

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Fax : 313-537-9895





**NORTHLINE**  
INDUSTRIAL

## Test Fixture Bulletin

[www.northlineindustrial.com](http://www.northlineindustrial.com)

### STI Opto Shield OS3101

#### 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

This is the STI OptoShield **OS3101** series of laser safety scanner. It is used in a variety of safety and control applications such as in automatic guided vehicles as well as high tech factory safety devices. Northline Industrial's OS3101 diagnostic system utilizes STI's **RM-2AC** safety interface monitoring module. The RM-2AC coupled with dedicated custom made control interfaces will ensure a valid diagnostic test every time. Consult your local Northline Industrial sales representative for service details on the STI OptoShield OS3101 Series of laser scanners today!

#### Capabilities Include:

OS3101

RM-2AC Safety  
Interface



*Contact your Northline sales representative for all of your  
STI OptoShield repair needs.*

Northline Industrial, Inc.  
12238 Woodbine  
Redford, MI 48239

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# Surplus Equipment Sales

## 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

With a large warehouse of surplus inventory, and numerous industry partnerships, we are able to source legacy, current production & OEM obsolete equipment. Our industry-leading repair lab supports testing of the Surplus Spares we sell. Popular manufactures inventoried such as Allen Bradley, Fanuc & Indramat. Northline Industrial offers a one year in-service warranty on all surplus items.

Northline specializes in finding obsolete and hard-to-find automation parts.



## Manufacturers Supported:

ABB  
Allen Bradley  
Cutler Hammer  
Eaton  
Fanuc  
General Electric  
Indramat  
Modicon  
Miller  
Reliance  
Sick Optic  
Siemens  
Sola  
Square D  
Yaskawa

Upgrading your System? We can help by selling the equipment you are removing from service while providing cost savings on the new equipment you require.



Please visit our E-bay store using the Link below. If you do not see your item listed, please contact your Northline Sales Representative. We are purchasing new inventory every day.

E-bay Store Link: <http://stores.ebay.com/Northline-Industrial/>

Email Surplus Sales: [sales@northlineindustrial.com](mailto:sales@northlineindustrial.com)

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### Telesis TeleScribe

#### 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:

SC3500  
TMC400  
TMC400/1700  
TMC400/4100  
TMC400/4150  
TMC400/6100  
TMC420  
TMC470  
TMM4250  
TMM5100  
TMP1700  
TMP3100  
TMP3200  
TMP4100  
TMP5100  
TMP6100

Below is Northline Industrial's Telesis TeleScribe series test jig. It was designed to dynamically test various Telesis pin stamp Marking systems. Northline rebuilds these servo driven units then utilizes this jig to assure precise, repeatable pin positioning - ensuring consistent appearance of the mark from part to part.



Contact your Northline sales representative for all of your Telesis servo motor repair needs.

Northline Industrial, Inc.  
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## Test Fixture Bulletin

[www.northlineindustrial.com](http://www.northlineindustrial.com)

# ELCo Enterprises “Torch Wizard” Reamer

## 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:

EL-NCS-AC-16-D  
[Ream, Spray & Cut](#)

EL-NCS-A-16-D  
[Ream & Spray Only](#)

Northline Industrial is pleased to announce the repair capability for the Torch Wizard MIG reamer. Torch Wizard Nozzle Cleaning Stations assist in maintaining quality and productivity in MIG welding cells by quickly and efficiently removing spatter build-up in the gas nozzle. Anti-spatter is applied evenly through two spray jets, allowing for simultaneous reaming & spraying thereby reducing cycle time by up to 50%!



Contact your Northline sales representative for all of your Torch Wizard reamer repair needs.

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**NORTHLINE**  
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## Test Fixture Bulletin

[www.northlineindustrial.com](http://www.northlineindustrial.com)

### Tregaskiss TT Reamer

#### 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:

Tregaskiss TT Reamer

Northline Industrial is pleased to announce the ability to dynamically test the Tregaskiss TT Reamers. Tregaskiss reamers are commonly used to maintain MIG welding nozzles in high production welding assembly processes. Tregaskiss is known as a world leader in weld system maintenance equipment. Contact your Northline Industrial Sales Representative for all of your Tregaskiss repair and service needs.



Contact your Northline sales representative for all of your Tregaskiss TT Reamer repair needs.

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**NORTHLINE**  
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# UATC-20 Temperature Control Module

### 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:

UATC-20 Temp Modules (115V  
& 220V)

### **\*Various Manufacturers\***

ITC  
IMS

This is the **UATC-20** temperature Control module. Northline has full repair capability and load testing for this thermal device. Many manufacturers make this module or ones similar to it. Whether it is configured for 220VAC or 115VAC, Northline covers them all!



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

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**NORTHLINE**  
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# Motor Vibration Analysis

## 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:

Fans  
Blowers  
Generic gearboxes  
(rolling element bearings)  
Machine tools Motors  
(servo, spindle)

The Fluke 805 is a Northline Industrial's latest investment in tools to improve repair quality, document repair variables, and speed our repair process on motor repairs. The 805 is a vibration meter that measures variation caused by device angle or contact pressure. This unit allows us to quickly measure overall vibration, bearing condition, and temperature. These quantitative numbers give us another tool to improve customer uptime by quickly diagnosing issues, documenting baselines for future repair, and as a final quality check on performed repairs. This unit allows for export and trending into an Excel document to track motor health throughout it's lifecycle.



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**NORTHLINE**  
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## Test Fixture Bulletin

[www.northlineindustrial.com](http://www.northlineindustrial.com)

# Welder 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

Let Northline Industrial be your source for repair of your inverter-duty and resistance weld equipment. Northline is a Factory-Authorized Service Center for Lincoln Electric, Fronius, Miller, Tregaskiss, OTC – Daihen, ESAB, Victor, Thermal Dynamics, and Thermal Arc weld equipment. From wire-feeders to entire robotic weld cells, Northline can refurbish and give new life to your repairable assets. System-testing is an important part of our service-philosophy and a service report is included with every repair. We perform load-bank and live weld testing to ensure a quality repair.



## Capabilities Include:

- MIG Welders
- TIG Welders
- Stick Welders
- Electrically driven Welders
- Reamers
- Robotically Controlled

ESAB  
Fronius  
Hobart  
Lincoln Electric

- SMAW
- GTAW
- GMAW
- Multi-Process
- Multi-Operator
- Advanced Process
- Robotic Automation
- Submerges Arc Wire feeders
- Semi Automatic Wire feeders

Medar  
Miller Electric

- Syncrowave Series
- Spectrum Series
- Delta Weld Series
- Invision Series
- Auto Delta Series
- Axxess Series
- Millermatic

Nasarc

- Intelliream

OTC Daihen

- D Series

Robotron



Square D  
Thermal ARC  
Thermal Dynamics  
Tregaskiss

- TT Reamer
- TT3E Reamer

Victor Technologies

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

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# Weltronic GEN 6000 Robotic MiniPak Weld Controls

## 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:

WTC GEN 6000  
Robot MiniPak

This is the **Weltronic (WTC) MiniPak** welder control for robotic applications. It is a self contained weld control system that mounts to the top of the robots control cabinet. It is a Mid Frequency Direct Current (MFDC) weld control that allows a smaller weld transformer to be physically mounted to the robot manipulator arm. Northline offers full dynamic load testing for these WTC MiniPak weld controls. Contact Northline for all of your WTC GEN 6000 weld control repair needs.



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

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# Yaskawa Motoweld EL-350

### 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:

Motoman EA1400N  
Manipulator

Yaskawa NX100  
Controller

Motoweld EL-350  
Inverter

Northline Industrial has made the investment in time and equipment to support your Motoweld EL350 Motoman Equipment. System-testing is an important part of our philosophy, so with a custom control box, Yaskawa wire-feeder, EA1400N Manipulator, NX100 controller and Miller Load bank, you are assured of a quality repair every time. A detailed service report is also included with every repair.



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

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**NORTHLINE**  
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## Test Fixture Bulletin

[www.northlineindustrial.com](http://www.northlineindustrial.com)

### Yaskawa Sigma Series

#### 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

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.



#### Capabilities Include:

**Sigma I: SGDA and SGDB**

**Sigma II: SGDH and SGDM**

**Sigma III: SGDS**

**Sigma V: SGDV**

Contact your Northline sales representative for all of your Yaskawa Sigma Series repair needs.

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### Yaskawa Sigma II Servo Motor Repair (200V Class)

#### 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:

SGMAH

SGMPH

SGMGH

SGMSH

SGMUH

SGMBH

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.



Contact your Northline sales representative for all of your Yaskawa servo motor repair needs.

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[www.northlineindustrial.com](http://www.northlineindustrial.com)

# Yaskawa Sigma V Series AC 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:

### Rotary

SGMMV  
SGMJV  
SGMAV  
SGMGV  
SGMSV

### Direct

SGMCS

### Linear

SGLGW  
SGLFW  
SGLTW

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.



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

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[www.northlineindustrial.com](http://www.northlineindustrial.com)

# Yaskawa Sigma V AC Servo Amplifiers

## 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:

### 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

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.



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### Component Level Testing

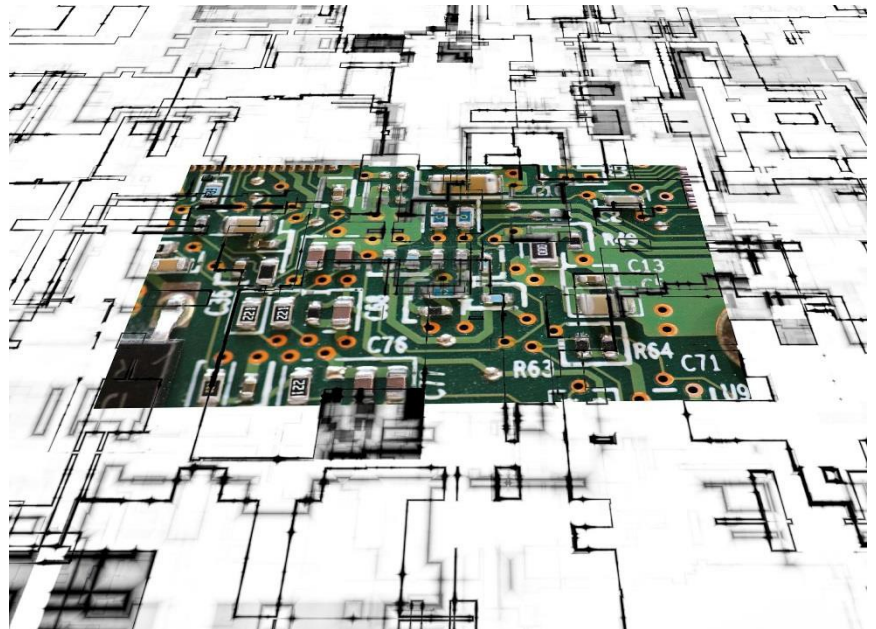
#### Automation Repair and Sales

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:

Printed Circuit Boards  
Modules  
Encoders  
Temp Sensors  
Counters  
Timers  
PLC  
Light Curtains  
Digital  
Analog

When either "System" or "Functional" tests are impossible or unfeasible, "Component Level" testing is used. Component Level testing is a methodology used to confirm the integrity on all the individual board subcomponents and traces. Specialized multi meters, oscilloscopes, continuity testers, capacitance meters, and Pin Point machines are used to confirm repaired/replaced equipment of this type. Traces and cold solder joints are reflowed and non conforming board level parts are replaced with new.



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**NORTHLINE**  
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# Full Function Testing

## 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:

Drives  
Power supplies  
Displays  
Servo Feedback Motors  
Welders

Full "Function" testing is a methodology used to ensure a quality repair on a subcomponent of your production machines. This is employed when a dedicated system test is unnecessary due to the nature of the part. Functional testing provides an dynamic closed loop test to confirm proper function or output of an individual device.

Specialized multi meters, oscilloscopes, power supplies, load banks, capacitance meters and specifically designed test jigs are the tools we use to achieve full-function testing of repaired components.



Contact your Northline sales representative for all of your Fanuc R30iA repair needs.

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[www.northlineindustrial.com](http://www.northlineindustrial.com)

### Shipping Instructions – US Customers

#### **Examples of items that might be shipped in standard boxes:**

Drives (small to medium - light)  
PLC (most)  
Terminals (small to medium)  
Amplifiers  
Power Supplies  
Boards  
Light Curtains (short to medium)  
Servo Motors (small)

#### **Examples of items that might need to be shipped in non-standard boxes (unusual-size or double-walled box:**

Drives (medium to large - heavy)  
Welders (small)  
Terminals (large/heavy)  
Power Supplies (very large/heavy)  
Light Curtains (long to very-long)  
Servo Motors (medium)

#### **Examples of items that might need to be shipped on a pallet:**

Drives (large to very large)  
Welders (medium to large)  
Power Supplies (very large/heavy)  
Spindle Motors  
Servo Motors (large to very large)

#### **Our Shipping Address\*:**

Northline Industrial, Inc.  
12238 Woodbine  
Redford, MI 48239

*\*No RMA is required! A Work Order # will be assigned upon receipt of the unit at Northline.*

#### **Please provide the following with your shipment:**

1. Purchase Order/Job Reference or Packing List.
2. Contact information (phone, address, etc.).
3. Indicate if the repair is a RUSH.
4. We encourage a problem description or symptom be included (if known).

#### **Packaging and Shipping Tips:**

1. Always use packing material when shipping in a box. DO NOT ship items loose in a box!!
2. DO NOT package large, heavy items with smaller, light-weight items.
3. Consider the weight of the item when selecting a package-type...heavy items (more than 70 lbs) should be secured to a pallet/skid for truck delivery.
4. Double-walled boxes offer more strength and protection than single-walled boxes.

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