ECTRON

Electronic Test Stations

Here are just a few of the different electronic systems available to test individual controls:

- Allen Bradley PLC1 through PLC5 test systems, SLC500, SLC150, Controllogix, Micrologix, Flex I/O
- Allen Bradley 7300, AB 1398, G & L Centurion, Electrocraft
- Allen Bradley 1394 Digital Servo Drive, Ultra
- Atlas Copco Powerfocus 300, Tensor S series & DS Series
- Banner
- Cincinnati Milacron APC500 (Acromatic programmable control)
- Barber Colman and Maco 4,400, 4000, 4500, 8000
- Baumuller BUG, BUM Series Drives
- Dolan-Jenner
- Fanuc System 18 NC
- General Electric series 1, 3, 5, 6, 90/30 and 1050
- General Electric DC 300
- Hitachi H series
- Ingersol Rand
- Jetter Drives and Controllers
- Koyo Kostac S-Series System
- Lincoln Electric Powerwave 450 / w/RJ2 Fanuc weldcell
- Lytron Tester
- Medar 500S Weld System
- Mitsubishi A1N series, A1S series, and K3 series
- Modicon Micro 84,184,284,384,484,584,884,984 systems, also Quantum series
- Omron C200H series, CQM1 series
- PinPoint II System
- Siemens S7, S5-100U, S5-115U
- Siemens Simoreg 610
- Siemens Simodrive 610 Drive System
- Square D Spot Welder
- Sauare D 8030 series



- Stanley Q1001 and controllers
- STI
- Sy/Max Square D
- TechMotive CS1000
- Telesis PinStamp
- Texas Instruments 520, 500, 505, and 5TI
- Uticor 4001 series
- Yaskawa Axis/Spindle Drive
- 400 Hertz Spindle Motors for High Speed Spindle Drives
- 15 HP, 25 and 75 HP Dyno for Testing AC and DC Drives (up to 200 HP)



Robotics

- ABB 1400 IRBS4C Robot
- ABB RID600 M93 Robot
- ABB S4P Paint Robot
- Comau Smart 3 Series 675
- Comau MicroBot C3G
- Fanuc M16 RJ3 Robot
- Fanuc \$10 Robot RJ2 LRMate
- Fanuc RJ2 ArcMate/ABB S3
- Fanuc RJ420F
- Fanuc P150Kuka KC1 Robot
- Kuka KR150
- Motoman ERC, MRC & XRC





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Paragon repairs electronic components from thousands of manufacturers every day. If you don't see a specific manufacturer, please call our knowledgeable customer service staff.









Barber Colman



Baldor



Fanuc



General Electric



Indramat



Modicon



Reliance

BRISTOL BABCOCK

BROWN & SHARPE

CEG AUTOMATION

CLEVELAND MACHINE

CONTROL CHEIF CORP

CLEVELAND MOTOR

BROWN SOVERI

CAL CONTROLS

CHROMALOX

CINCINNATI

BOSCH

BRANDT

BUEHLER

CMC

COMPAQ

CONAIR

COMPTROL

CONTRAVES

COMPUMOTOR

BRIDGEPORT



Square D









ABB ABB ROBOTICS AC TECHNOLOGY ACCU-CODER ACDC ELECTRONICS **ACROMAG**

ACROMARK ADEPT ADGO

ALLEN BRADLEY **ALLIED TELESIS ALLIS-CHALMERS** AMERICAN SIGMA

AMERICAN STANDARD **AMFTFK**

AMK AMPROBE ASI ROBOT ASI SYSTEM

ATHENA ATLAS ATLAS COPCO AUTOMATIC ELECTRIC AUTOMATRON AYDIN CONTROLS B&K

BABBITT BABCOCK **BACHMAN ELECTRONIC BADGER**

BALDOR BALLUFF BARBER COLMAN BARCO AUTOMATION **BATTENFELD**

BAUMULLER **BBC-BROWN BOVERI**

BEI ELECTRONICS **BENSHAW** BINDICATOR **BODINE ELECTRIC BORG WARNER**

CONTROL LOGIC CONTROL SYSTEMS CONTROL TECHNIQUES CONVERTER CONCEPTS **CSR CONTRAVES CURTIS INSTRUMENTS CURTIS INDUSTRIES CUTLER HAMMER** DAIWA DAKTRONICS INC **DANFOSS** DATA TECH DAYTON DAYTRONIC **DELAVAN DELCO PRODUCTS** DMF DOHRMANN DOLAN JENNER DRIVECON DUKANE **DURANT**



EATON IDT EATON KENWAY EATON LEONARD EKF ELEKTRONIK **ELECTRO-CRAFT ELECTRO-MATIC ELECTROMATIC** EMC CONTROLS INC **EMC MONITOR**

ENERPAC EPCO EPIC PRODUCTS CINCINNATI MILACRON **EUROTHERM**

FAGOR FANUC FARGO FAST HEAT FENCO FFNNFR

FENWAL FESTO FINCOR FIREYE

FISHER CONTROLS FISHER-ROSEMONT FUJI ELECTRIC **FUJITSU FURNAS**

FUTABA CORP GAI-TRONICS GALIL MOTION CONTROL **GAMAFLUX**

GASTON COUNTY GEC INDUSTRIAL GEC-ALSTHOM GEMCO

GENERAL ELECTRIC **GENICO GENICOM GETTYS** GIDDINGS & LEWIS

GLENTEK GMF GMF ROBOTIC: **GORDINIFR** GORDON ENG

GORMAN-RUP GOULD MODICON **GRACO**





HUNKAR LABS HURLTRON HYUNDAI **INDRAMAT INDUCTOHEAT** INGERSOLL-RAND INLAND MOTOR

ISB ISI ROBOTICS KAWASAKI **KB ELECTRONICS KEB**

KEB COMBIVERT **KFBA** KOLLMORGAN **KRAUSS-MAFFEI** KRISTEL CORPORATION

KUKA KURODA LAMBDA LEEDS & NORTHRUP LEESON LH RESEARCH

KUHNKE

LINCOLN ELECTRIC LION CONTROLS LOUIS ALLIS LOVE CONTROLS LUST ELECTRONIC MAGNAFLUX **MAGNETEK**

MAKINO MANNESMANN DEMAG



MATSUSHITA MAVILOR MOTORS MAZAK

MCC ELECTRONICS **MEDAR** MEIKI

METTLER-TOLEDO MIKI PULLEY MIKRON MINARIK

MINSTER MITSUBISHI MIYACHI MODICON **MOKON**

MORI SEIKI **NACHI** NIPPON ELECTRIC **NOVATEC** NOVOTECHNIK

OKUMA OMRON ONO SOKKI OPTO 22

ORIENTAL MOTORS ORMEC PACIFIC SCIENTIFIC

PANASONIC PARTLOW PARVUS

PAYNE ENGINEERING **PEGASUS** PEPPERL & FUCHS PHOENIX CONTACT

PLC DIRECT PMI MOTION **POWERS POWERTEC RAMCO RED LION REGLOPLAS**

RELIANCE REX ROTH RIMROCK **ROBICON**





SIEMENS SEIDEL SERVO DYNAMICS SEW-EURODRIVE SHINDENGEN SIEB & MEYER

SIEMENS SQUARE D SSD

STAR AUTOMATION STAR SEIKI STEGMANN

STERL-TRONIC **STERLCO** STI **STROMAG** SUMITOMO T & R ELECTRONIC TEMEMOTIVE **TEMPOSONICS**

TEXAS INSTRUMENTS THERMAL CARE TOEI ELECTRIC **TOSHIBA** TOTAL CONTROL TOYODA

TRIAD CONTROLS UNICO UNIVERSAL DYNAMICS UTICOR

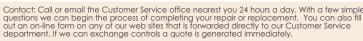
VICKERS VOLKMANN WARNER & SWASEY WATLOW

WESTAMP WESTINGHOUSE WHEDCO YAMATAKE-**HONEYWELL**

YASKAWA







DYNAMATIC

DYNAPOWER

DYNAPAR

DYNAPRO

EDC

EAGLE

Ship: Send the repair in for service, or if a local sales office is nearby it may be quicker for us to come and pick up, the item. If not, we can help you find the best method to get the repair into the

Evaluation: Once logged into our system with a "lifetime" ID number, your product moves to the appropriate department for initial evaluation and quoting of the repai

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O MOTOR REPAIR



PROCEDURES FOR SERVO MOTOR REPAIR

- Hypot and Megohm test the winding for shorts to ground during run-in and run-out
- Verify magnet strength & shorts between phases with back EMF testing
- Recondition or rewind windings
- Replace bearings and seals when needed
- Replace machine pilot, shaft and mounting area if needed
- Replaced damaged connections
- Verify encoder operation with custom software design to check optics, processor and communication signals
- Run on system drive
- Paint



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AC SERVO MOTORS



Giddings & Lewis Hauser



ABB Robotics

Allen Bradley



Indramat





Mitsubishi





Baumuller

Baldor



Moog



Pacific Scientific



Milacron Panasonic

Cleveland Motor

Sanyo Denki

Control System Research

SEM

Siemens

Electrocraft

Yaskawa

Emerson



Fanuc

Getty's

ac spindle motors

Allen Bradley

Bailey



Baldor

Cincinnati

Contraves



GE Fanuc

Getty's

Indramat

Mark 2

Milacron

Mitsubishi

Setco

Siemens

















DC SERVO MOTORS

AEG Nikki Denso

ABB Robotics Pacific Scientific

Allen Bradley **Parvex**

Peerless-Winsmith Baldor

Bosch Porter

Cincinnati Powertron

SEM Milacron

Cleveland Motor Siemens

Danaher Socapel

Winsmith Eberhard

EG&G Torque Yaskawa

Electrocraft Zumbach

Emerson

Fanuc

Ferrite

Getty's

Gould

Indramat

Inland

Kollmorgen

Lenze

Magnetek

Mavilor



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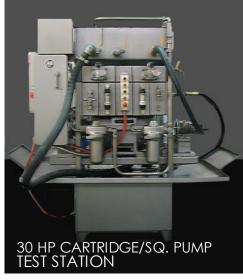
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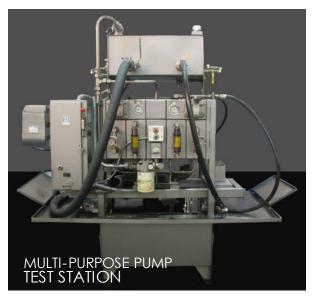
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Testing on the finest test stands in the industry. Here is just a small example of the state-of-the-art equipment we use.







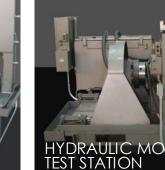














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At Paragon, all hydraulic components are tested to within 100% of the rated flows and pressures for new set down by the original equipment manufacturer. Every hydraulic component offered by Paragon is the product of years of research and experience to produce a remanufactured product that performs as well as new. Our proven procedure provides for fast turn-around and delivery.

Paragon repairs all of the hydraulic components listed and a large number of hydraulic components in the following categories:

Cartridge Kits • Piston Motors

Standard Hydraulics are available for immediate exchange!

REXROTH A10VSO

A10VSO28 A10VSO100 A10VSO45 A10VSO140 A10VSO71



VICKERS PVH PVH98 PVQ10 PVQ13 VICKERS PVE

PVE12 PVE35 PVE19 PVE47 PVE62 PVE21 PVE27



VICKERS PVB

PVB5 PVB29 PVB6 PVB45A PVB10 PVB45 PVB15 PVB90 PVB20





PVH57 PVH74 PVH131

VICKERS PVQ PVQ20

20V8

20V2 25V12 25V14 20V5 25V14

VICKERS VHO and VQ

25V17 45V42 25V17 25V21 45V50 45V60 20V11 2520V 35V25 20V12 25V21 35V30 50V72 20V14 25V12 35V35 50V85



REX ROTH

Vane Pumps

1PV1V4 1PV2V4 1PV2V3 1PV6V3



A2F/A2F0 A2V/A2VK A7V/AA7V A3V 900CV A2FM/AA2FM A4F

DENISON

Vane Pumps

Piston Pumps

VICKERS

Combination

Round Pumps

Round Pumps

T5DC/T6DC

T5EC/T6EC

T5ED/T6ED

T5E/T6E

TMB

TMC

PV07

PV08

PV09

VC128 VC129

VC138 VC139

VC148

VC149

V2324

V2325

V360 to

V470

V2341 V2342

V2360

V2361 V2362

A4V/AA4V

TIC TID

T2D

PF07

PF08

PV05

PV06

VC10 VC29

VC39 VC49

VC108

VC110

V108 V109 V110 V2304 V2305 V2311 V25 V35

V45

V124 to

V149

V2320

T5C/T6C

T5D/T6D

T5CC/T6CC

VICKERS

Small Series Round Pumps

V104 V111 V105



Bent Axis Pumps

Vane Pumps

PV2008 PF2003 PF2008 PV2012 PV2020 PF2012 PF2020

PFA 50 PFA 120 PV2003



3520V 25V 35V 3525V 45V 4520V 50V 4525V 2520V 4535V



0

Directional Valves

DF5S4 DG4V3 DG4S4 DG5S8

Flow Control Valves

FG-03 FCG-02 FCG-03 FG-06 FG-02



Pressure Control Valves

CF-16 CG-03 RT-06 CG-06 RT-10 CG-10 CS-03 XCF-16 XCG-03 CT-06 XCG-06 CT-10 XCG-10 RCF-16 XCT-03 RCG-03 XCT-06 RCG-06 RCG-10 XCT-10 XF-16 RCT-03 XG-03 RCT-06 XG-06 RCT-10 XG-10 XT-03 XT-06 XT-10 RG-03 RG-06 RG-10



VICKERS

35V38

MHT Motors

MHT32	MHT 220
MHT 50	MHT 250
MHT 70	MHT 380
MHT 90	MHT 440
MHT 110	MHT 500
MHT 130	MHT 690
MHT 150	MHT 750
MHT 190	MHT 1000



Vane Motors

25M 35M



Bent Axis Motors

MF 2003 MF 2008 MF 2012 MF 2020 MFA 120 MFA 50



BOSCH/MOOG

RKP Pumps

0514-700 (63cc) 0514-800 (80cc) 0514-300 (16cc) 0514-400 (19cc) 0514-500 (32cc 0514-900 (90cc 0514-600 (45cc)



BOSCH/RACINE

Piston Pumps

H-20 C-11 Dual C-11 Single H-80



Vane Pumps

PVQ5 or 6/PSQ PVQ5 or 6 (Dbl.)	PSV 80 PSV 100 PVF12,20,30
PSV 10	PVK 70
PSV 15	PVR 40
PSV 20	PVS 10, 12
PSV 25	PVT 25
PSV 40	

HYDRAULIC CYLINDERS

- Milwaukee
- Parker
 - Hydroline
- Miller



Plus Thousands More...

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PROCEDURES FOR SERVO VALVE REPAIR

- Visual inspection and evaluation on test stand for initial comparison to manufacturer's specifications.
- Valve is disassembled.
- Every part is chemically cleaned with solvents.
- Torque motor is dismantled down to wires and magnets.
- All parts are inspected and checked to ensure they are within manufacturer's tolerances and specifications.
- Failed parts are replaced with original manufacturer components.
- Torque Motor is totally remanufactured.
- Each magnet is re-magnetized to full strength.
- All nozzles are adjusted.
- Feedback wire is checked for wear and performance.
- Motor is rewired and assembled with new Viton Seals.
- Torque motor is then tested and calibrated to manufacturer's specifications.
- Valve Body is inspected to ensure it is within manufacturer's tolerances.
- Body spool assembly is checked for wear.
- If needed the body and/or body spool assembly is replaced with new from the original manufacturer, assembled using new Viton seals and a new filter from the valve manufacturer.
- The torque motor and body are reassembled, tested to 100% of specifications for flow and pressure established by the manufacturer.
- Once tested to manufacturer's specifications, a test report and computer plot is included with the repair.













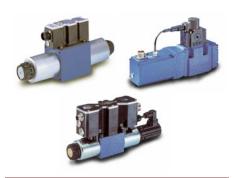
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REX ROTH

4WS2EM10 4WRA 3DREP6 4WRAE **4WRDE** 4WRE 4WRE10 **4WREE DBETR 4WREDE FE Series** 3DREP 4WRK 3DREE 4WRKE 10-35 3DS2EH Series 3DSE2EH

4WRTE



PEGASUS

120	132	162
121	140	180
122	142	1160
130	160	1282
131	161	





ATCHLEY		
205	211	230
206	214	231
207	215	240
208	218	241
209	225	2/12

DYNAMIC		
1	10	15
5	12	25



BOSCH

(Directional (Pressure Control)
Control) NG6
NG6
NG10 (Throttle Valve)
NG16 NG6
NG25 NG10
NG32





MOOG

62-1xx	656
62-3xx	660 - 665
631-xxx	D761
72-xxx	D769-xxx
73-xxx	79-1xx
76-xxx	79-2xx
A076-xxx	D079
760-xxx	765
77-xxx	88
78-xxx	631
79-30x	691
641	D791
642	D792
643	
644	Servoactuators
645	A085
650	856
651	853

ABEX			
410	415	425	450

652



VICKERS

SM4-10 (Pressure Control)
SM4-15 EHST
SM4-20 CGE-02
SM4-40 CGE-06
CGE-10

SUNSTRAND

MCV 101 MCV 105 MCV 102A MCV 110 MCV 103 MCV 116 MCV 104



PARKER

DY **BD15 BD30 EHD** D111 PC1 PC2 D1 D3 PE1 D4 PE2 **D8** PE3 РΗ D9 DW TDA



OILGEAR

VSC4-R03 VSC4-R05 VSC4-R04 VSC4-R07

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