



Joining to Promote Resistance Welding Excellence

Technical / Membership / International / Education / Networking





Resistance Welding Manufacturing Alliance

Joining to Promote Resistance Welding Excellence

550 NW LeJeune Road Miami FL 33126 (305) 443-9353 (800) 443-9353 – toll free Fax: (305) 442-7451 E-mail: rwma@aws.org Web: http://www.aws.org/rwma

Executive Director American Welding Society Ray Shook Ext. 210 rshook@aws.org

Associate Executive Director American Welding Society Jeffrey Weber Ext. 246 jweber@aws.org

RWMA Secretary RWMA Program Manager Susan Hopkins Ext. 295 susan@aws.org

Objectives of the RWMA

- To promote the technical and economic advantages of resistance welding.
- To support education relating to the safe and proper use of equipment and accessories used for resistance welding.
- To promote the advancement of standards and practices relating to the design, testing, installation, operation, and maintenance of resistance welding equipment.
- To support the development and use of process and procedure standards relating to the proper uses of such equipment.
- To encourage industry participation, networking, and the highest standards of conduct.

RWMA Mission Statement

The mission of the RWMA Committee of AWS is to advance resistance welding technology, broaden its use, and promote its economic benefits.

RWMA Officers & Directors

Officers

Chair Wade Burnette NSRW, Inc.

First Vice Chair Mark Gramelspacher CMW Inc.

Second Vice Chair Ed Langhenry, Jr. Watteredge, Inc.

Directors Immediate Past Chair Roger Hirsch Unitrol Electronics, Inc.

Machinery Division Representative Richard (Dick) Vreeland Ewald Instruments Corp./PTS.

Alternate Edmundo Narvaez Lors Machinery, Inc.

Copper Products Division Representative Dan Wellman Obara Corp., USA

Alternate Jeff Schemel CMW Inc.

Components Division Representative Dan Uszynski CenterLine (Windsor) Ltd.

Alternate J. P. Derdeyn Techno-Control Cybernetic, Inc.

Active Past Chairs

Michael Simmons Resistance Welding Products (1987), Ltd.

Larry Moss Automation International, Inc.

David Beneteau

CenterLine (Windsor) Electrode & Allied Products Division

RWMA Committees & Chairs

Education Committee

Chair – Tom Snow T.J. Snow Company

Vice Chair – John Collins Spotwelding Consultants

Scholarship Subcommittee RWMA Representative - Kurt Hofman RoMan Manufacturing, Inc.

Welding School Subcommittee Chair – Don Sorenson ENTRON Controls, LLC

Vice Chair – Mark Siehling RoMan Manufacturing, Inc.

Executive Committee

Chair - Roger Hirsch Unitrol Electronics, Inc.

Executive Finance Committee

Chair - Ed Langhenry, Jr. Watteredge, Inc.

Marketing Committee

Chair - Danny Thomason Dimplex Thermal Solutions

Vice Chair - Jeff Schemel CMW Inc.

Web Site Subcommittee Chair – Priyesh Dodhia Tuffaloy Products

Newsletter Subcommittee Chair – Bill Brafford Tuffaloy Products

Membership Committee

Chair – Garret Herringdon Southern Copper & Supply

Vice Chair – Mark Gramelspacher CMW Inc.

Member Recruitment Subcommittee Chair – Robert (Bob) Cupchak NGK Metals Corporation

Strategic Planning Committee

Chair – Michael Simmons Resistance Welding Products (1987), Ltd.

Technical Committee

Chair – Don Maatz RoMan Engineering Services, Inc..

Vice Chair - TBD

RWMA Past Presidents/Chairs

Walter A. Anderson E. S. Smith Malcolm S. Clark Preston M. Hall Fred H. Johnson Floyd E. Taylor Charles Eisler Harold B. Warren George N. Sieger Theodore S. Long Ben L. Wise T. Embury Jones Harry V. Beronius, Jr J. Roy Barefoot Fred R. Learman John C. Wilson, Jr. David V. Uihlein William H. Carrigan Simon Fisher Harry V. Beronius, Jr. Arend Bruinsma Walter P. Simmons John F. Nichols Roy K. Haugseth F. A. "Dutch" Bodenheim Dean L. Knoght Mondo L. Baldwin Andrew Hunter William G. Emaus Emmet A. Craig Ben Grzegorek Donald J. Beneteau James TiegIman Robert Hofman Sanford L. Lee Harry S. Radcliff Patricia S. Adams William Qualls William Qualls William H. Brafford	1938-39 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952-53 1954 1955-56 1957-58 1957-58 1959-60 1961-62 1963-64 1965-66 1967-68 1965-66 1967-68 1965-70 1971-72 1973-74 1975-76 1977-78 1979-80 1977-78 1979-80 1981-82 1983-84 1985-86 1987-88 1987-88 1987-88 1989-90 1991 1992-93 1994-95 1996-97 1998-99 1999-01
William Qualls	1998-99
Larry Moss Michael Simmons Roger Hirsch	2004-06 2007-08 2009-10

Elihu Thompson Resistance Welding Awards Past Recipients

- 1986 T. Embury Jones Precision
- 1987 H. A. Neid General Electric
- 1988 S. Fisher Newcor
- 1989 Joseph H. Cooper Taylor-Winfield
- 1990 A. W. Schueler Precision
- 1991 J. F. Deffenbaugh Wean United
- 1992 L. J. Murto Peer
- 1993 C. J. Collom
- 1994 J. P. Thorne Newcor
- 1995 Donald J. Beneteau CenterLine
- 1996 Dietrich K. Roth RoMan Mfg., Inc.
- 1997 John Nichols RWC, Inc.
- 1998 Edward Green Taylor-Winfield
- 1999 Walter D. Simmons Tuffaloy Products
- 2000 Robert G. Cuff ENTRON Controls
- 2001 Jim Morrissey
- 2002 John Sant
- 2003 T. James Snow, Sr. T. J. Snow Co.
- 2004 Bob Matteson Taylor-Winfield
- 2005 Bob Hofman RoMan Mfg., Inc.
- 2006 Sandy Lee RWC, Inc.
- 2007 Howard D. Johnston CMW Inc.
- 2008 Bob White, Sr. Janda Co.
- 2009 Larry Moss Automation International, Inc.
- 2010 David Beneteau CenterLine (Windsor) Ltd.

RWMA Calendar of Events 2011

May 11 - 13

AWS Weldmex, Metalform Mexico & Fabtech Mexico Cintermex Exposition Center Monterrey, Mexico

November 14-17

FABTECH INTERNATIONAL & AWS WELDING SHOW McCormick Place Chicago, Illinois

November 16-17

Emmet A. Craig Resistance Welding School McCormick Place Chicago, Illinois

November 16

RWMA Tabletop Exhibits McCormick Place Chicago, Illinois

> For a complete list of RWMA Calendar of Events, please visit our Website at www.aws.org/rwma

Resistance Welding Literature

To promote the resistance welding process, the RWMA offers a variety of publications, articles, videos, schools and manuals, some of which include:

Resistance Welding Manual

The most "authoritative text" of the industry. Describes the entire resistance welding process, including theory, methods, materials, equipment and accessories through hundreds of pages of text, photos and graphs.

The Basics of Resistance Welding

A comprehensive training video that covers all four processes—spot, projection, seam and flash/butt welding. It explains the basic principles of these processes, the components of the machines, electrodes, tooling, controls and transformers, including basic machine set up. It is a great tool to introduce your new and experienced personnel to the resistance welding process. Available on DVD.

Resistance Welding Manual, Revised 4th Edition

The Resistance Welding Manufacturing Alliance has set the standard for resistance welding worldwide. RWMA's most authoritative text about resistance welding industry is an absolute must for anyone who wants to increase production capabilities, upgrade product quality and maximize the use of manufacturing resources. The Resistance Welding Manual, Revised 4th Edition describes the entire resistance welding process including theory, methods, materials, equipment and accessories. The revised edition includes many new features such as updated weld processes, new graphic format for easier reading of weld schedules and information on newer metal alloys, such as hot dip galvanized and electro-plated steel.

Bulletin #5 – Resistance Welding Control Standards

An extensive publication that examines Single Phase AC, Three Phase AC, Frequency Converter and Inverter controls. The bulletin discusses general standards, terminal markings plus connections, contactors, and enclosure standards used in resistance welding controls.

Bulletin #14 – Maintenance Manual for Resistance Welding Machines

Tips on installation, maintenance recommendations, including quality control and preventative maintenance schedules. Geared for both maintenance personnel and the operator. A "troubleshooting" section is included.

Bulletin #16 – Resistance Welding Equipment Standards

A comprehensive bulletin consisting of RWMA standards for welding equipment, including electrical, electrode, and fluid-power standards.

Bulletin #34 – Manufacturers' Cross Reference of Standard

Resistance Welding Electrode Numbers and Alloys Includes an extensive cross reference of standard resistance welding electrodes and alloys recognized by the RWMA.

AWS C1.1M/C1.1, Recommended Practices for Resistance Welding

This ANSI approved standard covers spot, seam, projection, flash, and upset welding, as well as weld bonding for uncoated and coated carbon and low-alloy steels, aluminum alloys, stainless steels, nickel, nickel-base alloys, cobalt-base alloys, copper and alloys, and titanium and alloys. It details equipment and setup, welding variables, joint preparation, cleaning, welding schedules and parameters, weld quality testing, safety, and health.

AWS C1.4M/C1.4,Specification for Resistance Welding of Carbon and Low-Alloy Steels

This ANSI approved standard provides the shear strength and weld button diameter requirements for carbon steel and low-alloy steel sheet resistance and projection welds.

AWS RWPH, Resistance Welding Pocket Handbook

This booklet contains basic information on resistance welding, important "do's" and "don'ts", common weld defects and their probable causes, and various charts including sample weld schedules. It supersedes and updates the RWMA Quickie Reference Manual.

RWMA INFORMATIONAL DVD AVAILABLE



COVERS:

- Basics of Resistance Welding
- Opportunities and growth
- Rudiments of Resistance Welding
- Advantages and Benefits
- Career path in resistance welding
- Tips for implementing resistance welding into a school's curriculum, and inclusion in the occupation-specific competencies.

This DVD can be provided as a tool to educators to promote the education of the resistance welding process.

If you would like your free copy of this DVD, contact Susan Hopkins, RWMA Manager, at susan@aws.org, or 800-443-9353, ext. 295.



Education

The Emmet A. Craig Resistance Welding School

Industry experts from RWMA member companies conduct this two-day introductory course focusing on the cost-effective, highly productive resistance welding process. The school is designed to give operators, production supervisors, engineers and others the opportunity to study, better understand, and further their knowledge in the theory, applications and equipment used in the resistance welding process. This intense learning atmosphere will better prepare the unfamiliar and further educate the experienced. With published handouts and live machine demonstrations, this school combines an instructional forum with open dialogue discussions.

Topics Include:

- Welding Processes and Machines
- Electrodes and Tooling
- Welding Controls
- Electrical Power Systems
- Machine Control Systems
- Machine Set-up

Upcoming Schools

Emmet A. Craig Resistance Welding School McCormick Place November 16-17, 2011 Chicago, Illinois

For more information or to register, contact RWMA headquarters at (305) 443-9353, or visit www.aws.org/rwma

Alphabetical Index

Acme Electric Welder Company Apex Controls, Inc.	20 69
Automation International, Inc. B	20
Banner Welder, Inc. BF ENTRON, LLC	22 54
Brush Wellman, Inc.	69
Cadi Company, Inc.	41
CAL Manufacturing Company, Inc. CenterLine (Windsor) Ltd., Automation Components Division	56 56
CenterLine (Windsor) Ltd., Electrodes & Allied Products Division	41
CMW Inc.	43
Conan Ind. E Com de Produtos Eletro-Eletronicos Ltda.	22
Consultores y Servicios Industriales, S.A. de C.V.	22
Cybersmith Engineering D	24
Darrah Electric Company	57
Dengensha America Corporation	70
Dimplex Thermal Solutions E	57
ECKA Granules of America	45
Electron Beam Technologies, Inc.	59
ENTRON Controls, LLC	59
ETAL S.A. de C.V.	60
Ewald Instruments Corporation/PTS F	24
Flex-Cable	62
Freeport-McMoRan Copper and Gold – Bayway Operations	72
Fusion Welding Solutions G	72
General Electrode Engineering Co., Inc. (GEECO)	45
Gilbert Industrial, Inc.	25
Guild International, Inc.	25
Heron Machine & Electric Industrial Co., Ltd.	25
Huys Industries Limited	45
Huys Welding Strategies, Ltd.	74
Icesa Welding Systems	26
Industrial Supplier Larey, Inc.	74
Intertron Industries, Inc.	62
J Janda Company, Inc.	26

K	
Koyo Giken, Inc. Kriton Weld Equipments Pvt. Ltd. KVA Resistance Welding Supply	28 28 75
L	
Lake Welding Supply Co. LORS Machinery, Inc. Luvata Ohio, Inc.	75 29 46
Manufactura y Suministros Industriales,	47
S.A. de C.V.S. (MASINSA) Manufacturas En Cobre Aleado S.A. de C.V. Matuschek Welding Products, Inc.	75 62
Mechelonic Welders Pvt., Ltd. Miyachi Unitek Corporation MTI Welding Technologies, Ltd. <i>(formerly British Federal)</i>	30 30 31
National Bronze & Metals, Inc. NGK Metals Corporation NIMAK Braeuer North America Inc . Ningbo Powerway Alloy Materials Co., Ltd. Nonferrous Products, Inc. NSRW, Inc.	76 76 31 76 77 33
Obara Corp., USA	48
P Prevail Technology (Shenzhen) Co., Ltd. Q	33
Quality Brass Foundry Quality Honeycomb, Inc.	77 79
R Resistance Welding Machine & Accessory Resistance Welding Products (1987), Ltd. Rolasol S.R.L. RoMan Engineering Services, Inc. RoMan Manufacturing, Inc. RWC, Inc.	79 49 34 79 64 34
Sciaky, Inc.	35
Schaky, Inc. Schreiber Engineering Corporation Seedorff Acme Corporation Shanghai Mountain Welding Industries Co. Sherbrooke Metals Corporation Southern Copper & Supply Spotwelding Consultants, Inc. Standard Resistance Welder Co.	 35 64 35 35 80 80 80 82 36
Taylor-Winfield Technologies Tec-Option Techno-Control Cybernetic, Inc. T 13	36 37 64
10	

Tecna S.p.A.	37
Tennessee Rand, Inc.	38
Thomas Bolton, Ltd.	49
Tipaloy, Inc.	50
T. J. Snow Company, Inc.	38
Tower International	82
Tuffaloy Products, Inc.	51
U	
Unitrol Electronics, Inc.	65
W	
Watteredge, Inc.	66
WeldComputer Corporation	66
Weld Management Solutions, Inc.	83
Welform Electrodes, Inc.	51
Z	
Z. J. Industries, Inc.	52

Geographical Index

ALABAMA

Fusion Welding Solutions NSRW, Inc. Resistance Welding Machine & Accessories Southern Copper & Supply

CALIFORNIA

ACME Electric Welder Company Intertron Industries, Inc. Janda Company, Inc. Miyachi Unitek Corporation

CONNECTICUT

Cadi Company, Inc. Ewald Instruments Corporation/PTS

GEORGIA

Standard Resistance Welder Co. Division of Jim Dally & Assoc., Inc. NIMAK Braeuer North America Inc.

ILLINOIS

Automation International, Inc. Electron Beam Technologies, Inc. Sciaky, Inc. Unitrol Electronics, Inc. Z.J. Industries, Inc.

INDIANA

CMW Inc. Nonferrous Products, Inc.

IOWA

Cybersmith Engineering

KENTUCKY

Obara Corp., USA

MARYLAND

General Electrode Engineering Co., Inc. (GEECO) KVA Resistance Welding Supply

MASSACHUSETTS

Gilbert Industrial, Inc.

MICHIGAN

Apex Controls, Inc. Brush Wellman, Inc. Cadi Company, Inc. CAL Manufacturing Company, Inc. CenterLine (Windsor) Ltd. Automation Components Division CenterLine (Windsor) Ltd. Electrodes & Allied Products Division Dengensha America Corporation **Dimplex Thermal Solutions** Flex-Cable **Fusion Welding Solutions** Lake Welding Supply Co. Matuschek Welding Products, Inc. Obara Corp., USA Quality Brass Foundry Resistance Welding Machine & Accessory RoMan Engineering Services, Inc. RoMan Manufacturing, Inc. RWC, Inc. **Stegner Controls** Tec-Option Tipaloy, Inc. **Tower International** Welform Electrodes, Inc.

NEW JERSEY

FREEPORT-McMoRAN Copper and Gold Bayway Operations LORS Machinery, Inc.

NEW YORK

WeldComputer Corporation

NORTH CAROLINA

Huys Industries Limited Huys Welding Strategies, Ltd.

OHIO

Brush Wellman, Inc. Darrah Electric Company Dengensha America Corporation Guild International, Inc. Luvata Ohio, Inc. Sherbrooke Metals Corporation Taylor-Winfield Technologies Watteredge, Inc.

SOUTH CAROLINA

BF ENTRON, LLC ECKA Granules of America ENTRON Controls, LLC Gilbert Industrial, Inc. Tuffaloy Products, Inc.

TENNESSEE

NGK Metals Corporation Tennessee Rand, Inc. T.J. Snow Company, Inc.

TEXAS

Industrial Supplier Larey, Inc. National Bronze & Metals, Inc. Quality Honeycomb, Inc. Spotwelding Consultants

WISCONSIN

Banner Welder, Inc.

International

ARGENTINA

Rolasol S.R.L.

BRAZIL

Conan Ind. E Com de Produtos Eletro-Eletronicos Ltda.

CANADA

CenterLine (Windsor) Ltd. Automation Components Division CenterLine (Windsor) Ltd. Electrodes & Allied Products Division Dengensha Corporation Huys Industries Limited Huys Welding Strategies, Ltd. Resistance Welding Products (1987), Ltd. Techno Control Cybernetics, Inc. Tipaloy, Inc. Weld Management Solutions, Inc.

CHINA

Heron Machine & Electric Industrial Co., Ltd. Luvata Ohio, Inc. Ningbo Powerway Alloy Materials Co., Ltd. Prevail Technology (Shenzhen) Co., Ltd. Shanghai Mountain Welding Industries Co., Ltd. Welform Precision, Ltd.

GERMANY

Dimplex Thermal Solutions (Riedel)

INDIA

Kriton Weld Equipments Pvt., Ltd. Mechelonic Welders Pvt., Ltd.

ITALY

Tecna S.p.A.

JAPAN

Koyo Giken, Inc.

MEXICO

Consultores y Servicios Industriales, S.A. de C.V. Dengensha Corp. ETAL, S.A. de C.V. Huys Industries Limited Huys Welding Strategies, Ltd. Icesa Welding Systems Manufactora y Suministros Industriales, S.A. de C.V. (Masinsa) Manufactores en Cobre Aleado S.A. de C.V. Obara Mexico, S.A. de R.L. de C.V.

UNITED KINGDOM

BF ENTRON, LLC Bolton Power Ltd. Luvata, Inc. MTI Welding Technologies, Ltd. *(formerly British Federal)* Thomas Bolton, Ltd.

Machinery Division

These companies are designers and builders of quality standard and special resistance welding machinery, complete lines of special or multi-purpose high production machines, completely automated production lines, and special automatic production equipment for the metal-working industry which incorporate spot, butt, flash, projection, and seam welding processes.

ACME ELECTRIC WELDER COMPANY

(Seedorff Acme Corporation) 1338 N. Knollwood Circle Anaheim, CA 92801 Phone: 714-252-5330 Fax: 714-252-5335 E-mail: info@seedorffwelders.com Web: www.seedorffwelders.com

KURT SIMON, President/CEO E-mail: kurt@seedorffwelders.com ERNST GASTEIGER, Vice President E-mail: ernie@seedorffwelders.com HELMUT SIMON, Engineering E-mail: helmut@seedorffwelders.com

BRANCHES

SAN DIEGO OFFICE E-mail: sd@seedorffwelders.com

PRODUCTS MANUFACTURED

Manufacturer of quality production resistance welding machines and equipment in Los Angeles, California since 1918. Machine types include: Rocker Arm, Press/Projection, Seam, Butt, Portable Gun, Trans-Gun, Miniature Gun, Multi-Spot, Cross Wire panel/truss, Special Application (semiautomatic or fully-automatic), and Reconditioned-to-New machines. Available in Single Phase AC, Secondary Rectified DC, and Medium Frequency Inverter DC. Industries served include: Automotive, Aerospace, Sheet Metal, HVAC, Wire, Construction, Office Furniture, Appliance, Electronics, Nuclear, and US Government.

AUTOMATION INTERNATIONAL, INC.

 1020 Bahls Street

 Danville, IL 61832-3389

 Phone:
 217-446-9500

 217-446-9504

 Fax:
 217-446-6855

 E-mail:
 sales@automation-intl.com

 Web:
 www.automation-intl.com

LARRY E. MOSS, President/CEO

E-mail: Imoss@automation-intl.com

TERRY PROSSER, Vice President/CFO

E-mail: tprosser@automation-intl.com TIM FOLEY, Sales Manager

E-mail: tfoley@automation-intl.com SHERIFF MOHAMMED, Engineering Manager E-mail: smohammed@automation-intl.com

BRIAN GALLAGHER, Production Manager

E-mail: bgallagher@automation-intl.com

PRODUCTS MANUFACTURED:

All resistance welding machinery including spot, projection, seam and flash butt welders. Full design and manufacturing capabilities. Complete automated systems, both welding and assembly. Wheel manufacturing equipment. A.C. and D.C. transformer design and manufacture. Robotic systems, automated arc welding systems, Mil-W spec. welders, technical



ACME'S BACK

Rocker Arm Welders	Inverter Welders
Press Type Welders	Bench Welders
Multi-Spot Welders	Seam Welders
Custom Welders	Butt Welders
Miniature Gun Welders	Gun Welders
Reconditioned Welders	Tooling

Inverter Welders
Bench Welders
Seam Welders
Butt Welders
Gun Welders
Tooling





www.acmewelders.com Call Toll Free: 866-737-9353



AUTOMATION INTERNATIONAL, INC. (cont.)

services, rebuilding expertise, control design and software development.

BANNER WELDER, INC.

 N117 W18200 Fulton Drive

 Germantown, WI 53022

 Phone:
 262-253-2900

 Fax:
 262-253-2919

 Web:
 www.bannerweld.com

JOHN WALDRON, President

E-mail: jwaldron@bannerweld.com ROBERT KERR, Vice President, Sales

E-mail: bkerr@bannerweld.com

BRAD MARK, CFO

E-mail: bmark@bannerweld.com

PRODUCTS MANUFACTURED:

Standard resistance spot, seam, butt and projection welders; portable gun welders. Integrated robotic applications. Special automated assembly machines. Special automated transferring devices. Special automatic arc welding equipment. All types of specialized automatic, multi-gun resistance welders. Dies and special tooling. Build to print.

CONAN IND. E COM DE PRODUTOS ELETRO-ELETRONICOS LTDA.

Av. Capuava-260 Santo Andre SP 09111-000 BRASIL Phone: 55-11-4978-0540 Fax: 55-11-4474-4955 E-mail: conan@conancontroles.com.br Web: www.conancontroles.com.br

DONIZETE MANOEL MIRANDA, Director E-mail: diretoria@conancontroles.com.br SAULO DOS REIS MIRANDA, General Manager E-mail: sac@conancontroles.com.br LUCINEIA MIRANDA, Secretary E-mail: clientes@conancontroles.com.br EDUARDO RODRIGUES, Technician

E-mail: engenharia@conancontroles.com.br

PRODUCTS MANUFACTURED:

ConAn Industria e Comercio Ltda. is a Brazilian company dedicated to the area of projects and manufacturing of single phase and three phase DC inverter resistance welding machines. Electronic controls for the resistance welding process and technical assistance. Engineering specialized in the resistance welding process develop standard and special machines. The solid technical background of its professional staff experienced through the most varied projects implanted in the last twenty years in Brazil. This enables ConAn, through its exclusive operational systems, to guarantee the most rigorous standards with deliveries and costs that attend to the real needs of its clients.

CONSULTORES Y SERVICIOS

 INDUSTRIALES, S.A. DE C.V.

 Jardineros #98-A Penuelas

 Queretaro, Qro. 76148

 MEXICO

 Phone:
 011-52-442-220-78-73

 Fax:
 011-52-442-220-79-33

BANNER WELDER,

N117 W18200 Fulton Dr.

Germantown, WI 53022 Website: <u>http://www.bannerweld.com</u> Phone: 262-253-2900 Fax: 262-253-2919

Wisconsin Owned and Operated Since 1948 Specializing in the Manufacture of Customized and Standard Model Welders

CONTACTS:

Bob Kerr, VP Sales Email: bkerr@bannerweld.com, Ph: 262-253-2664 Mary Donaldson, Parts & Customer Service Ph: 262-253-2668/Email: mdonaldson@bannerweld.com

SYSTEM CAPABILITIES

- Spot, Projection, Seam, AC/DC Single &Three-Phase, and Mid-Frequency, Resistance Welders
- MIG, TIG, Plasma and Subarc Welders
- Induction Heat and Braze Welders, Laser Welders
- and Laser Cutters
 Robots and Machine Rebuilding

SYSTEM INTEGRATION CAPABILITIES

- Vibratory Feeding Systems and/or Magazine Feeds, Pick and Place Mechanisms, Rotary Indexing Units, Linear, Overhead and Walking Beam Transfer Mechanisms.
- Machining, Drilling, Tapping, Deburring, Grinding
 Roll and Wing forming, Tangent Benders, Piercing, Notching, Crimping, Staking, Pressing, Expanding, Clinching, and Mechanical Joining [Tox,Toggle Lock,Etc.]

CONTRACT SERVICES

Machining	Engineering Services
Boring Bars	Mechanical
Vertical Machining	Pneumatic
Centers	
Surface Grinder	Controls
CNC Turning	PLC Programming
Drill Press	Robotic Programming
Radial Drill Press	Welding Training
	Other
	Boring Bars Vertical Machining Centers Surface Grinder CNC Turning Drill Press

nine Retrofits
ling
I Building



CONSULTORES Y SERVICIOS (cont.)

E-mail: ventas@consi.com.mx Web: www.consi.com.mx

EDMUNDO HURTADO, President E-mail: e.hurtado@consi.com.mx EDUARDO HURTADO, General Manager E-mail: diseno@consi.com.mx DAVID HURTADO, Sales Manager E-mail: ventas@consi.com.mx

PRODUCTS MANUFACTURED:

Consi designs and manufactures quality production resistance welding machines and equipment in Mexico since 1981. Machine types include proprietary special and standard resistance welders; spot, seam, butt, projection, and portable gun from 25 to 250 KVA. Suspension type Welding Guns from 27 to 48 KVA made by WPI Taiwan. Remanufacture existing equipment to meet customers' specific requirements. Resistance welding transformers repair and rebuild services for all brands. Your source in Mexico for copper alloys RWMA rod, bar and plate. Electrodes, caps, shanks, adapters, seam weld wheels. Air and water-cooled cables, laminated shunts, SCR's, water chillers, ENTRON, Forwel and Unitrol controls. They offer in-house tooling design, service, technical assistance, in-site training and seminars.

CYBERSMITH ENGINEERING

307 Walnut StreetForest City, IA 50436Phone:641-585-5407Fax:641-585-2348E-mail:jack@cybersmithengr.comWeb:www.cybersmithengr.com

JACK SMITH, President E-mail: jack@cybersmithengr.com NICK SMITH, Associate Machine Designer E-mail: nick@cybersmithengr.com

PRODUCTS MANUFACTURED:

Cybersmith[®] Engineering designs and builds special machines and systems. Projects range from simple, stand-alone, manually fed machines, to 12 axis fully automatic systems. Machines range from multiple spot welders to multiple RAM projection welders. Examples of their products can be seen on their website.

EWALD INSTRUMENTS CORPORATION/PTS

er Court, Suite 3
06010
860-491-9042
860-491-9045
ewald.instr.corp@snet.net
www.ewaldinstruments.com
www.ptswelding.com

RICHARD S. VREELAND II, President E-mail: rsv2@aol.com CARROLL SCHROEDERS, Inside Sales E-mail: ewald.instr.corp@snet.com

PRODUCTS MANUFACTURED:

Miniature to large bench top welding heads, both mechanical and pneumatic, for all sizes of applications, as well as hand-held welding tools and tweezers. Stored energy power supplies to 55 Watt-Seconds, and synchronous and non-synchronous AC timer power supplies up to 34 KVA or larger. They

EWALD INSTRUMENTS CORPORATIONS/PTS (cont.)

have also designed and manufactured many types of semi and fully automatic welding systems.

GILBERT INDUSTRIAL, INC.

33 Lomar Park Drive
Pepperell, MA 01463Phone:800-721-7068Fax:978-433-9508E-mail:Iorraine@gilbertindustrial.comWeb:www.gilbertindustrial.com

WILLIAM A. DeGROOTE, President E-mail: bill@gilbertindustrial.com LORRAINE MURPHY, Manager E-mail: lorraine@gilbertindustrial.com DUANE STODDARD, Technician E-mail: duane@gilbertindustrial.com JOHN DeGROOTE, Sr. Technician E-mail: john@gilbertindustrial.com

BRANCHES

South Carolina 810 Old Pelzer Road Piedmont, SC 29673 Phone: 888-225-6721

PRODUCTS MANUFACTURED:

Gilbert Industrial, Inc., is a full-service organization, servicing the resistance welding industry, with a particular emphasis in the aerospace, Mil-Spec, and high quality requirement fields. They offer a full line of Resistance Welding Machines, and provide new, re-manufactured, or will retrofit your existing equipment to meet their customer's needs. They also provide complete system integration, as well as design and manufacture new or existing equipment. They have a large inventory of used resistance welders, and other related parts and accessories.

GUILD INTERNATIONAL, INC.

7273 Division Street Bedford, OH 44146 Phone: 440-232-5887 Fax: 440-232-5878 E-mail: msw@guildint.com Web: www.guildint.com

MICHAEL WHEELER, President E-mail: msw@guildint.com

PRODUCTS MANUFACTURED: Guild International designs and manufactures coil end strip welding machinery for use on steel process lines.

HERON MACHINE & ELECTRIC INDUSTRIAL CO., LTD.

No. 9 Feng Ying Road CongHua Economic & Technique Development Zone Guangzhou CHINA Phone: 86-20-878-13325 Fax: 86-20-878-13346

BILL ZOU, President

E-mail: bill@heronwelders.com

HERON MACHINE & ELECTRIC INDUS. CO (cont.)

PRODUCTS MANUFACTURED.

Heron Machine & Electric Industrial Co., Ltd. are manufacturers of spot welding machines; press welding machines; seam welding machines; multispot welding machines; flash butt welding machines; capacitor discharge welding machines; punch rivet machines; folding machines; customer welding machines specific to the customer's requirements. Their product line has been supplied to the automobile, battery and hardware manufacturing industry, just to name a few.

ICESA WELDING SYSTEMS

(aka Icesa Modicon) Av. San Vicente 7 San Miguel Xochimanga Atizapan Estado de Mexico 52927 MEXICO Phone: 0115255 11631763 Fax: 0115255 11631754 E-mail: spatton@icesamodicon.com.mx Web: www.icesamodicon.com

SEAN C. PATTON, Vice President Sales & Marketing E-mail: spatton@icesamodicon.com.mx HARRY H. PATTON, Chairman

E-mail: hpatton@icesamodicon.com.mx FIDEL CORDERO MORALES, Welding Manager

E-mail: fcordero@icesamodicon.com.mx AMADO ALAVEZ GARCIA. Product Manager

E-mail: aalavez@icesamodicon.com.mx

BRANCHES

San Juan Del Rio, Queretaro Av. Tomas Alba Edison 7 Col Industrial el Oro San Juan del Rio, Queretaro, Mexico 78802

Saltillo, Coahuila Prol Venustiano Carranza sn Col El Barratillo Ramos Arizpe, Coahuila 25900

PRODUCTS MANUFACTURED:

Icesa Welding Systems is a full-service supplier for resistance welding equipment and processes. Icesa has been offering innovative welding solutions to their customers in Mexico since 1976. They design and manufacture a proprietary line of Pedestal Welders for spot and projection welding. Icesa also supplies special welding machines and welding robot cells. They can supply solutions from very manual systems to fully automated multi-station machines, complete with all Locating and Welding Controls, welding machines and weld cylinders.

JANDA COMPANY, INC.

1275 Railroad Street Corona, CA 92882 Phone: 951-734-1935 Fax: 951-734-0649 E-mail: sales@jandawelders.com Web: www.jandawelders.com

JANET WHITE, CEO BOB WHITE, JR., President E-mail: bobjr@jandawelders.com SHERYL DREILING, Vice President E-mail: sheridreiling@jandawelders.com



Largest Stocking distributor of All Major Brand Weld Controls, Transformers, Water Chillers, SCR's, Welding Cables, Air Accessories, Electrodes, Holders, Dressers, Copper Rod, Bar, Plate—ALL RVMA Alloys

JANDA COMPANY, INC.

1275 Railroad Street 951-734-1935 Email: sales@jandawelders.com www.jandawelders.com

Corona, CA 92882 FAX 951-734-0649

JANDA COMPANY, INC. (cont.)

RICHARD GAINER, Sales Director E-mail: rick@jandawelders.com JACK FORNELLI, Outside Sales Manager E-mail: sales@jandawelders.com RHONDA BURTON, Inside Sales Manager E-mail: rhonda@jandawelders.com ALLIE DREILING, Marketing Director E-mail: allie@jandawelders.com

PRODUCTS MANUFACTURED:

Since 1960, Janda has manufactured Quality Standard and Special Resistance Welding Equipment. Janda offers the largest Standard Line of welders available, including Rocker Arm, Press, Projection, Longitudinal and Circumferential Seam welders available in Single Phase, Three Phase and Frequency Inverter, Multi-Head, Bench Type, Dimple Type, Corner Mesh, Miniature Weld Heads, Truss machines, Brake Shoe, Filter Bag, Gun Type, Rotary Spot, Fusion welders, Butt and T-Welders, also Precision Tensile Testers. Over 3,000 Special welders designed and manufactured. Machine certifications to government Mil. Spec. Class "A." Janda is also a stocking distributor/manufacturer of all welder components, accessories, and supplies including controls, transformers, electrodes and copper bar.

KOYO GIKEN, INC.

4020-4 Tana Chuo-Ku Sagamihara, Kanagawa JAPAN 252-0244 Phone: 81-42-760-4306 Fax: 81-42-760-4309 E-mail: info@koyogiken.co.jp Web: www.koyogiken.co.jp

TAKASHI FUJISAWA, Marketing Supervisor E-mail: jujisawa@koyogiken.co.jjp

PRODUCTS MANUFACTURED:

Koyo Giken, Inc., is a designing and engineering company for industrial welding machines. Their patented (pending) table spot welding, "MYSPOT" provides revolutionary development and cost efficiency in fabrication process. "MYSPOT" has sold more than 1,500 units since 1990 and keeps contributing to the sheet metal industry all over the world.

KRITON WELD EQUIPMENTS PVT. LTD.

406, G.I.D.C. Estate, Makarpura Vadodara Gujarat 390010 INDIA Phone: 91-265-2645070 Fax: 91-265-2638761 E-mail: purohit@kritonwelders.com Web: www.kritonwelders.com

K. B. PUROHIT, C.M.D.

E-mail: info@kritonwelders.com VISHAL PUROHIT, Director E-mail: purohit@kritonwelders.com

BRANCHES:

Kriton Weld Equipments Pvt. Ltd. Plot No. 416, G.I.D.C. Estate Por-Ramangamdi, Dist Baroda, Gujrat INDIA 391243

KRITON WELD EQUIPMENTS PVT. (cont.)

PRODUCTS MANUFACTURED:

Kriton Weld Equipment manufacturers and exports a wide range of resistance welding equipment since 1973 in India. Products include spot, projection, seam, butt, MMA, GTAW, GMAW welding equipment, including strip welder, along with shears, PLC, notcher, side guides and weld controllers. All machines at KRITON welders are strictly manufactured as per ISS/RWMA (USA) standards, incorporating latest technological developments and controls with highest order of quality and performance. Kriton has installed capacity of 700 KVA power to test and trial the heavy Welding Equipments manufactured. Outside India, Kriton has exported equipment to nearly 22 countries. Continuous expansions and developments are regular processes at Kriton. They are distributors of "Unitrol" products in this part of the world.

LORS MACHINERY, INC.

	sons Road
Union, NJ	
	908-964-9100
	908-964-4492
E-mail:	sales@lors.com
	service@lors.com
Web:	www.lors.com
EDWARD	J. ONNY, Chairman of the Board
EDMUND	O NARVAEZ, President
	Phone: 908-964-9100, Ext. 15
	E-mail: edmundo@lors.com
GREGOR	Y LABELLE, COO
	Phone: 908-964-9100, Ext. 17
	E-mail: greg@lors.com
MARILYN	CASCARELLI, Financial Manager
	Phone: 908-964-9100, Ext. 11
	E-mail: marilyn@lors.com
DUUGLA	S MACKENZIE, Design & Manufacturing Manager Phone: 908-964-9100, Ext. 12
	E-mail: doug@lors.com
IAMES E	ERRARO, Service Manager
57 111251	Phone: 908-964-9100, Ext. 26
	E-mail: jimbo@lors.com
DENNIS	MAURO, Electrical Technician
	Phone: 908-964-9100, Ext. 25
	E-mail: dennis@lors.com

PRODUCTS MANUFACTURED:

LORS Machinery, Inc., is a Union, New Jersey based full service resistance welder manufacturer of standard Press, Projection, Rocker-Arm, Bench-Type and Upset Butt welders. LORS also designs and builds multiple-spot and dedicated special welders, together with weld fixtures, special weld tooling, wire bending and trimming equipment.

LORS Distributors are located in major manufacturing areas of North America. Markets served also include Central and South America, Asia, Europe, the Mid-East and North Africa. Since 1987, LORS is the exclusive importer/master distributor for the TECNA range of self-contained, suspended portable A.C. and middle frequency inverter D.C. spot welding guns, spring balancers, Rocker-Arm and combination Press Projection/Spot welders, 3-Phase D.C. Rectified and 3-Phase Middle Frequency Inverter Press and Projection welders. LORS also represents the Koyo Giken line of MY SPOT welders from Japan.

LORS MACHINERY, INC. (cont.)

LORS stocks an extensive inventory of RWMA copper alloys, CCNB-EH alloy mesh welder electrodes, rod and bar stock, CMW, Pacific and Tuffaloy electrodes and holders. Welding transformers, cylinders, controls, test equipment, water chillers and re-circulators are also stocked. On-site welder repair and upgrades, resistance welding seminars and complete resistance welding tech support are also offered.

MECHELONIC WELDERS PVT., LTD.

A-24 HMT Industrial Estate Jalahalli Bangalore, Karnataka 560031 INDIA Phone: 91-80-2345-9026 Fax: 91-80-2345-9027 E-mail: info@mechelonic.com Web: www.mechelonic.com

MATHEW NEDUMKUNNEL, Director

E-mail: mathew@mechelonic.com

PRODUCTS MANUFACTURED:

Mechelonic Welders Pvt., Ltd., designs, manufactures and supplies standard, custom built, and special purpose machines that are built to worldclass specifications and quality standards. They are also a system integrator for stand-alone welding cells by integrating customer specific components and sub-systems.

MIYACHI UNITEK CORPORATION

1820 South Myrtle Avenue Monrovia, CA 91016 Phone: 626-303-5676 626-599-9636 Fax. E-mail: info@muc.miyachi.com www.muc.miyachi.com Web: JACK D. LANTZ, President/CEO Phone: 626-930-8551 E-mail: jack.lantz@muc.miyachi.com KUNIO MINEJIMA, Vice President, Operations Phone: 626-930-8577 E-mail: kunio.minejima@muc.miyachi.com JIM MALLOY, Vice President, Sales Phone: 626-930-8505 E-mail: jim.malloy@muc.miyachi.com KEVIN GUNNING, Director of Quality, Service & Support Phone: 626-930-8428 E-mail: kevin.gunning@muc.miyachi.com MARTY MEWBORNE, Product Manager Phone: 626-930-8524 E-mail: marty.mewborne@muc.miyachi.com DAVID HERRIN, Supervisor of Depot Service Phone: 626-930-8441 E-mail: dave.herrin@muc.miyachi.com LOREN McLELLAN, Product Engineer Phone: 626-930-8510 E-mail: loren.mclellan@muc.miyachi.com TODD HAGERMAN, Senior Welding Engineer Phone: 626-930-8423 E-mail: todd.hagerman@muc.mivachi.com MARK RODIGHIERO, Vice President of Systems, Technology and Development Phone: 626-930-8530 E-mail: mark.rodighiero@muc.miyachi.com

MIYACHI UNITEK CORPORATION (cont.)

DAVE CIELINSKI, Vice President of Standard Product R&D Phone: 626-930-8573 E-mail: dave.cielinski@muc.miyachi.com BARBARA KUNTZ, Marketing Manager Phone: 626-930-8560 E-mail: barbara.kuntz@muc.miyachi.com

PRODUCTS MANUFACTURED:

Miyachi Unitek is a leading manufacturer of equipment and systems for resistance welding, laser welding, laser marking, laser cutting, and hot bar reflow soldering and bonding. The company provides products to a wide range of markets, including the medical device, battery, electric vehicle, and solar industries, as well as the global electronics, automotive, and general industrial markets. Miyachi Unitek is an ISO9001 certified company.

MTI WELDING TECHNOLOGIES, LTD.

(formerly British Federal) Building 80, 1st Avenue Pensmett Estate West Midlands DY1 4DA ENGLAND Phone: 44-0-1384-277502 Fax: 44-0-1384-455554 E-mail: @mtiwelding.co.uk Web: www.mtiwelding.co.uk

PRODUCTS MANUFACTURED:

MTI Welding Technologies, Ltd., is recognized as global suppliers of all types of resistance welding machines and controls. All processes are offered including bespoke and standard spot seam and butt welding machines. A full range of servo machines for aircraft and non-aircraft, up to 45m are provided as well as robotic and non-robotic weld guns.

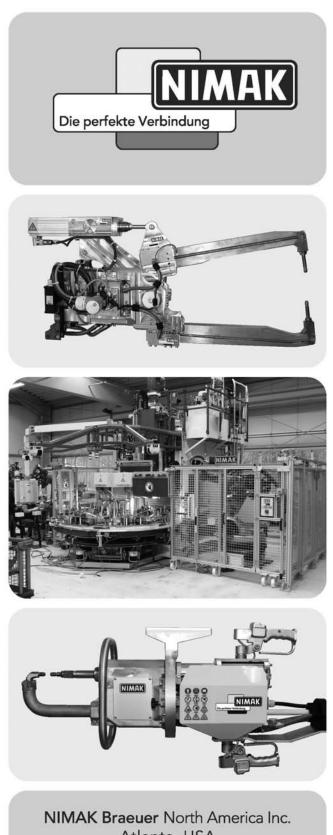
NIMAK BRAEUER NORTH AMERICA INC.

1170 Howell Mill Road, Suite 300 Atlanta, GA 30318 Phone: 423-284-7387 Fax: 678-244-1539 E-mail: johann.ecker@nimak.us Web: www.nimak.us JOHANN ECKER, Managing Director – Vice President

E-mail: johann.ecker@nimak.us ALEXANDER NICKEL, President E-mail: alexander.nickel@nimak.us GEORG PETMECKY, Technical Expert E-mail: georg.petmecky@nimak.us

PRODUCTS MANUFACTURED:

NIMAK Braeuer 's core business for North America is to sell and service innovative and modern welding guns and high quality welding machines for automated processes. They established NIMAK-service-hubs in several automotive manufacturing regions with well-trained NIMAK employees to guarantee a fast and professional service to their customers. To ensure a fast delivery of spare parts, NIMAK Braeuer North America produces several spare and consumable parts in the United States of America.



Atlanta, USA

www.nimak.us

NSRW. INC. NEW SOUTHERN RESISTANCE WELDING 701 Thames Court PO Box 1147 Pelham, AL 35124 Phone: 205-663-1500 800-933-6779 205-663-3221 Fax: email@nsrw.com E-mail: Web: www.nsrw.com JOANNE S. DINSMORE, President E-mail: idinsmore@nsrw.com WADE BURNETTE, Vice President, Sales E-mail: wburnette@nsrw.com TONY LARIO, Senior Engineer E-mail: tlario@nsrw.com BRIAN JOHNSON, Quality Control E-mail: bjohnson@nsrw.com STAN SIMS, Outside Sales E-mail: ssims@nsrw.com GLEN HAMER, Sales E-mail: ghamer@nsrw.com DARREN MILLER, Sales E-mail: dmiller@nsrw.com KATRINA BLACKWELL, Purchasing E-mail: kblackwell@nsrw.com

PRODUCTS MANUFACTURED:

NSRW is a full service resistance welding manufacturer and supplier for the resistance welding process, carrying a complete inventory of copper rod, bar and plate in RWMA classes 2, 3, 4, and 110 Bus Class 11 and 12 copper tungsten, 13 tungsten, 14 molybdenum and Anviloy 1150 are also available. In stock and ready to ship a complete line of resistance welding supplies including: electrodes, caps, shanks, adapters, seam weld wheels, air and water cooled welding cables, transformers, SCR's and controls. Engineering available to assist your manufacturing needs. NSRW can design new machines or remanufacture existing equipment to meet your specific requirements. In-house tooling design and service. Seminars are also available.

PREVAIL TECHNOLOGY (SHENZHEN) CO., LTD.

No. 25 Caitian Road Shatian Industrial Zone Kengzi Pingshan, Shenshen CHINA Phone: 86-0755-286-18888 Fax: 86-0755-286-19999 E-mail: info@hkprevail.com Web: www.hkprevail.com

CHEN SHUJUAN (ALYSSA), Assistant General Manager E-mail: alyssa_happy@163.com

PRODUCTS MANUFACTURED:

Prevail Technology is a high-tech corporation in the Chinese welding field, holding the management concept of "professional quality, honesty oriented and to-win", commits itself to provide increasing innovative and professional welding solutions, the equipment of high quality and sincere services to consumers, and create the maximum value and potential increase for consumers. They have many experts, Senior Engineers, and Technicians, capable of providing design and production of special equipment, as well as first class after service for customers. Prevail will be an excellent welding machines supplier in the world.

ROLASOL S.R.L.

Dr. Jose Ignacio De La Roza #7036 Buenos Aires ARGENTINA CP 1439 Phone: 54-11-46873379 Fax: 54-11-46873379 E-mail: info@rolasolsrl.com.ar Web: www.rolasolsrl.com.ar

FRANCISCO SEMINARA, General Manager E-mail: fvseminara@ciudad.com.ar VICTOR SEMINARA, Founder CLAUDIO ROLDAN, Director of Sales SERGIO VERDUGO, Technical Director

PRODUCTS MANUFACTURED:

Rolasol S.R.L. specializes in the manufacturing of equipment for resistance welding. They currently manufacture equipment for solar points 10-15-20-30 kva pedal (manual) and pneumatic. Also, Rolasol performs repairs on any make and model resistance welding equipment. They represent several foreign companies in the welding industry, such as Taylor Stud Welding (UK) and Sellstrom (USA). Rolasol S.R.L. is currently negotiating with several companies representing the following countries: USA, Japan, Germany and Denmark.

RWC, INC.

2105 South Euclid Avenue	
PO Box 920	
Bay City, MI 4	8707-0920
Phone: 98	9-684-4030
Fax: 98	9-667-3426
E-mail: rw	csales@rwcinc.com
Web: ww	/w.rwcinc.com
WILLIAM G. PERLBERG, President Phone: 989-671-6951 E-mail: wperlberg@rwcinc.com BRIAN P. TOBIN, Vice President Phone: 989-671-6964 E-mail: btobin@rwcinc.com LYLE J. BINIECKI, Vice President	
	one: 989-671-6905 mail: Ibiniecki@rwcinc.com ont.)

RONALD W. RICHARDSON, Vice President Phone: 989-671-6953 E-mail: rrichardson@rwcinc.com

PRODUCTS MANUFACTURED:

RWC produces high production welding and multi-purpose machines. Automated metal fabricating lines. Special design spot, projection, seam and flash butt welders. Automatic arc welding machines and fixtures. Special automation and handling equipment. Metal forming/joining equipment. Three phase and DC welding machines. Automatic assembly machines.

SCIAKY, INC.

4915 W.	67th Street
Chicago,	IL 60638
Phone:	708-594-3800
Fax:	708-594-9213
E-mail:	info.sciaky@psi-corp.com
Web:	www.sciaky.com

MIKE RIESEN, General Manager E-mail: mriesen.sciaky@psi-corp.com KENN LACHENBERG, Manager, Engineering E-mail: klachenberg.sciaky@psi-corp.com RON BRZOSKA, Spare Parts Manager E-mail: rbrzoska.sciaky@psi-corp.com LANG PETERSON, Finance Manager E-mail: lpeterson.sciaky@psi-corp.com Phone: 708-496-6185 MIKE CUBERT, Project Manager E-mail: mcubert.sciaky@psi-corp.com Phone: 708-496-7344

PRODUCTS MANUFACTURED:

Sciaky, Inc. brings to its customers a solid history of quality and dependability, coupled with an innovative attitude. As we near our seventh decade in business, we remain the only company in the world capable of providing Resistance, Advanced Arc, Laser, and Electron Beam welding solutions.

SEEDORFF ACME CORPORATION (See Acme Electric Welder Company)

SHANGHAI MOUNTAIN WELDING INDUSTRIES CO., LTD.

 No. 568 Hua Bo Road

 Huatin Town, Jiading District

 Shanghai 201809

 Peoples Republic of China

 Phone:
 86-21-399-00689 (China)

 626-698-8066 (USA)

 Fax:
 86-21-399-00589

 E-mail:
 mt2005@188.com

 Web:
 www.mtwelder.com

KANG HONG, General Manager E-mail: mt2005@188.com JIANG QIKUI, Deputy General Manager E-mail: mt2005@188.com

PRODUCTS MANUFACTURED:

Shanghai Mountain Welding Industries Co., Ltd., founded in 1992, with headquarter based in Shanghai, and boasting a large number of welding experts, Mountain Ltd., features varieties of welding equipment designed and

SHANGHAI MOUNTAIN WELDING INDUSTRIES, LTD. (cont.)

developed by experts with academic background in America and Russia that helped the company in accelerating its transformation of technology into productivity. Mountain Ltd., offers turn-key solution for welding applications. Spot, seam, butt, flash, projection welders, portable gun welders, three phase DC welder. Special welder for shock absorber, wheel rims, back bridges, transmission shaft, brake scotch of automobile and flash welder for rails.

STANDARD RESISTANCE WELDER CO.

DIVISION OF JIM DALLY & ASSOC., INC.

7833 Conners Road		
PO Box 268		
Winston, GA 30187-1463		
Phone:	770-949-2479	
	800-365-9943	
Fax:	770-489-1826	
E-mail:	jim@srwelder.com	
Web:	www.srwelder.com	
	B	

JAMES D. DALLY, President E-mail: jim@srwelder.com FAYE DALLY, Secretary/Treasurer E-mail: faye@srwelder.com CYNDIE STAFFORD, Office Manager E-mail: cyndie@srwelder.com

PRODUCTS MANUFACTURED:

Standard Resistance Spot, Seam, Butt, Flash, Projection, Press and Bench Welders. Portable Gun Welders. Special Multi-Spot, Projection and Seam Welders, Dial Index Welders. Special fixtures and transfers. Automated Arc welding fixtures. Assembly type welding machines. Three-phase DC and Mid Frequency. Wire forming equipment. Full-service OEM manufacturer. Schools/Training. Inventory stocking distributor of consumable products.

TAYLOR-WINFIELD TECHNOLOGIES

Thomas Road		
PO Box 500		
Brookfield, OH 44403-0500		
330-448-4464		
330-448-3538		
sales@taylor-winfield.com		
www.taylor-winfield.com		

ALEX BENYO, President Phone: 330-448-3686 E-mail: abenyo@taylor-winfield.com FRANK L. DELEY, Vice President - Operations Phone: 330-448-3556 E-mail: f_deley@taylor-winfield.com BLAKE W. RHEIN, Vice President - Sales & Marketing Phone: 330-448-3523 E-mail: brhein@taylor-winfield.com ROBERT P. MATTESON, Director, Technology & Product Development Phone: 330-448-3540 E-mail: rmatteson@taylor-winfield.com JEFFREY BELL, Sales Manager Phone: 330-448-3517 E-mail: jbell@taylor-winfield.com

TAYLOR-WINFIELD TECHNOLOGIES (cont.)

THOMAS J. SOLICH, Product Manager – Resistance Welding Product Group Phone: 330-448-3510 E-mail: tsolich@taylor-winfield.com MIKE GASKILL, Lab Manager Phone: 330-448-3657 E-mail: mgaskill@taylor-winfield.com

PRODUCTS MANUFACTURED:

Taylor-Winfield solves material joining problems to improve part quality and manufacturing production capabilities. Resistance Welding, Induction Heating, MIG, TIG, Plasma and Laser Welding Systems. Automated Assembly and Robotic Systems from concept to production. Full service OEM manufacturer and distributor of Consumable Welding Products.

TECNA S.p.A.

Via Meuco	ci, 27
40024 Castel S. Pietro Terme	
Bologna	
ITALY	
Phone:	39-051-695-4411
Fax:	39-051-695-4490
E-mail:	sales@tecna.net
Web:	www.tecna.net

GIORGIO GALLI, Commercial Director E-mail: giorgio.galli@tecna.net

BRANCHES

USA AGENT & IMPORTER: LORS Machinery Inc.		
Phone:	908-964-9100	
Fax:	908-964-4492	
Email:	sales@lors.com	
Web:	www.lors.com	

PRODUCTS MANUFACTURED:

Spot and Projection Bench Machines, 16-150 KVA; Medium Frequency versions from 19 up to 36.000A. Single-phase projection linear action welding machines, 35-315 KVA; Medium frequency versions from 18 up to 90.000A. D.C. three-phase linear action welding machines, 100-630 KVA. CNC flexible system for resistance welding, 2-5 axes. Automatic air operated suspended guns with built-in transformer, 16-75 KVA; medium frequency versions from 18 up to 40.000A. Rocker arm spot welders 12-50KVA. Modular spot welders: twin spot, rocker arm, linear action, Welding control units, with microprocessor, ammeter, adaptive, constant current and standard versions. Test and measurement instruments for resistance welding machines. Balancers from 0.4 up to 180 kg, Stroke 1600-3000mm. Welding guns for car body repair, portable and self-contained, hand air operated, single and three-phase medium frequency versions D.C. 2-25 KVA powers.

TEC-OPTION

 334 Sherman Street

 Blissfield, MI
 49228

 Phone:
 517-486-6055

 Fax:
 517-486-2352

 E-mail:
 sales@tec-option.com

 Web:
 www.tec-option.com

BRYAN DOMSCHOT, President E-mail: bryan@tec-option.com

TEC-OPTION (cont.)

PRODUCTS MANUFACTURED:

Tec-Option is the "Leader in Modular Assembly and Welding Solutions". The flexible system offers lean manufacturing advantages. Interchangeable tooling modules may consist of part tooling, weld cylinders, poka-yoke, auto fastener feeding and auto unload with conveyor. Operators can change the tool module from one project to the next in less than five minutes, no tools or forklift required. The product line has recently been improved and has evolved into their "Tec-Flex" product, which offers superior flexibility, while maintaining the same excellent quality. This allows a single machine to perform multiple tasks; simple tasks, such as fastener or spot welding, to more complex assemblies that may use MIG welding and material handling (robotics). The Modular Solution provides maximum return on capital investment, reusable assets for further programs, while optimizing machine cycle time. Less floor space is used than with typical automated systems, maximizing production footprint and minimizing wasted space.

TENNESSEE RAND, INC.

702 Moccasin Bend Road		
Chattanooga, TN 37405		
Phone:	423-664-7263	
Fax:	423-664-7264	
E-mail:	sales@tennrand.com	
Web:	www.tennrand.com	

DON PETERS, Executive Vice President & General Manager E-mail: dpeters@tennrand.com ANDREW NEELY, Vice President of Advanced Systems E-mail: aneely@tennrand.com

JOHN MEEK, Engineering Manager

E-mail: jmeek@tennrand.com

PAT McDANIEL, Engineering Team Leader

E-mail: pmcdaniel@tennrand.com

PRODUCTS MANUFACTURED:

Turn-key robotic system integration, production tooling and equipment manufacturing, and support services, are provided for a variety of manufacturing solutions. Providing systems and tooling for resistance, arc, and laser welding applications, including custom and standard robotic welding cells, and special resistance welders. Quick reaction service and support is available, including robotic programming, control system programming, and portable CMM capability for tooling adjustments. A line of pneumatic clamps, slides, pin retractors, and touch-screen interfaces, are produced.

T.J. SNOW COMPANY, INC.

6207 Jim Snow Way PO Box 22847 Chattanooga, TN 37422 Phone: 423-894-6234 800-NOW-SNOW 877-WELD-TIP Fax: 423-892-3889 E-mail: welders@tjsnow.com Web: www.tjsnow.com T. JAMES SNOW, SR., Founder, Chairman Emeritus THOMAS J. SNOW, JR., Chairman/CEO

Phone: 423-308-3165 E-mail: tomsnow@tjsnow.com DAVID HETZLER, President/COO Phone: 423-308-3179 E-mail: davidhetzler@tjsnow.com

T.J. SNOW COMPANY, INC. (cont.)

MARK D. PEPPING, Vice President, Sales and Marketing Phone: 423-308-3215 E-mail: markpepping@tjsnow.com JAMES DILLARD, Vice President, Engineering and Manufacturing Phone: 423-308-3183 E-mail: jamesdillard@tjsnow.com GREG EDMONDS, Manager, Assembly and Test Phone: 423-308-3172 E-mail: gregedmonds@tjsnow.com JOSH GARMON, Service Department Scheduler Phone: 423-308-3248 E-mail: joshgarmon@tjsnow.com

PRODUCTS MANUFACTURED:

Standard and special design resistance welders, from stand-alone machines to multi-station production lines. These machines often include operations other than welding, such as forming or swaging. Special design automatic arc welders. Robotic arc and spot welding cells, utilizing any brand of robot. Robotic welding positioners. Full line of standard bench type, press type, and flash/butt welders. Special fixtures and tooling. Large inventory of used resistance welders and controls, which are offered reconditioned or completely stripped and remanufactured. Quick-response on-site welder and control troubleshooting service available 24-hours a day, seven days a week with a corporate aircraft. Resistance welding seminars are offered in Chattanooga, plus seminars are offered in various regions on a regular basis in addition to on on-site training and consulting in customers' plants. Welders certified to military and aircraft specifications. Complete supply of standard resistance welding electrodes, holders, wheels, adapters, cables, jumpers and copper alloy rod and bar stock. Large stock of resistance welder controls, monitors, chillers, SCR's and other related parts and accessories.



Copper Products Division

These companies are manufacturers and metallurgical specialists, producing high quality resistance welding electrodes, holders, adapters, seam welding wheels, forgings, castings, and other RWMA materials to meet the multi-faceted production requirements of the metal fabricating industries.

CADI COMPANY, INC.

60 Rado I	Drive	
PO Box 1127		
Naugatuc	k, CT 06770-1127	
Phone:	203-729-1111	
	800-243-3650	
Fax:	203-729-1919	
E-mail:	sales@cadicompany.com	
Web:	www.cadicompany.com	
DO000		
ROCCOA	A. CAPOZZI, CEO	
	Phone: 800-243-3650	
	E-mail: 072839@att.blackberry.net	
ROCCO	I. CAPOZZI, President	
	Phone: 800-243-3650	
	E-mail: rcapozzi@cadicompany.com	
RONALD	P. PRATT, Executive Vice President	
	Phone: 248-375-2224	
E-mail: rpratt@cadicompany.com		
WAYNE R. JAKUSZ, Vice President, Sales		
Phone: 800-243-3650		
	E-mail: wjakusz@cadicompany.com	
NORMAN L. FINKE, JR., Quality Assurance Manager		
Phone: 800-243-3650		

Phone: 800-243-3650 E-mail: nfinke@cadicompany.com

BRANCH OFFICES:

PO Box 81053 Rochester, MI 48308-1053 Phone: 248-375-2224 Fax: 248-375-1856

PRODUCTS MANUFACTURED:

Largest source of wrought (extruded or forged) copper alloys, ready to ship: rod, bar, plate, weld wheel blanks, custom shapes and sizes. Full line of RWMA Class 1, 2, 3 & 4 copper alloys; refractory metals Class 10, 11, 12, 13, & 14. Resistance welding products: standard or parts made to print; such as caps, shanks, adaptors, electrodes, holders, weld wheels, cables & shunts, miscellaneous components, etc.

CENTERLINE (WINDSOR) LTD. ELECTRODES & ALLIED PRODUCTS DIVISION 595 Morton Drive Windsor Ontario N9J 3T8 CANADA Phone: 519-734-6886 800-249-6886 Fax: 519-734-2005 E-mail: info@cntrline.com Web: www.cntrline.com DAVID M. BENETEAU, Vice President

E-mail: dmb@cntrline.com DAN E. USZYNSKI, General Manager E-mail: danuszynski@cntrline.com

LARGEST VARIETY OF COPPER ALLOYS IN STOCK - Ready to Ship

Cadi Company Inc.

PO Box 1127, Naugatuck, CT 06770 Toll Free: 800-243-3650 Phone: 203-729-1111 Email: sales@cadicompany.com URL: www.cadicompany.com

Manufacturing and Distributing Copper Alloys for Over 30 Years

RWMA Copper Alloys

ROD - BAR - PLATE -WELD WHEEL BLANKS CLASS 1 - C15000 CLASS 2 - C18200 - C18150 CLASS 3 - C18000 - C17510 CLASS 4 - C17200

RWMA Refractory Metals

CLASS 10 - C74450 CLASS 11 - C74400 CLASS 12 - C74350 CLASS 13 - C74300 CLASS 14 - C43200

Resistance Welding Products

Caps - Shanks - Adaptors -Electrodes - Holders -Weld Wheels - Cables & Shunts -Misc. Components -Standard or Parts Made to Print

ISO 9001:2008 Registered

CENTERLINE (WINDSOR) LTD. ELECTRODE & ALLIED PRODUCTS DIVISION (cont.)

MATT SHARRON, Plant Manager

E-mail: msharron@cntrline.com PHIL CAMPBELL, Vice President of Sales E-mail: phil.campbell@cntrline.com

BRANCHES

PO Box 321187 Detroit MI 48232-1187 313-961-4080

PRODUCTS MANUFACTURED:

Manufacturer of the complete range of standard and custom resistance welding consumables and components including: cold-formed RWMA and ISO cap electrodes; threaded and button caps; nut and projection welding electrodes; machined and formed electrodes; adapters; holders; fabricated and machined welding gun and machine components; plus, tooling and other accessories for welding. A complete range of component repair services including welding, CenterLine's patented cold gas-dynamic spray metal deposition process and machining services.

CMW INC.

70 South Gray Street Indianapolis, IN 46201 Phone: 317-634-8884 Fax: 317-638-2706 E-mail: cmw@cmwinc.com Web: www.cmwinc.com

MARK GRAMELSPACHER, President/CEO E-mail: mgramel@cmwinc.com ERIC KREPPS, COO E-mail: ekrepps@cmwinc.com JEFF SCHEMEL, Welding Sales Manager E-mail: jls@cmwinc.com KARON HARRIS, Customer Service Representative E-mail: kharris@cmwinc.com TONYA CUNNINGHAM, Customer Service Representative

E-mail: tzc@cmwinc.com

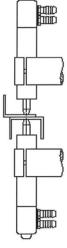
PRODUCTS MANUFACTURED:

CMW manufactures the broadest line of resistance welding consumables in the industry (holders, cold-formed caps, shanks, adapters, electrodes, and more, including threaded button electrodes and Metric-ISO 5821 and Metric Asian-taper cap electrodes). CMW's GCAP® electrode is the most economical cap electrode available for high production welding of galvanized steel without dressing. CMW's Elkonite® copper-tungsten significantly extends electrode life, and can be purchased in bulk or special configurations for resistance welding applications. The new Elkaloy® 20 dispersion strengthened copper cap electrode (patent pending) and CMW® FINNCAP electrode (patent pending) provide unprecedented life and welding efficiency. Services include design engineering, technical support, and training. CMW also is supported by the highest quality distribution network in the industry. For an Authorized Welding Distributor near you, please call or visit www.cmwinc.com.

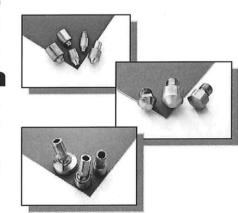


THE FORERUNNER IN SPECIALTY METALS





CMW FINNCAP® Electrode ELKONITE® Copper Tungsten ELKALOY® 20 Cap Electrode GCAP® Electrode "NU-TWIST"® Electrode CHAMELEON / MAXLIFE™



www.cmwinc.com

ECKA GRANULES OF AMERICA

500 Prosperity DriveOrangeburg, SC 29115Phone:803-536-0215Fax:803-928-5102E-mail:j.troxell@ecka-granules.comWeb:www.ecka-granulues.com

JACK TROXELL, Global Sales Manager Phone: 502-489-0664 E-mail: j.troxell@ecka-granules.com MARKUS HOFMOCKEL, Product Manager E-mail: m.hofmockel@ecka-granules.com

SERVICES PROVIDED:

ECKA Granules manufactures and distributes DISCUP[®] Dispersion Strengthened Copper for components in resistance welding, projection welding, stud welding, seam welding, and other welding processes, such as MIG, and submerged arc. ECKA Granules supplies DISCUP in a wide range of sizes, and a variety of mill shapes, including round, hex, rectangular bar, and tubing. DISCUP provides unmatched resistance to softening following high temperature exposure, high electrical and thermal conductivities, and high strength and hardness.

In addition, ECKA Granules manufactures and distributes a full range of nickel, iron, and cobalt alloy powders for thermal spray for a wide range of application methods including HVOF, plasma, PTA, and coldspray. Nickel and copper alloy brazing powders are also offered.

GENERAL ELECTRODE ENGINEERING CO., INC. (GEECO)

PO Box 841 109 Beaver Court Cockeysville, MD 21030 Phone: 410-771-3900 Fax: 410-771-1033

MARK SHEA, President E-mail: mrshea1130@yahoo.com

PRODUCTS MANUFACTURED:

General Electrode Engineering Co., Inc., manufactures specialized electrodes, holders, and assemblies utilized in resistance welding. They specialize in difficult to weld applications where weld quality and electrode longevity are important weld criteria. Their customers often are looking for Sigma 6 production standard of quality. Additionally, they work closely with their customers to address design issues, testing, as well as technical knowhow.

HUYS INDUSTRIES LIMITED

175 Toryork Drive, Unit #35Weston, Ontario, M9L 1X9CANADAPhone:416-747-1611Fax:416-747-7171E-mail:sales@huysindustries.comWeb:www.huysindustries.com

NIGEL SCOTCHMER, President E-mail: nscotchmer@huysindustries.com DAN MAZEROLLE, Sales E-mail: dmazerolle@huysindustries.com SONJA MICIC, Quoting E-mail: smicic@huysindustries.com CLAIR SCOTCHMER, Customer Service

E-mail: cscotchmer@huysindustries.com

ROSEMARIE LEZON, Quality E-mail: rlezon@huysindustries.com DR. SUMANJIT SINGH, Research E-mail: techsupport@huysindustries.com

BRANCHES:

Huys Windsor 444 Riverview Drive, RR #5 Unit 14, Chatham, Ontario N7M 5J5 CANADA Phone: 800-461-9936

CAM DAVIDSON

E-mail: sales@huysindustries.com

Huys Mexico

Tecnologias de Huys S.A. de C.V. Templo de Quetzalcoatl 12 Colonia Perisur Hermosillo, Sonora CP 83294 MEXICO Phone: 011-52-662-254-2358

JAVIER DURAN

E-mail: jduran@huysindustries.com

Huys North Carolina 131 Franklin Drive, Unit 353 Franklin, NC 28734-3249 Phone: 800-461-9936

JIM PRITCHARD

E-mail: techsupport@huysindustries.com

PRODUCTS MANUFACTURED:

All standard, custom, cold formed, and machined RWMA and ISO electrodes, accessories and consumables, such as holders, fixtures, and fabricated and machined parts and tooling. Patented TiCap[™] titanium carbide coated electrodes, ParaCap[™] parabolic electrodes, TriCoat[™] multi-layered electrodes, "redress and recycle" programs, SORPAS software, FIRSTWELD, and Cost Per Weld unique cost saving programs. Patented Zirco[®] zirconium oxide and composite zirconium oxide-steel welding and locating pins. Weld training, weld parameter optimization and weld tool fixturing. Exclusive North American distributor of Harms+Wende weld controllers and machines, as well as service and repair of Harms+Wende products.

LUVATA OHIO, INC.

1376 Pittsburgh Drive Delaware, OH 43105 740-363-1981 Phone: 740-368-4348 Fax: Web: www.luvata.com DIRK GREYWITT, Vice-President and General Mngr. E-mail: dirk.greywitt@luvata.com PAUL RUESS, Sales Director E-mail: paul.ruess@luvata.com BRIAN SWANK, Business Development/Technical Mngr. E-mail: brian.swank@luvata.com JERRY VANMETER, Chief Engineer E-mail: jerry.van.meter@luvata.com GREG CHAMBERS, North American Welding Segment Manager E-mail: greg.chambers@luvata.com

LUVATA OHIO, INC. (cont.)

JENNY MILLER, Customer Service Supervisor E-mail: jenny.miller@luvata.com JOE VALENTINO, Field Service Representative E-mail: joe.valentino@luvata.com

BRANCHES

Luvata Welyn Garden, Ltd. Centrapark Bessemer Road Welwyn Garden City Hertfordshire AL71HT United Kingdom Phone: 011-44-01707-379789 Fax: 011-44-01707-334300 AMANDA DAWSON, General Manager E-mail: amanda.dawson@luvata.com IAN VIRNULS, Sales Manager E-mail: ian.virnuls@luvata.com

Luvata Suzhou Ltd. No. 126, Shuang Ma Street Weiting Town, Suzhou Suzhou Industrial Park Jiangsu Province, 215121 CHINA Phone: 011-86512-62851018 Fax: 011-86512-62851020 LEON TANG, General Manager E-mail: leon.tang@luvata.com JEFF JIANG, Sales Manager E-mail: jeff.jiang@luvata.com

PRODUCTS MANUFACTURED:

Luvata is a leading manufacturer of Resistance Welding Cap electrodes for the automotive industry. Luvata uses a fully integrated manufacturing process, for its Class I and Class II alloys, from the casting of the wire to the finished product. As an innovator in the welding industry, they are continually developing new processes and products to assure their customers of the highest quality and service. Their brands, Nitrode, Cupal, Nitrode Composite, Z-trode, A-trode, and C-trode, are recognized around the world for their quality.

MANUFACTURA Y SUMINISTROS INDUSTRIALES,

S.A. DE C.V. (MASINSA) Laguna de Mayran 1020 Col. La Salle Saltillo Coahuila 25240 MEXICO Phone: 011-52-844-430-8777 Fax: 011-52-844-430-8778 E-mail: eportilla@masinsa.com Web: www.masinsa.com.mx

EDUARDO PORTILLA BARROS, General Manager - Saltillo E-mail: eportilla@masinsa.com.mx JOSE LUIS PEREZ ADAME, Sales Engineer - Saltillo E-mail: jperez@masinsa.com.mx JORGE LOPEZ VILCHIS, General Manager – Mexico City E-mail: jlopez@masinsa.com.mx

PRODUCTS MANUFACTURED:

Masinsa manufactures, imports and distributes resistance welding consumables and accessories, such as electrodes, caps, tips, shanks, straight and bent adapters, shunts, air and water-cooled cables, stud welding chucks, nut welding heads, coated pins for nut welding, cooling tubes, cap

MANUFACTURA Y SUMINISTROS INDUSTRIALES (MASINSA) (cont.)

extractors, anti-seize compound, force gauges, etc. RWMA alloys in bar, rod and plates. Tungsten and Molybdenum.



Proven Light Weight Technology

- Electrodes
- Holders
- DBARAUSA Kentucky 859.283.5490 Michigan 586.755.1250 NEW Servo Based Pedestal Welder
- Tip DressersTip Changers

WWW.OBARAUSA.COM

OBARA CORP., USA

 11478 Timken Street

 Warren, MI
 48089-3862

 Phone:
 586-755-1250

 Fax:
 586-755-6790

 E-mail:
 sales@obarausa.com

 Web:
 www.obrarausa.com

SOTA IWASAKI, President

E-mail: sota.iwasaki@obarausa.com DAN WELLMAN, Vice President, Sales & Marketing E-mail: dan.wellman@obarausa.com JAMES JONES, Sr. Sales Coordinator, International Sales E-mail: james.jones@obarausa.com CHAD NESTELL, Sales Coordinator E-mail: chad.nestell@obarausa.com

BRANCHES

Obara Corp. 1346 Jamike Lane Erlanger, KY 41018 Phone: 859-283-5490 Fax: 859-283-5498

ALLEN GIBBONEY, Vice President, Production & Engineering E-mail: allen.gibboney@obarausa.com DAVID ACKLEY, Sales Coordinator E-mail: david.ackley@obarausa.com DAVID BELLISH, Design Coordinator E-mail: david.bellish@obarausa.com

OBARA CORP., USA (cont.)

JEFF DINSER, Quality/Service Coordinator E-mail: jeff.dinser@obarausa.com

BRANCHES

Obara Mexico, S. de R.L. de C.V. Roberto Diaz Rodriguez #212 Ciudad Industrial C.P. 20290 Aguascalientes, Ags. MEXICO Phone: 011-52-449-971-1525 Fax: 011-52-449-971-1526

JUAN PABLO AGUILAR, Sales Coordinator E-mail: jp.aguilar@obara.com.mx

PRODUCTS MANUFACTURED:

Manufacturer of a complete line of resistance welding equipment and supplies: including servo and air robot welding guns, cylinders, AC and DC transformers, fixture guns, PSW guns, air and water cooled cables, shunts, adapters, electrodes, timer-controllers, tip dresser units, tip changer units, cutter blades and most other resistance welding needs. Service includes design engineering, site support, maintenance recommendations and other technical support.

RESISTANCE WELDING PRODUCTS (1987), LTD.

9270 Middle Line Road Blenheim, Ontario, NOP 1A0 CANADA Phone: 519-676-8173 Fax: 519-676-3329 E-mail: info@rwpweld.com Web: www.rwpweld.com

MICHAEL SIMMONS, President E-mail: simmons@tuffaloy.com AL McGUIGAN, Operations Manager E-mail: a.mcguigan@rwpweld.com LISSA VAN RIJN, Controller E-mail: l.vanrijn@rwpweld.com

PRODUCTS MANUFACTURED:

RWP manufactures cold formed gun adapters and arms, RW electrodes and caps, nut welding electrodes and pins, threaded and straight shank adapters, air and water cooled cables, shunts and flexible buss. A complete list of weld gun components to finished product, as well as repair for all OEM weld guns and related components. Manufacturer of power transmission components with full plating and covering options available. We also carry a complete inventory of non-ferrous materials, including copper alloys, aluminum, brass, bronze, tungsten and stainless steel in rod, sheet, plate, cast and forge configurations.

THOMAS BOLTON , LTD.

PO Box 1, Froghall Stoke on Trent Staffordshire ST10 2HA United Kingdom Phone: 44-0-1538-757700 Fax: 44-0-1538-757701 E-mail: info@thomasbolton.net Web: www.thomasbolton.net

JEAN-PHILIPPE LIENARD, Sales Director E-mail: jplienard@thomasbolton.net

THOMAS BOLTON, LTD. (cont.)

STEVE HASLAM, Production Manager E-mail: shaslam@thomasbolton.net IAN CALDWELL, QA Manager E-mail: icaldwell@thomasbolton.net SIMON DAVENPORT, Sales Manager E-mail: sdavenport@thomasbolton.net SALLY COLEMAN, Sales Administration Manager E-mail: scoleman@thomasbolton.net EMMA LEVER, Sales Administration Coordinator E-mail: elever@thomasbolton.net

PRODUCTS MANUFACTURED

Thomas Bolton, Ltd. manufactures copper and copper alloy products in the form of rod, bar, sections and forgings. Their market includes resistance welding, power generation and rotating electrical machinery. Specialist products include welding electrode materials, rotor bars, rings, rotor copper, commutator bars and segments. On-site equipment includes extrusion presses, draw benches, alloy foundry, machine shop, tooling shop, heat treatment furnaces, CNC punching and testing laboratories.

TIPALOY, INC.

1435 East Milwaukee Avenue Detroit, MI 48211-2009 Phone: 313-875-5145 Fax: 313-875-6027 E-mail: tipaloy@tipaloy.com Web: www.tipaloy.com	
HARRY S. RADCLIFF, JR., President & Treasurer Phone: 313-875-5145, Ext. 109	
E-mail: hank@tipaloy.com MITCHELL C. RADCLIFF, Vice President Phone: 313-875-5145, Ext. 106	
E-mail: tipaloy@tipaloy.com ELISABETH C. RADCLIFF, Comptroller & Secretary Phone: 313-875-5145, Ext. 105 E-mail: tipaloy@tipaloy.com	
MILES C. RADCLIFF, Sales Manager Phone: 313-875-5145, Ext. 110 E-mail: miles@tipaloy.com	
Production Manager Phone: 313-875-5145, Ext. 109 E-mail: tipaloy@tipaloy.com	
BRANCHES Tipaloy, Ltd.	

430 Pelissier Avenue, Suite 326 Windsor, Ontario N9A 4K9 CANADA 888-847-2569 Phone: 888-551-2055 Fax:

PRODUCTS MANUFACTURED:

See our web site for down-loadable catalog and new products sheets. Standard single and multiple cylinder design welders. Dedicated welders for resistance welding applications, including design, engineering, and assembly. In-house Resistance welding lab. Onsite resistance welding seminars and consulting. Tips: male and female cap tips, cold-formed tips and shanks, special design tips, large round, square and rectangular faced tips, threaded tips, copper tungsten faced tips, and swivel style tips. Projection stud and nut tips both threaded and tapered tips and assemblies designed for projection nut and stud feeders. Build-A-Die components complimenting our available standard tips. Gun shanks and arms. Holders: straight, offset, and specials. Pipe and straight thread adapters. Cables: dry,

TIPALOY, INC. (cont.)

water- cooled, kickless and laminates. Forgings: seam welder wheels, rough and machined forgings. RWMA alloys: rod & bar, castings. Accessories: manual & pneumatic tip dressers and cutters, pressure gauges. Welding controls, transformers and cylinders.

TUFFALOY PRODUCTS, INC.

1400 S. Batesville Road Greer, SC 29650 Phone: 864-879-0763 800-521-3722 Fax: 864-877-2212 E-mail: tuffaloy@tuffaloy.com www.tuffaloy.com Web: MICHAEL SIMMONS, President Phone: 864-517-1170 E-mail: simmons@tuffaloy.com JEFF PESCHEL, CFO Phone: 864-517-1150 E-mail: conpesch@tuffaloy.com PRIYESH DODHIA, Engineering Manager Phone: 864-517-1130 E-mail: dodhiapk@tuffaloy.com WILLIAM H. BRAFFORD, Sales Manager Phone: 864-517-1165 E-mail: brafford@tuffalov.com DENNIS BAKER, Manufacturing Manager Phone: 864-517-1143 E-mail: dbaker@tuffaloy.com

PRODUCTS MANUFACTURED:

All Standard Spot welding electrodes including caps, standard electrodes – straight and cold formed: Holders including straight, offset, proprietary holders "Equa Tip and Equa Press" dual tip holders: Projection Welding dies and fixtures (design and build): complete range of RWMA alloys in the form of wrought bar, casting, forgings, copper tungsten alloys: seam welding wheels new or reworked: complete line of force gauges: Arctic stud and nut welding electrodes with 10W facing: backup electrodes: weld gun shanks and adapters: "S" series self dressing caps.

WELFORM ELECTRODES, INC.

2147 Kenney Street Warren, MI 48091-3764 Phone: 586-755-1184 586-755-5639 Fax: jbeach@welform.com E-mail: Web: www.welform.com CHUCK BEACH, President E-mail: cbeach@milcomfg.com ED SLADE, Vice President E-mail: eslade@milcomfg.com JEFF BEACH, General Manager E-mail: jbeach@welform.com DON ZYNDA, Sales Manager E-mail: dzynda@welform.com CHUCK BRESSMAN, Controller E-mail: cbressman@milcomfg.com

WELFORM ELECTRODES, INC. (cont.)

BRANCHES

WELFORM PRECISION, LTD. 41 #6 Bldg. 88 Jianeling Road Binjiang District Hangzhou, CHINA 310051 Phone: 86-571-5668-1915 Fax: 86-571-5668-1917 JIM BEACH, Managing Director Asia E-mail: jim.beach@welform.com BEN CHEN, Sales Manager E-mail: ben.chen@welform.com

PRODUCTS MANUFACTURED:

Cold formed or standard straight electrodes and cap adapters; cold formed or straight, forged, cast and bar stock electrode holders for portable and fixture type resistance welding equipment. Copper and copper alloy materials products for above including backup wedges. Laminated leaf shunts and point holders.

Z.J. INDUSTRIES, INC.

125 W. Factory RoadAddison, IL 60101Phone:630-543-6655Fax:630-543-6644E-mail:mikej@zjindustriesinc.comWeb:www.zjindustries.com

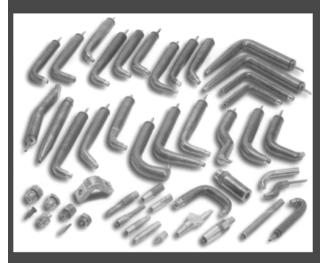
MIKE JAJIC, President E-mail: mikej@zjindustriesinc.com NIC JAJIC, Executive Vice President E-mail: nicj@zjindustriesinc.com MILAN JAJIC, Vice President E-mail: zjmilan@gmail.com Phone: 630-543-6543

PRODUCTS MANUFACTURED:

Z.J. Industries, Inc., is a full-service resistance welding product manufacturer maintaining a large and diverse inventory of welding electrodes, tips, adapters, holders, shunts, cables, welding machine arms, seam welding wheels, resistance welding controls, tip dressers, copper alloys and accessories.

ZJ parts are being used worldwide to manufacture such products as automotive parts, computer housings, hollow metal doors, metal furniture, kitchen appliances, wire displays, shelving, etc.

ZJ INDUSTRIES, INC. RESISTANCE & ARC WELDING SUPPLIES MANUFACTURER



ZJ offers our customers products and services generated by a technologically advanced productive structure run by an efficient organization. All of our employees are involved and empowered with the task of providing utmost customer satisfaction.

COMMITTED TO ON-TIME DELIVERY



125 FACTORY ROAD ADDISON, IL 60101 **630.543.6655** FAX: 630.543.6644 www.zjindustriesinc.com

Components Division

These companies are manufacturers of high quality components and accessories for the resistance welding processes producing controls; transformers; weld guns; weld cylinders, welding contractors, water chillers, cables, shunts, weld monitoring and test equipment.

BF ENTRON, LLC

 PMB 128

 419 The Parkway

 Greer SC 29650

 Phone:
 864-517-1134

 Fax:
 864-517-1137

 Web:
 www.bfentron.com

 BILL MORAN, Technical & Sales Manager - Americas

 Phone:
 864-517-1133

 Fax:
 267-295-2008

 E-mail:
 bill.moran@bfentron.com

MIKE ZINTAK, Product Manager Phone: 864-517-1129 Fax: 815-623-8572 E-mail: mike.zintak@bfentron.com

MANUFACTURING FACILITY

BF ENTRON, LTD. Castle Mill Works Birmingham New Road Dudley West Mid DY1 4DA ENGLAND UK Phone: 011-44-1384-455401 Fax: 011-44-1384-455551

JOHN STANWAY, Managing Director

Phone: 011-44-1384-245678 E-mail: john.stanway@bfentron.co.uk KEVIN CAMBRIDGE, Technical Manager Phone: 011-44-1384-245667 E-mail: kevin.cambridge@bfentron.co.uk SEAN HEFFERNAN, Project Manager Phone: 011-44-1384-245660 E-mail: sean.heffernan@bfentron.co.uk

PRODUCTS MANUFACTURED:

Resistance welding controls: Mid Frequency Inverters, Single phase AC/DC. Three phase DC, Cascade Multi SCR/Multi Valve. Constant Current Controls with monitoring. Retrofit controls. Flat packs for customer integration. Automotive controls with fieldbus systems such as DeviceNet, InterBus, Profibus, Ethernet, Networking systems with computer monitoring/programming. Ground fault detection sensitivity 15ma, 30ma, 10hm and 24v earth loop measurement. Control for spot, seam, projection, robot, manual, integrated, suspended, portable, multi-welder, transguns. Self monitoring systems with Ethernet central supervision.



CenterLine (Windsor) Limited 415 Morton Dr., Windsor Ont. N9J 3T8

CAL MANUFACTURING COMPANY, INC.

5500 East "V" Avenue PO Box 180 Vicksburg, MI 49097 269-649-2942 Phone: 269-649-2946 Fax: Toll Free: 888-272-5446 E-mail: calcables@aol.com www.calmfginc.com Web:

BRIAN BENSON, Vice President, Sales E-mail: calcables@aol.com CHERYL BENSON, Vice President, Daily Operations, Research & Development E-mail: calcables@aol.com

PRODUCTS MANUFACTURED:

Cal Manufacturing is a quality manufacturer of resistance welding cables, aircooled, water-cooled, dual conductor, kickless cables, laminated shunts, furnace heating and induction cables. They also offer their patented Swivel-King that will allow your cable to rotate up to 150 degrees in either direction. Cal cables is also offering new product lines as of 2011 to include specialized cables for furnace heating and induction cables, busbars and connectors as well as others.

For a complete product line, visit their website at www.calmfginc.com.

Cal Manufacturing is a small woman-owned, woman-run business that offers the fastest delivery available. In many cases they can expedite your order to ship the very next day.



CENTERLINE (WINDSOR) LTD. AUTOMATION COMPONENTS DIVISION 655 Morton Drive

000 100110	II DIIVE
Windsor, (Ontario N9J 3T9
CANADA	
Phone:	519-734-8330
	800-268-8330
Fax:	519-734-2006
E-mail:	info@cntrline.com
Web:	www.cntrline.com
	I DENETEAU Chief Eve

MICHAEL J. BENETEAU, Chief Executive Officer E-mail: mjb@cntrline.com PHIL CAMPBELL, Vice President of Sales E-mail: phil.campbell@cntrline.com DAN E. USZYNSKI, General Manager E-mail: danuszynski@cntrline.com JOHN HEATH, Plant Manager E-mail: jheath@cntrline.com

CENTERLINE (WINDSOR) LTD. AUTOMATION COMPONENTS DIVISION (cont.)

BRANCHES

PO Box 321187 Detroit MI 48232-1187 Phone: 313-961-3731

PRODUCTS MANUFACTURED:

CenterLine supplies a wide range of automation component products for robotic, fixture, and manual resistance welding production systems. Products include: the CenterLine[®] Flex-Gun[™], OEM specific welding gun styles, OHMA[®] air/oil intensifying cylinders; the STAAC[®] family of low-impact pneumatic cylinders; the patented SmartElectrode[™] nut detection system; Flex-Fast[™] fastener welder platform; Rev-Tec[™] servo indexing tables and custom tooling and automation products. From "Tips to Turnkey" CenterLine can supply any need.

DARRAH ELECTRIC COMPANY

5914 Merrill Avenue Cleveland, OH 44102-5699 216-631-0912 Phone: 800-621-0014 216-631-0440 Fax. decdarrah@earthlink.net E-mail: www.darrahelectric.com Web: DAVID J. DARRAH, President Phone: 216-631-9941 E-mail: david_darrah@darrahelectric.com JOANN LIST, Inside Sales Manager Phone: 216-631-9944 E-Mail: joann_list@darrahelectric.com ANDY MEIKLE, Sales Engineer Phone: 216-631-9945 E-mail: andy_meikle@darrahelectric.com DIANA MEIKLE, Outside Sales Phone: 216-631-9942 E-mail: diana meikle@darrahelectric.com MIKE DARRAH, Materials Manager Phone: 216-631-0304 E-mail: mike_darrah@darrahelectric.com SCOTT JUMP, Quality Control Manager Phone: 216-631-9968 E-mail: scott_jump@darrahelectric.com

PRODUCTS MANUFACTURED:

Darrah Electric Company offers a complete line of SCR Contactors for resistance welding in both air and water cooled designs. Contactors are available in ratings from 5 KVA thru 1500 KVA applications. Solid-state ignitron tube and mechanical contactor replacements are also available.

Darrah also offers a wide selection of air and water cooled power semiconductors assemblies in all common circuit configurations.

They design and build D.C. Power supplies to 50 KA – 1500 VDC.

DIMPLEX THERMAL SOLUTIONS (Formerly Schreiber Engineering & Koolant Koolers) 2625 Emerald Drive Kalamazov, MI 49001 Phone: 800-968-5665 Fax: 269-349-8951

Closed Loop Cooling Solutions

DTS Features:

- Totally self-contained with re-circulating pump
- Easy to read digital temperature controller
- Fused disconnect
- Brazed plate evaporator
- Vertical air discharge
- Built in sub-cooling
- Cleanable air filters
- Non-ferrous wetted components
- Manual bypass

The NEW MasterChill design for typical welding applications:

Spot Welding

- Seam Welding
 Projection Welding
- Projection Weldi
 Laser Welding
- Butt Welding
- Tig Welding
- Mig Welding



DIMPLEX THERMAL SOLUTIONS (cont.)

dthomason@dimplexthermal.com E-mail: Web: www.dimplexthermalsolutions.com

DANNY THOMASON, National Sales Manager Email: dthomason@dimplexthermal.com DENISE KLAREN, National Sales Director

Email: dklaren@dimplexthermal.com

NATE NORMAN, Inside Sales

E-mail: nnorman@dimplexthermal.com

BRANCHES

GERMANY **Dimplex Thermal Solutions (Riedel)** Kulmbach, GERMANY

PRODUCTS MANUFACTURED Manufacturer of liquid fluid-chillers from 1/8 ton through 1000's of tons of cooling capacity.

ELECTRON BEAM TECHNOLOGIES, INC.

1275 Harvard Drive Kankakee, IL 60901 815-935-2211 Phone: Fax: 815-935-8605 E-mail: sales@electronbeam.com Web: www.electronbeam.com

PAUL WLOS, President

E-mail: sales@electronbeam.com VALGENE RALOFF, Product Manager E-mail: sales@electronbeam.com

PRODUCTS MANUFACTURED:

O.E.M. manufacturer of wire, cable and bare copper rope for the resistance welding market. Our manufacturing ability provides our customers with bunched, stranded and rope lay copper conductors for manufacture of resistance welding shunts and cables, air and water cooled. We custom design to service your market needs with a full range of gage and MCM sizes available.

ENTRON CONTROLS, LLC.

601 High Tech Court Greer, SC 29650 864-416-0190 Phone: 864-416-0195 Fax: E-mail: info@entroncontrols.com Web: www.entroncontrols.com

PATRICIA S. ADAMS, President

E-mail: patricia.adams@entroncontrols.com DONALD C. SORENSON, Director of Engineering E-mail: don.sorenson@entroncontrols.com **ROBB BOHNERT**, Sales E-mail: bohnert@entroncontrols.com PETE STEBBINS, Sales

E-mail: stebbins@entroncontrols.com

HENRY WYSMAN, Sales

E-mail: wvsman@entroncontrols.com GREG VAN DYKE, Sales

E-mail: g.vandyke@entroncontrols.com

ENTRON CONTROLS, LLC. (cont.)

PRODUCTS MANUFACTURED:

Microprocessor-based resistance welding controls: MidFrequency DC Inverters. Single phase AC or DC Controls. Three Phase DC or LDC controls. Cascade Multi SCR/Multi Valve. Most all controls available with Constant Current and Monitoring. All controls available in "Flat Pak" form for custom integration into existing enclosures. Retrofit style controls are available for use with existing SCR's for all models. RS232 and RS485 and Ethernet ENLINK networking communications software. Pressure control and sensing systems integrated into weld control. Air or water cooled SCR and mechanical isolation contactors alone or bundled with controls. Weld controls designed for use with hand held weld guns with integral transformers that meet recommendations including Ground Fault Detection. Specialty designed controls for band saw welding, butt welding, annealing, flash welding, bench use and others. Ability to customize controls such as multiple controls in a single cabinet. Welder Interlocks for load control and distribution.

ETAL, S.A. DE C.V.

Felipe Angeles #52, Colonia Bellavista Tacubaya MEXICO D.F. 01140 MEXICO Phone: 011-52-55-5278-3900 Fax: 011-52-55-5277-8451 E-mail: ventas@etal.com.mx Web: www.etal.com.mx Web: www.etal.com.mx DAVID GANSER, General Manager E-mail: dganser@etal.com.mx CESAR GARCIA, Sales Manager

E-mail: cgarcia@etal.com.mx ESTER CORTES, Marketing Representative E-mail: ecortes@etal.com.mx

BRANCHES:

San Luis Potosi, MEXICO Puebla, MEXICO Queretaro, MEXICO Guadalajara, MEXICO Silao, MEXICO Monterrey, MEXICO Juarez, MEXICO

ARACELI FLORES, Regional Sales Representative E-mail: aflores@etal.com.mx

PRODUCTS MANUFACTURED:

ETAL, S.A. de C.V. is a manufacturer of Class I, II, III, 10,11, 12,13, and 14 resistance welding consumables (caps, adapters, electrodes, holders) shunts, cables, seam welding wheels (rings). Specialty electrodes (molybdenum, tungsten, and moly/tungsten copper alloys). Manufacturing located in Mexico City with sales and technical support offices serving their customers throughout the Mexican Republic, Central America, and the United States for over 40 years. Offering machine overhauls, welding courses, weld maintenance outsourcing, warehouse administration, and inventory stocking programs. Fully integrated manufacturing processes (forge, foundry, extrusions, sintering, brazing, CNC machining); Distributor of new and remanufactured spot welders, controls, transformers.

etal

United States.

CAPS



SHUNTS



KICKLESS CABLES



HOLDERS

ELECTRODES



SEAM WHEELS

PHONE: 011-52-55-5278-3900 E-MAIL: ventas@etal.com.mx

DAVID GANSER, GENERAL MANAGER dganser@etal.com.mx CESAR GARCIA, SALES MANAGER cgarcia@etal.com.mx RICARDO LOPEZ, CHIEF ENGINEER rlopez@etal.com.mx ARACELI FLORES, REGIONAL SALES aflores@etal.com.mx ESTHER CORTES , MARKETING ecortes@etal.com.mx

Felipe Angeles #52 Bellavista Tacubaya MEXICO DF 01140 FAX: 011-52-55-5277-8451 URL: www.etal.com.mx

Manufacturer of:

ALL YOUR RESISTANCE

WELDING CONSUMABLES

- Electrodes
- Shanks

ETAL is a Mexican Company with over 40 years experience in the resistance welding industry, serving our customers throughout the Mexican Republic, South America and the

- Adapters
- Caps
- Shunts
- Kickless Cables
- Seam Wheels and more

Processes:

- Copper Forge and Foundry
- Machining
- Brazing
- Cold Heading
- Powder Metal Technology

Technical Assistance:

- Welding courses
- Maintenance services
- Warehouse administration
- · Specialty part design

RWMA Standard Materials such as:

- Class 1- Electrolytic Copper · Class 2- Copper, Chromium,
 - Zirconium.
- · Class 3- Copper, Nickel, Beryllium.
- Class 10- Copper, Tungsten
- Class 14- Molybdenum
- · And more.

FLEX-CABLE

 5822 N. Henkel Road

 Howard City, MI 49329

 Phone:
 231-937-8000

 Fax:
 231-937-8091

 E-mail:
 sales@flexcable.com

 Web:
 www.flexcable.com

JAN CHRISTIANSON, Vice President, Tech Development E-mail: jan.christianson@flexcable.com TIM JONES, Operations Manager E-mail: tjones@flexcable.com SHELLEY McBRIDE, Inside Sales E-mail: sales@flexcable.com

PRODUCTS MANUFACTURED:

Manufacturers of resistance welding cables, including air-cooled, watercooled and kickless, laminated shunts, adaptors, induction furnace cables, primary cables, servo cables and robotic dress-out components. Flex-Cable has the capabilities to manufacture all types of custom cables.

INTERTRON INDUSTRIES, INC.

2110 South Wright Street Santa Ana, CA 92705-5314 Phone: 714-549-8948 Fax: 714-549-3247 E-mail: ricky6@earthlink.net Web: www.intertron-ind.com

RICKY MARTIN, President

E-mail: ricky6@earthlink.net

PRODUCTS MANUFACTURED:

Single phase welding controllers, multi-gun welding and machine controllers with multi-axis servo drive, three phase frequency converter and three phase DC welder and welding machine controllers, mid-frequency inverter welding controllers. The weld controllers have built-in options of programmable electronic air pressure regulators, data acquisition, and weld processing monitors.

MATUSCHEK WELDING PRODUCTS, INC.

42378 Yearego Drive Sterling Heights, MI 48314 Phone: 586-991-2434 Fax: 586-991-2438 E-mail: info@matuschek.com Web: www.matuschek.com

LARRY WRIGHT, General Manager Email: lawrence.wright@matuschek.com CHRIS OKADA, Sr. Sales Engineer E-mail: christopher.okada@matuschek.com

Matuschek Welding Products, Inc. manufactures, imports, and distributes Resistance Welding Controllers, Instrumentation, and equipment for the Micro-Welding and Sheet Metal Welding industries. State-of-the-art Midfrequency and High-frequency Inverter Power Supplies, Precision Weld Heads and Hand-held Process Analyzers provide "QUALITY Spot Welds made easy." Matuschek controllers offer Real-Time Adaptive Control, QC Software Solutions, Tolerance Band Control and Fault Alert Capabilities.



MASTER® Adaptive Resistance Welding Control



One Weld Schedule - DOES IT ALL !!

MFDC & HFDC Resistance Welding Controls





High Current Resistance Welding Controls



Minature Part Welding



Matuschek Welding Products, Inc. 42378 Yearego · Sterling Heights, MI 48314 · Phone (586) 991 – 2434 Fax (586) 991 – 2438 Email: info@matuschek.com · Internet: www.matuschek.com ·

RoMAN MANUFACTURING, INC.

861 47th Street SWGrand Rapids, MI 49509-5103Phone:616-530-8641Fax:616-530-8953E-mail:roman@romanmfg.comWeb:www.romanmfg.com

ROBERT W. ROTH, President/CEO E-mail: rroth@romanmfg.com ROBERT S. HOFMAN, Vice President E-mail: rhofman@romanmfg.com DONALD DECORTE, Vice President, Sales & Marketing E-mail: ddecorte@romanmfg.com MARK SIEHLING, Vice President, Engineering E-mail: msiehling@romanmfg.com GREG GARTHE, Operations Manager E-mail: ggarthe@romanmfg.com RON ZAPOLNIK, Purchasing Agent E-mail: rzapolnik@romanmfg.com

BRANCHES

 RoMan Engineering Services (RES)

 32711 Glendale

 Livonia, MI 48150

 Phone: 248-585-5540

 Fax:
 248-585-5577

KURT HOFMAN, President

Phone: 616-299-4405 (cell) E-mail: khofman@romanmfg.com

 Quality Brass Foundry

 1251 Judd Avenue, SW

 Grand Rapids, MI 49509-1018

 Phone: 616-243-1953

 Fax:
 616-243-2091

MIKE CRAMER, Foundry Manager

E-mail: mcramer@romanmfg.com

PRODUCTS MANUFACTURED:

Resistance welding transformers and special water-cooled transformers; MFDC Inverter Power Supplies, Three Phase DC Power Supplies, Frequency Converters; manual and motorized tap switches; electrical insulation fabrications: non-ferrous castings and patterns. Complete repair and rebuild services for all brands. Welding, electrical, and industrial engineering consulting, including a complete welding and metallurgical laboratory.

SCHREIBER ENGINEERING CORPORATION (See DIMPLEX THERMAL SOLUTIONS)

TECHNO-CONTROL CYBERNETIC, INC.

3470 Enterprises Boul. Terrebonne, Quebec J6X 4J8 CANADA Phone: 450-968-8896 Fax: 450-968-8991 Toll-free: 866-968-8896 Email: info@techno-control.com Web: www.techno-control.com

JEAN-PIERRE DERDEYN, President ROBERT ST- PIERRE, Chief of Production FRANCOIS LIZOTTE, Electronic

TECHNO-CONTROL CYBERNETIC, INC. (cont.)

DENIS LABROSSE, Sales, Communication and Marketing VERONIQUE DERDEYN, Industrial Designer DIANE DERDEYN, Executive Secretary and Accounting

PRODUCTS MANUFACTURED:

Techno-Control Cybernetic, Inc. manufactures dependable single-phase AC digital resistance welding controllers. The different Series of controllers are available with water-cooled SCR's, applied pressure monitor control (option), keypad programming, modular, upgradeable, production-oriented, very userfriendly, and can be adapted to the customer's specific needs. They supply controllers and control systems that can replace old controllers for all types and various resistance welding applications (rocker arm, seam, butt, multihead, multiple sequence welders, guns and bench). Specialized in resistance welding controllers, they also offer and manufacture special and standard resistance welding equipment, consulting services, course in resistance welding, and carry a full line of replacement parts and consumables, including new and rebuilt welding transformers, shunt, resistance welding-related pneumatics, copper alloys, electrodes, etc. Their technical department can upgrade, refurbish, adapt and service to original specification all existing resistance welding equipment. A solely resistance welding-oriented company.

UNITROL ELECTRONICS, INC.

702 Landwehr Road	
Northbrook, IL 60062-2310	
Phone:	847-480-0115
Fax:	847-480-0932
E-mail:	info@unitrol-electronics.com
Web:	www.unitrol-electronics.com

- ROGER B. HIRSCH, President
- E-mail: roger@unitrol-electronics.com CAROL V. HIRSCH, Executive Vice President
- E-mail: carol@unitrol-electronics.com
- RONALD LEIBOVITZ, Vice President, Manufacturing E-mail: ron@unitrol-electronics.com
- LEONARD ARMAN, Director of Research & Development E-mail: leonarda@unitrol-electronics.com

DAVID HIRSCH, Vice President, Production E-mail: info@unitrol-electronics.com

PRODUCTS MANUFACTURED:

Unitrol Electronics, Inc., manufactures microcomputer solid-state resistance welding controls using either keypad or thumbwheel entry, and featuring SOFT TOUCH, a welder safety system. Systems include water and aircooled SCR contactors. Controls supplied in single and three-phase styles for commercial and MIL-spec welding in sizes to match any welding machine. Available options include constant current, electrode force measurement, communication ports, and electronically set air pressure regulators. All controls feature a minimum of components and utilize design that eliminates wiring cables, ribbon cables, and unnecessary hardware. Available in single SCR and up to 15 SCR contactor styles with ability to control up to 16 solenoid valves and monitor up to 5 proximity switches. TEMPERATURE FEEDBACK: Unitrol specializes in total feedback resistance brazing systems that replace torch and oven brazing on many components. WATER CHILLERS: Unitrol manufactures water chillers that are balanced for spot welder applications. Complete package water chillers are available up to 50 tons in all standard voltages.



UNITROL ELECTRONICS, INC.

702 Landwehr Rd. Northbrook, Illinois 60062 847-480-0115 800-621-4244 FAX 847-480-0932 Cellular 847-971-1186 FMAIL ron@unitrol-electronics.com

Ronald Leibovitz

Resistance Welding Controls

- Temperature Feedback Resistance Brazing
 - Water Chillers And Coolers
 - Resistance Welding Technology

WATTEREDGE, INC.

567 Miller RoadAvon Lake, OH 44012Phone:440-933-6110Fax:440-933-8248Email:sales@watteredge.comWeb:www.watteredge.com

JOSEPH LANGHENRY, President Phone: 440-930-6918 E-mail: joe.langhenry@watteredge.com BEN GONTARZ, Chief Engineer Phone: 440-930-6911 E-mail: ben.gontarz@watteredge.com JOHN JEFFREYS, Purchasing Phone: 440-930-6914 E-mail: john.jeffreys@watteredge.com ED LANGHENRY, JR., Sales Phone: 440-930-6917 E-mail: ed.langhenry@watteredge.com

PRODUCTS MANUFACTURED:

Manufacturer of air and water-cooled resistance welding cables, including heavy duty kickless cables. We also produce copper laminated shunts, both in the press-welded and riveted style. We can provide a complete robot dress-out package, which includes heavy duty abrasion and heat protection items. Finally, cables for a variety of applications, including furnace, vacuum and induction. This includes specialty items, such as flat braided flexible connectors and ground cables for power generation applications. Secondary power applications, with regard to air-cooled and water-cooled applications, is our specialty.

WELDCOMPUTER CORPORATION

 105 Jordan Road

 Troy, NY
 12180

 Phone:
 800-553-9353

 Fax:
 518-283-2907

 E-mail:
 info@weldcomputer.com

 Web:
 www.weldcomputer.com

VINCENT THOMAS, Sales Manager E-mail: sales@weldcomputer.com

PRODUCTS MANUFACTURED:

WeldComputer Corporation manufactures a broad line of welding controls and monitors for all commercial, military and aerospace resistance welding applications. Products work with spot, projection, seam, flash, stud and capacitive discharge welding equipment to improve weld quality, increase weld consistency and throughput, reduce scrap, and improve worker safety. Controls and monitors help reduce costs and improve quality assurance beyond what can be achieved with conventional equipment. Monitoring products prevent bad welds from passing through production undetected. Adaptive controls reduce incidence of bad welds and increase consistency of

WELDCOMPUTER CORPORATION (cont.)

all welds produced. WeldComputer[®] Adaptive Controls have been granted military approval to eliminate destructive testing. Conventional inverter and SCR based controls emulate any control function and connect directly to any welding transformer. Expert consulting services are available to analyze welding operations, provide practical solutions to improve welding performance, and reduce losses from machine inconsistencies and weld variability.

WATTEREDGE

Resistance Welding Cables & Secondary Connector for Robotic Welding



Watteredge advanced design in alternate polarity resistance welding cables increases performance and longevity, producing the lowest possible inductive resistance. The unique star separator design maintains strong strand position and excellent water flow. We also include hi-temp internal/external restraining collars to minimize stress in the bending area and low inductive reactance to

produce overall lower transformer KVA demand.

Custom-Made Laminate Shunts

Watteredge manufactures a broad variety of shunts using our exclusive, patented Pressweld[™] technology. These custom-made laminate shunts can provide optimal electrical values, while effectively eliminating the costly problem associated with resistive voltage losses. This unique process gives our shunts resistance values equal to those of flat copper bar, minimizes voltage loss, maintains uniform flow of current and are very cost effective.

Braided Flexible Connectors

Watteredge braided flexible connectors deliver the maximum amount of electrical power at peak efficiency, and at half the resistance levels of present connectors. These connectors are also manufactured to compensate for vibration, expansion/contraction of bus units and to deliver imimum resistance values.

Forked Terminal Connections

For the automotive industry, our forked terminal connections efficiently eliminate busbar arrangements and reduce weight on robot arms. This solution eliminates premature abrasion wear.

Water-Cooled Jumpers

Our water-cooled jumpers are made from swaged cylindrical connectors crimped over copper stranding which minimizes wire breakage due to bending and fatiguing.



Watteredge Prime Series Transgun Cables are designed specifically to excel in the demanding environment of robotic welding. A quick-change alternative to inflexible and labor intensive hardware setups, which result in less downtime, improved productivity, and lower manufacturing costs.

Cellar Services a division of Watteredge, Inc. Specialized Industrial Products for welding, material handling, and dispensing operations.

Robot Dress Out & Cable
 Clamps/Brackets
 Abracion Portection and Renair
 Hangers and Runding Straps

Clamps/Brackets Industrial Specialty Items • Abrasion Protection and Repair • Hangers and Bundling Straps

Associate Member Division

SALES & MARKETING ORGANIZATIONS

APEX CONTROLS, INC.

3566 Highland Drive PO Box 118 Hudsonville, MI 49426 Phone: 616-669-5111 616-669-8115 Fax: sales@apexcontrols.cc E-mail: Web: www.apexcontrols.cc MICHAEL TEBOS, President E-mail: mtebos@apexcontrols.cc STEVE BOWERMAN, Engineering Manager E-mail: sbowerman@apexcontrols.cc MATT POST, Component Sales E-mail: mpost@apexcontrols.cc TERRY L. STEVENS, Engineering Sales

E-mail: tlstevens@apexcontrols.cc

SERVICES PROVIDED:

Apex Controls is the manufacturer's representative for Weld Controls and DC Inverters, Weld Guns and Cylinders, AC and DC Transformers, Pedestal Welders, Nut and Stud Feeders and related resistance welding components. Assisting OEMs, tool builders and manufacturers with sizing and specification of resistance welding components and controls engineering. Programming of special machines for manufacturers and OEMs. Assembly and wiring of special machine control panels and machine wiring.

BRUSH WELLMAN, INC.

6070 Parkland Blvd. Mayfield Heights, OH 44124

Phone:	216-486-4200
	800-443-7731
Fax:	216-383-4005
E-mail:	alloy_tech_svc@brushwellman.com
Web:	www.brushwellman.com

BARBARA MUNDERLOH, Marketing Manager

E-mail: barbara_munderloh@brushwellman.com

BRANCHES:

Brush Wellman		
27555 College Park Drive		
Warren, MI 48088		
Phone:	800-521-8800	
	586-772-2700	
Fax:	586-772-2472	

SERVICES PROVIDED:

Brush Wellman, Inc., headquartered in Mayfield Heights, Ohio, is a wholly owned subsidiary of Brush Engineered Materials, Inc. (NYSE: BW). Brush Wellman is the world's leading producer of high performance alloys, including RWMA Class III and Class IV copper alloys for welding applications. A comprehensive selection of rod, bar, plate, tube, casting, and master alloys are available.

Around the world, the company's engineered materials can be found in technically demanding end-use products within the telecommunications and computer, automotive electronics, appliance, industrial components, plastics tooling, oil and gas, aerospace and defense, and off-highway and mining equipment markets.

DENGENSHA AMERICA CORPORATION 7647 First Place Drive Bedford, OH 44146 Phone: 440-439-8081 440-439-8217 Fax: sales@dengensha.com E-mail: www.dengensha.com Web: DONALD J. GRISEZ, President Phone: 440-439-8081, Ext. 13 E-mail: dgrisez@dengensha.com AKIO TANEBE, Vice President Phone: 440-439-8081, ext. 11 E-mail: atanebe@dengensha.com STEPHEN M. ANDRASSY, Regional Sales & National Accounts Manager Phone: 440-439-8081, Ext. 10 E-mail: sandrassy@dengensha.com JOSEPH E. BRUNK, Inside Sales Manager Phone: 440-439-8081, Ext. 16 E-mail: jbrunk@dengensha.com KENICHI "KEN" TŚUNODA, Japanese Sales Engineering Manager Phone: 440-439-8081, Ext. 20 E-mail: ktsunoda@dengensha.com NAOYUKI "NATE" UKAI, Japanese Technical Engineer Phone: 440-439-8081, Ext. 15 E-mail: nukai@dengensha.com BRANCHES CANADA JEFF RENAUD, Sales Representative Phone: 416-420-6059 E-mail: jeff@weltexrobotics.ca MEXICO - SALTILLO/MONTERREY ALVARO GALLEGOS Phone: 011-52-844-431-7331 E-mail: agallegos@rialser.net MEXICO - AGUASCALIENTES ROGELIO GALLEGOS Phone: 011-52-449-931-8768 E-mail: rogallegos@rialser.net MEXICO - MEXICO CITY MARIO GALLEGOS Phone: 011-52-55-5769-0468 E-mail: mgallegos@rialser.net MEXICO - HERMOSILLO DANIEL BELTRAN Phone: 011-52-662-262-7005 E-mail: dbeltran@proautomation.com.mx MICHIGAN PAUL SHEIBELS, Sales Representative Phone: 248-877-9855 E-mail: psheibels@dengensha.com

SERVICES PROVIDED:

Launched in 1985 as the North American sales and service division of Dengensha Manufacturing Co., Ltd., headquartered in Kawasaki, Japan. Complete line of systems and products sold and serviced include diagnostic/monitoring equipment; electrodes; caps; locating pins; holders; shunts; spot, projection, seam, flash, multisport and portable welding

DENGENSHA AMERÎCA I.L

Serving all of your **North American Resistance Welding Needs !**

Pedestal welders





Testing Equipment

Servo-spot Welding Guns



Consumables



Welding Controls



Service





ADDING VALUE ... EVERYDAY!



Serving you with 7 locations throughout the USA, Canada, and Mexico.

> Please contact us at: www.dengensha.com 440.439.8081 440.439.8217 [fax] sales@dengensha.com



DENGENSHA AMERICA, INC. (cont.)

machines; welding guns; nut and bolt feeders; welding transformers; welding controls; and monitoring and measuring equipment, as well as secondary cables and electrodes.

FREEPORT-McMORAN COPPER AND GOLD

Bayway Operations

48-94 Bayway Avenue Elizabeth, NJ 07202 Phone: 908-558-4318 Fax: 908-351-9475 E-mail: bron_zienkiewicz@fmi.com Web: www.fcx.com/metals/bayway.htm

BRON ZIENKIEWICZ, Senior Sales & Marketing Representative E-mail: bron_zienkiewicz@fmi.com MILTON TANN, Senior. Customer Service Representative E-mail: Milton_Tann@fmi.com WILLIAM GEISSEL, Plant Manager

E-mail: william_geissel@fmi.com

SERVICES PROVIDED:

Freeport-McMoRan Copper and Gold – Bayway Operations offers a full line of copper and copper alloy products specifically designed to meet the needs of our customer's critical application requirements. Our alloy selection includes Oxygen free coppers, ETP copper and a wide variety of high-copper alloys. Our RWMA Class I, II, and III materials are available in Rod, Bar, Tube and Coiled Stock; including our Class III Beryllium Free UNS C18000 alloy, for cold heading and machined welding electrodes and caps and related resistance welding components.

FUSION WELDING SOLUTIONS

20836 Hall Road, #321		
Clinton Twp., MI 48038		
Phone:	248-743-0725	
Fax:	248-281-0991	
E-mail:	info@fusionwelding.com	
Web:	www.fusionwelding.com	

JOHN INSCHO, CEO E-mail: jinscho@fusionwelding.com BARB HAYES, Administrative Manager E-mail: bhayes@fusionwelding.com CHARLES ORSETTE, Executive Weld Lab Manager E-mail: corsette@fusionwelding.com

BRANCHES

ALABAMA OFFICE 8331 Highway Eleven Trussville, AL 35173

SERVICES PROVIDED:

Fusion Welding Solutions is a full service engineering service engineering company that specializes in engineering and consulting services for the welding industry. Their staff and laboratories offer skilled welding and controls engineers with a knowledge base that covers all aspects of the welding processes, certifications, and compliance with customer standards. Fusion Welding Solutions has extensive experience in the design, review, and set-up of resistance, laser, and arc welding processes. Their staff is available on a short or long-term basis, and is always on-call for emergency situations. Fusion Welding Solutions is flexible to work with the needs and requirements of each customer.



Freeport-McMoRan Copper & Gold -

Bayway Operations in Elizabeth, New Jersey, provides unique products for industry, transportation, and communications. We produce a complete line of ETP copper and oxygen-free copper wire in assorted configurations. Additional products include copper alloys for special applications, such as aerospace, where materials are subject to severe environmental conditions.

RWMA Class 1, 2 and 3 materials are available in Round Rods, Square Bars, Coiled stock plus a broad range of configurations, shapes and profiles. Freeport-McMoRan Bayway Operations manufacturers these products in the following alloys:

Class 1 C16200 Class 2 C18150 and C18200 Class 3 C18000 (Beryllium Free)

All products meet RWMA (Resistance Welder Manufacturers Association) standards.

We are committed to providing superior quality products, produced at competitive costs, to customers around the globe. We seek to prosper by forging partnerships with our customers and suppliers.

Freeport-McMoRan Copper & Gold BAYWAY OPERATIONS

48-94 Bayway Avenue Elizabeth, New Jersey 07202 USA Phone: 800-522-9929 / 908-351-3200 Fax: 908-351-9475 Customer Service Phone: 908-558-4319 Sales & Marketing Phone: 908-552-4318 Email: baywaysales@fmi.com **Visit our NEW WEB SITE:** www.fcx.com/metals/bayway.htm

FUSION WELDING SOLUTIONS (cont.)

Quality and cost effective services include; Weld Engineering, Controls Engineering, Robotics, Welder Training and Certification, WPS and PQR Development, Metallurgy Services, Simulation Modeling and Analysis, Design and Set-up on Resistance, Laser, and Arc Welding Processes.

HUYS WELDING STRATEGIES, LTD.

175 Toryork Drive, Unit #34 Weston, Ontario M9L 1X9 CANADA Phone: 416-747-1611 Fax: 416-747-7171 E-mail: weldingstrategies@huysindustries.com Web: www.huysweld.com KEVIN CHAN, Technical Sales Engineer

E-mail: kchan@huysindustries.com DOMINIC LEUNG, Engineer E-mail: dleung@huysindustries.com CAM DAVIDSON, Engineer E-mail: cdavidson@huysindustries.com

CLAIR SCOTCHMER, Administration

E-mail: cscotchmer@huysindustries.com

BRANCHES

CHATHAM BRANCH 444 Riverview Drive, RR #5 Unit #11 Chatham, Ontario N7M 5J5 CANADA Phone: 800-461-9936

MEXICO BRANCH Templo de Quetzalcoatl 12 Col. Perisur Hermosillo, Sonora CP 83294, MEXICO Phone: 011-52-662-254-2358 JAVIER DURAN

E-mail: jaduran@posgrado.cifus.uson.mx

NORTH CAROLINA BRANCH 131 Franklin Drive, Unit 353 Franklin, NC 28734-3249 Phone: 800-461-9936 JIM PRITCHARD

E-mail: techsupport@huysindustries.com

SERVICES PROVIDED:

Exclusive distributor in the Americas of SORPAS[®] welding software, Harms+Wende weld controllers and equipment, "Cost per Weld' cost saving strategies, training courses, and the FIRSTWELD[™] program to assist companies in optimizing their welding parameters. The company also provides SPOTRON diagnostic equipment, I.M. cylinders and Braeuer tip dressers and changers. Huys Welding Strategies also offers the repair and servicing of Harms+Wende products in North America.

INDUSTRIAL SUPPLIER LAREY, INC.

3620 East 14th Street Brownsville, TX 78521 Phone: 956-982-1350 Fax: 956-982-1397 E-mail: iisco93@yahoo.com

INDUSTRIAL SUPPLIER LAREY, INC. (cont.)

MOISES LARA, Sales Manager

Email: iisco93@yahoo.com

SERVICES PROVIDED:

Industrial Supplier Larey, Inc., is a steel and engineering plastics service center and a full service distributor of Tool Steel, Aluminums, Carbon Steels, Engineering Plastics, Copper Alloys, and Resistance Welding Electrodes.

KVA RESISTANCE WELDING SUPPLY

 1371 Brass Mill Road, Suite C

 Belcamp, MD 21017

 Phone:
 410-273-0609

 Fax:
 410-273-6031

 E-mail:
 info@kvawelding.com

 Web:
 www.kvawelding.com

CHRIS BREIDENBAUGH, President

E-mail: chris@kvawelding.com

SERVICES PROVIDED:

KVA is a full-service distributor of all things related to resistance welding. Among other things, they stock/sell or service: caps, shanks, electrodes, adapters, cables, shunts, controls, transformers, weld cylinders, electrode dressing tools, and copper bar stock. They also offer a wide array of engineering functions, and can assist in the design of special parts, or their in-house personnel can design entire machines.

LAKE WELDING SUPPLY CO.

363 Ottawa Street		
Muskegon, MI 49442		
Phone:	231-722-3773	
	800-873-5253	
Fax:	231-725-9113	
E-mail:	sales@lakewelding.com	
Web:	www.lakewelding.com	

DENNIS KING, Resistance Welding Specialist E-mail: dking@lakewelding.com TOM LESNESKI, Sales Manager

E-mail: tlesneski@lakewelding.com

SERVICES PROVIDED:

Lake Welding Supply has been serving the welding industry since 1953. Their unwavering commitment to customer satisfaction and innovative solutions for their customers set them apart. They are a distributor of MIG, TIG, and Resistance Welding equipment and consumables. They also provide industrial, specialty, medical and carbonic gases, safety equipment, abrasives, and power and hand tools.

MANUFACTURAS EN COBRE ALEADO S.A. DE C.V.

Calle 3 #2 Zona Industrial Benito Juarez Queretaro, Queretaro MEXICO 76120 Phone: 011-52-442-2-1711-71 Fax: 011-52-442-1-82254-6 E-mail: mainmetal@prodigy.net.mx Web: www.macosa.org

ARTURO TREJO GARCIA, General Manager E-mail: Arturo.trejo@macosa.org ABEL GARCIA, Imports Manager E-mail: abel.garcia@macosa.org

MANUFACTURAS EN COBRE ALEADO S.A. DE C.V. (cont.)

LUIS GARCIA VEGA, Sales Manager E-mail: iila_2@yahoo.com.mx

SERVICES PROVIDED:

Manufacturas En Cobre Aleado S.A. de C.V. manufacture and import of all kinds of resistance welding consumables and foreign raw materials in special copper alloys.

NATIONAL BRONZE & METALS, INC.

2929 West 12th Street Houston, TX 77008 Phone: 713-869-9600 Fax: 713-869-9124 E-mail: sales@nbmmetals.com Web: www.nbmmetals.com

KENNETH WLODKOWSKI, Specialty Metals & Technical Sales Manager E-mail: kwlodkowski@nbmmetals.com ANDREW MEESE, Field Sales & Technical Manager

E-mail: ameese@nbmmetals.com CARLOS CRUZ-WILSON, Specialty Metals Account Executive

E-mail: ccruz-wilson@nbmmetals.com

NORMAN LAZARUS, Sr. Vice President

E-mail: nml@nbmmetals.com GERARDO GARCIA, Specialty Metals Account Executive E-mail: ggarcia@nbmmetals.com

SERVICES PROVIDED:

National Bronze & Metals, Inc., is the leading USA manufacturer and master distributor of brass, bronze, and copper alloys. Centrally located in Houston, Texas, they have experienced tremendous growth and earned a world-wide reputation for maintaining over one hundred different grades of copper alloys and the largest inventory of its kind in the USA. Their production consists of bars in rounds, hollows, rectangles, squares, hex, and made-to-order shapes for customer specific applications. They develop their product lines with a concerted effort to meet the broad spectrum of needs demanded by their customers throughout North America and abroad.

NGK METALS CORPORATION

917 U.S. Highway 11 Sweetwater, TN 37874 Phone: 586-883-1126 800-523-8268 Fax: 423-351-0390 Web: www.ngkmetals.com

ROBERT J. CUPCHAK, Great Lakes Regional Sales Manager E-mail: rcupchak@ngkmetals.com

SERVICES PROVIDED:

NGK Metals Corporation is a manufacturer of high-performance Class III and Class IV Beryllium Copper Alloys for the RWMA community. NGK Metals offers a wide array of products, including tube, rod, plate, strip, and casting alloys. In addition, NGK Metals offers machining services and a broad line of Safety (non-sparking) Tools.

NINGBO POWERWAY GROUP CO., LTD.

Taiping Bridge, Yunlong Town Yinzhou District Ningbo Zhejiang 315135 P.R. CHINA Phone: 86-574-8300-4660 Fax: 86-574-8834-9958 E-mail: kim@pwalloy.comc

NINGO POWERWAY GROUP CO., LTD. (cont.)

YI SONG, Sales Director E-mail: kim@pwalloy.com FANG WANG, International Sales E-mail: cici@pwalloy.com SUBO SHI, International Sales E-mail: maggie@pwalloy.com MING SHANG, General Manager E-mail: zm@pwalloy.com

SERVICES PROVIDED:

Ningbo Powerway Group Co., Ltd., established in 1987, is a national key high-tech enterprise who specializes in manufacturing, researching and developing copper alloy in wire and bar. They are manufacturers of C18150, C18200, and C15000.

NONFERROUS PRODUCTS, INC.

Division of IBC Advanced Alloys 401 Arvin Road Franklin, IN 46131 Phone: 800-423-5612 Fax: 317-738-2685 E-mail: bremm@ibcadvancedalloys.com Web: www.nonferrousproducts.com

MARK WOLMA, President E-mail: mwolma@ibcadvancedalloys.com BEA REMMETTER-PAAR, Inside Sales Manager E-mail: bremm@ibcadvancedalloys.com RAJEEV JAIN, Vice President, Sales E-mail: rjain@ibcadvancealloys.com STEVE McQUEEN, Distribution Manager E-mail: smcqueen@ibcadvancedalloys.com

SERVICES PROVIDED:

Nonferrous Products, Inc. is a manufacturer (forge hammer, press, ring rolling) and distributor of copper, copper alloy and aluminum bronze plate, sheet, bar, rod, tube, discs and special shapes. Up to 4,000 lbs. capacity. Serve the RWMA, Plastic Mold, Heat Exchanger, Metal melting and other industrial markets. They have been in continuous operation since 1946.

QUALITY BRASS FOUNDRY

1251 Judd Avenue, SW Grand Rapids, MI 49509-1018 Phone: 616-243-1953 Fax: 616-243-2091 Web: www.qualitybrass.com www.romanmfq.com

MIKE CRAMER, Foundry Manager E-mail: mcramer@romanmfg.com NORMAN CONES, Sales E-mail: ncones@romanmfg.com

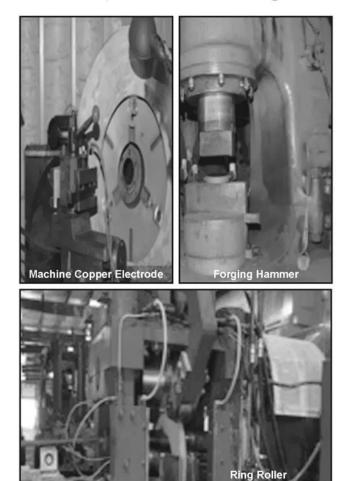
SERVICES PROVIDED:

Quality Brass is a non-ferrous foundry specializing in sand mold castings. They service customers throughout the United States, and represent a diverse customer base, ranging from electrical equipment manufacturers, machine shops, marine hardware, plastic injection molders, plating rack manufacturers, to commercial and residential architectural detail companies.



A SUBSIDIARY OF IBC ADVANCED ALLOYS Copper Alloy Forging: Beryllium Copper, Chrome Copper, Aluminum Bronze

Distribution of plate, blocks, bar, rings and specialty copper alloy for resistance welding applications and plastic mold tooling.



401 Arvin Road, Franklin, IN 46131 Tel: 317-738-2558 / 800-423-5612 Fax: 317-738-2685 www.nonferrousproducts.com www.ibcadvancealloy.com

QUALITY HONEYCOMB, INC.

624 107th Street Arlington, TX 76011 Phone: 817-640-1190 Fax: 817-640-1192 E-mail: malles@qualityhoneycomb.com Web: www.honeycombone.com

MIKE ALLEN,

E-mail: mallen@qualityhoneycomb.com

SERVICES PROVIDED:

Quality Honeycomb, Inc. manufactures Honeycomb Products (Stainless Steel and High Nickel Alloys) by resistance welding. They are manufacturers of metallic Honeycomb. Their FDIL gauges start at .0012" and travel to .020". Cell sizes start at .032" up to .500". This slitting capabilities allow them to stock a wide variety of materials. Quality Honeycomb also does vacuum brazing.

RESISTANCE WELDING MACHINE & ACCESSORY

Northern Location 255 Palladium Drive St. Joseph, MI 49085 Phone: 269-428-4770 800-915-9353 Fax: 269-428-4796 E-mail: sales@resweld.com Web: www.resweld.com

DETLEF GRISARD, National Accounts Manager E-mail: detgrisard@aol.com SHAWN PATZER, Buyer E-mail: spatzer@resweld.com JIM WOOD, Inside Sales E-mail: woody@resweld.com

BRANCHES

Southern Location 1151 Morgan Park Road Pelham, AL 35124 Phone: 205-620-4850 Fax: 205-620-4851 CARY SESSIONS, Outside Sales

E-mail: carysessions@bellsouth.net

SERVICES PROVIDED:

Resistance Welding Machine & Accessory, with operational and warehouse locations in the North (St. Joseph, Michigan) and South (Pelham, Alabama), is a full-service distributor and manufacturer that has been providing quality spot welding supplies and equipment since 1987. However, they are not just another spot welding supply company like so many others, they are resistance welding specialists. Their sales engineers and customer service representatives are the most knowledgeable in our industry, and can offer assistance in choosing the proper spot welding supplies and machinery for the job at the best value. They keep large inventories of the most common spot welding consumables, along with copper bar stock and special metals. If the right spot weld item is not available from their thousands of standard products, they also offer the design and manufacture of special electrodes, tooling, and fixtures to create a custom solution to meet your needs.

RoMAN ENGINEERING SERVICES, INC.

32711 Glendale Livonia, MI 48150-1611 Phone: 248-585-5540 Fax: 248-585-5577 E-mail: info@romaneng.com

RoMAN ENGINEERING SERVICES, INC. (cont.)

Web: www.romaneng.com

KURT HOFMAN, President E-mail: khofman@romaneng.com MIKE D'AGOSTIN, Sales E-mail: mdagostin@romaneng.com DON MAATZ, Weld Lab Manager E-mail: dmaatz@romaneng.com

SERVICES PROVIDED:

RoMan Engineering Services is a full service engineering company specializing in all forms of high production welding processes. Over 15 degreed engineers in the field as consultants and 22,000 square foot of laboratory space dedicated to weld development, prototype welding and research.

SHERBROOKE METALS CORPORATION

 36490 Reading Avenue

 Willoughby, OH 44094

 Phone:
 440-942-3520

 800-922-7437

 Fax:
 440-942-5580

 E-mail:
 tungsten@apk.net

 Web:
 www.sherbrookemetals.com

RANDOLPH A. SPOTH, CEO LAURA KRUS, President

SERVICES PROVIDED:

Sherbrooke Metals Corporation is a primary manufacturer of copper-tungsten and silver-tungsten materials. In addition to making these products, we stock pure Molybdenum and Tungsten in both rod and plate. These materials are cut and ground to customer specifications.

SOUTHERN COPPER & SUPPLY

875 Yeager Parkway Pelham, AL 35124-1846 Phone: 205-664-9440 800-289-2728 Fax: 205-664-1365 Web: www.southerncopper.com AL RIHA, President GARRET HERRINGDON, General Manager E-mail: garret@southerncopper.com BOB WALTA, Sales

E-mail: bobwalta@southerncopper.com FRED BURTON, Sales

E-mail: fredburton@southerncopper.com

SERVICES PROVIDED:

Southern Copper and Supply is a dedicated full-service supplier of resistance welding supplies and nonferrous metals. They can either sell the raw material, or manufacture parts to a customer's specification. Their commitment is always to their customers. They stock a large variety of items, and ship most items the same day.



SOUTHERN COPPER & SUPPLY COMPANY, INC.

The BEST Copper House in the South

Resistance Welding Supplies: • Electrodes (*Tip*)

- · Cables (Air & Water Cooled)
- Special Tooling Packages
 - Shunts (Laminated)
 - Micarta (Phenolic)
- · Special Castings (Machined and Rough)
- Seam Weld Wheels (Machined and Rough)
 - Controls
 - Transformers

R.W.M.A. Alloy Coppers in Rod, Bar and Plate:

Class II Chrome Copper (Alloy C18200)

- Class III Beryllium Copper (Alloy C17510)
- * Class IV Beryllium Copper (Alloy C17200)
- Copper Alloy C11000 (E.T.P. Buss Bar, Hard Drawn)
 - * Copper Alloy C10100 (O.F.H.C.)

Copper Tungsten

- * R.W.M.A. Class 11 & 12 (Copper Tungsten)
 - . R.W.M.A. Class 13 (Tungsten)
 - * R.W.M.A. Class 14 (Molybdenum)
 - · Brass and Bronze

Class II and Class III Plate In Stock and Cut to your Specifications For "Just In Time" Delivery



1-800-289-2728 www.southerncopper.com

Southern Copper & Supply Company, Inc. 875 Yeager Parkway • Pelham, Alabama 35124 800-289-2728 • Fax 205-664-1365 • 205-664-9440 After the *SALE*, it's the *SERVICE* that Counts!

SPOTWELDING CONSULTANTS, INC.

4209 Industrial Street Rowlett, TX 75088 Phone: 972-475-0874 Fax: 972-475-5024 E-mail: info@spotweldingconsultants.com Web: www.spotweldingconsultants.com

JOHN COLLINS, President Email: jcollins@spotweldingconsultants.com RON RHODES, Sales Email: ron@spotweldingconsultants.com DAVID MALDONADO, Sales

Email: david@spotweldingconsultants.com

SERVICES PROVIDED:

SCI is a one stop for all resistance welding related equipment & products. SCI furnishes new and rebuilt resistance welders, custom resistance welders, maintains a large inventory of controls, transformers and electrodes. Supplies RWMA alloy copper rod and bar, copper tungsten, tungsten and Molybdenum, water chillers, pull testers, current monitor/analyzers, force gauges. SCI provides training either in-house or at the customer's facility.



17672 North Laurel Park Drive Suite 400E Livonia, MI 48152 USA Phone: 248-675-6000 Fax: 248-675-6800 E-mail: info@towerautomotive.com Web: www.towerinternational.com

DANIEL GALIHER, Sr. Corporate Welding Engineer E-mail: galiher.daniel@towerautomotive.com

TOWER INTERNATIONAL (cont.)

SERVICES PROVIDED:

Tower International is a global producer of body structures, lower vehicle structures and suspension components and modules. Their focus is to provide for the structural integrity of the vehicle. Tower provides full product development capabilities ranging from design and analysis to prototype and testing as well as manufacturing. Tower International has made successful body structures, lower vehicle structures, suspension components and modules for nearly every major automotive manufacture in the world.

WELD MANAGEMENT SOLUTIONS, INC.

 2001 Wall Street, Unit 316

 Vancouver, BC V5L 5E4

 CANADA

 Phone:
 604-2851-2461

 Fax:
 604-251-2491

 E-mail:
 vatche@weldms.com

 Web:
 www.weldms.com

VATCHE YEREVANIAN, Owner

E-mail: vatche@weldms.com

SERVICES PROVIDED:

Weld Management Solutions, Inc., (WeldMS) specializes in the real time monitoring, analysis, documentation, and management of flash butt welds. WeldMS can retrofit its system to all flash butt welders, and it can also upgrade older mechanical welding controls to a computerized welding control.

NOTES