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Brazil Welding Show – Premiere in Brazil

BRAZIL WELDING SHOW
WITH CORTE & CONFORMAÇÃO
DE METAIS BY
ARANDA EVENTOS

18.–21.10.2011
SÃO PAULO

European and German welding technology is even more in demand in Brazil than ever before. For that reason DVS, Messe Essen and their Brazilian partner Aranda Eventos have brought the Brazil Welding Show into being through their combined efforts, this being the first trade show in Brazil that is entirely dedicated to welding technology. It is celebrating its premiere this year in São Paulo on 18 to 21 October and from now on it will be held once every two years, in each case in parallel with the already established Corte & Conformação de Metais.

At the initiative of DVS there will be a German Pavilion at the Brazil Welding Show at which German companies can showcase their products and services. In addition, DVS is taking part for a full day with lectures and presentations at the associated technical congress.

Visitors to the joint stand of DVS, DVS Media and Messe Essen will find comprehensive information on welding and joining technology, on Germany as a location for business and international trade fair activities regarding Schweissen und Schneiden Essen (Essen Welding Fair) and its overseas affiliates in China, India and Russia. Capable contact persons who are knowledgeable in all matters concerning joining, parting and coating will be there and technical publications from DVS and DVS Media GmbH will be available.

In addition to the German DVS, the Brazil Welding Show is supported by leading international welding associations from the USA and China. CMES – Chinese Mechanical Engineering Society is organising the Chinese Pavilion. AWS – American Welding Society and Essen Trade Shows USA are jointly organizing the U.S. Pavilion. AWS also contributes to the congress.

The short articles below offer a small excerpt from the diverse range showcased at Brazil Welding Show with Corte & Conformação de Metais. They were compiled according to the information from the exhibitors.

High-performance alloys

The company provides products for tough welding applications including high-purity nickel and cobalt strip for weld wire applications, hard facing metal powders, titanium powders and consolidated parts and

Fig. 1

specialty non-sparking, non-magnetic bearings, bushings and couplings (Fig. 1). Ametek also offers high-performance "Pfinodal" alloys, consisting of copper, nickel (15%) and tin (8%) that are made using a proprietary powder metallurgy technology that results in alloys with excellent uniformity, formability and strength. "Pfinodal" alloys are especially a suitable replacement for beryllium copper components. In addition, the company manufactures stainless steel and nickel clad alloys for chemical processing equipment and engineered-shaped components used in oil and gas production and other applications.

Ametek Specialty Metal Products, 1085 Route 519, Eighty Four, PA 15330/USA, Tel. +01 727-255-8400; www.ametekmetals.com; Booth: U.S. Pavilion W29

Drawn arc stud welding guns

The new drawn arc stud welding guns "GD 22" and "GD 25" are designed for welding shear connectors with large diameters (19, 22 and 25 mm). The ample-dimensioned adjustable lift (adjustment range: 0 to 6 mm) ensures in combination with the adjustable hydraulic piston damper optimum welding results in this diameter field. The guns (Fig. 2) are suitable for welding through metal deck. They also feature a piston with linear ball track, an automatic length compensation system for different stud lengths

Fig. 2

and surface conditions as well as a robust, impact resistant housing for the hard work on the construction site. The high-grade outside welding cable (cable cross section 95 mm² resp. 120 mm²) accommodates the high welding currents that are necessary for large stud diameters. Optionally, the guns can be equipped with an integrated travel measuring system. Using this, the lift adjustment is very easy. Moreover, it enables a quality monitoring by measuring and recording of stud travel (lift, piston runtime, immersion depth) for each weld.

AS Schöler + Bolte GmbH, Gewerkenstraße 1, 58456 Witten/Germany, Tel.: +49 (0)2302 97005-39; www.as-schoeler-bolte.com; Booth: German Pavilion G25

Machines and equipment for butt welding

The provider of manufacturing electric as well as cold pressure butt welding machines supplied to the wire and cable industry will feature strand and cable butt welders. The company is known for manufacturing big-size welding machines for medium or high voltage submarine cables. Here the tendency is straight to welds without tubes, using dual upset welders with an automatic flash removal system. The recent develop-

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Fig. 3

ments are machines powered by three-phase transformers, reducing the current consumption and facilitating machine installation in the individual cable factories. It is planned to enlarge the welding ranges for stranded copper up to 1,600 or even 2,000 mm². The focus this year is on small size electric strand butt welders, e.g. types "SE 1" (Fig. 3), "SE 2" and "SE 4". These three units cover a total range for stranded copper from 0,08 mm² up to 35 mm² or stranded aluminium from 1,50 mm² to 50 mm², welds being made using ceramic tubes. A typical application would be in the automotive industry for instance or for electric installations.

August Strecker GmbH & Co. KG, Elektro-Schweissmaschinen-Fabrik, Jahnstrasse 5, 65549 Limburg, Lahn/Germany, Tel. +49 6431/96 10-0; www.strecker-limburg.de; Booth: German Pavilion G24

Optimising brazing and welding processes

Optimised flow properties, improved gap bridging and greater processing speeds are just a few of the challenges that a new copper brazing wire faces. The "bercoweld S2" brazing wire electrode ensures better flow properties and improved bonding with galvanised steel, thus permitting flatter welds in car body construction, e.g. roof join seams (Fig. 4). This means that less or no subsequent work is now required which in turn increases production speed and cuts production costs. The new electrode material is suitable for all conventional brazing processes and may even be used to join highly tensile steels. All "bercoweld" alloys are characterised by good gap bridging, good material bonding and high resistance to corrosion. Wires in diameters ranging from 0.80 to 6.00 mm in various finishes are available, e.g. as rods or on plastic, wood and steel spools and drums.

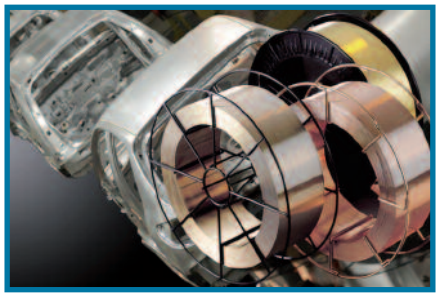

Fig. 4

Berkenhoff GmbH, An der Landstraße, 35745 Herborn/Germany, Tel. +49(0)2772 5002-203; www.bedra.com; Booth: German Pavilion G20

Electron beam (EB) welding machines

The company offers a wide range of electron beam welding machines (Fig. 5). Advantages of EB welding include a high power density with very low overall heat input and therefore minimum distortion. The highlights exhibited are EB welders ranging from 60 kV to 150 kV and EB welders for the turbocharger industry. "Surfi-Sculpt", manufactured exclusively by CVE, is a technique that enables the creation of a wide variety of surface textures through the manipulation of EB. For RPEBW (Reduced Pressure EBW) the company can offer a solution that allows welding of thicker materials and wider range of metals at a coarser vacuum. This means evacuation times and capital costs can be greatly reduced by having small, localised vacuum chambers.The layer-additive process "Near Net Shape" is used to build parts using the EB to melt a pool on the substrate whilst metal wire is fed into the beam to build up the required part.

Fig. 5

Cambridge Vacuum Engineering (CVE), 43 Pembroke Avenue, Denny Industrial Centre, Waterbeach, Cambridge, CB25 9QX/United Kingdom, Tel. +44 (0) 1223 863 481; www.camvaceng.com; Booth: Green Pavilion G29

The next robot generation

Economic robot welding for universal applications is demonstrated by a complete welding system. A six axes welding robot

Fig. 6

"Qirox Classic" (QRC) type "410" (Fig. 6) from Cloos' new robot series features a modular design and guarantees an increased travel speed and, at the same time, excellent positioning accuracy. Its system components comprise a 5 m floor-mounted track and a turn-tilt peripheral unit for optimum workpiece processing. In conjunction with the synergy-controlled 600 A "Qineo Pulse" welding machine, a constant high and reproducible weld seam quality is achieved when welding variable components. The synergy-controlled "Qineo Tronic" inverter welding machine is demonstrated in the

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450 A version through manual welding using the "Rapid Weld" high-capacity process, which is designed for the economic MAG single wire welding of medium or thick section steel components.

Carl Cloos Schweisstechnik GmbH, Industriestrasse, 35708 Haiger/Germany, Tel. +49 2773 85-326; www.cloos.de; Booth: German Pavilion G18

Welding of large pieces

The first important feature of the new version of "Roboside" (Fig. 7) is the large working bench where a 10 mm flat copper plate acts as counter-electrode. This makes it easy to locate either large pieces, like doors, or small ones, like shelves, on the

Fig. 7

bench. The second main feature is the solid "flag type" welding head which can run at high speed along the X and Y axis, releasing a welding force up to 1,800 daN. Standard dimensions of the table are 1,200 mm × 2,400 mm (larger on demand), with the possibility to split it into two or more areas (working/loading-unloading). The "Roboside" is equipped with the latest generation of the "Medium Frequency" package with all related advantages of quality and energy saving. The programming is made simpler, faster and more intuitive by using for instance a joystick module.

Cemsa S.p.A., Viale Piemonte 25, 20093 Cologno Monzese (Milano)/Italy, Tel. +39 02 2544671; www.cemsa.it; Booth: Italian Pavilion W18A

Flux cored alloys

The Taiwanese company, established in 1978, has developed flux cored seamless tubular silver brazing alloys (Fig. 8), which

Fig. 8

can be used in ultra-hard alloy joints, cutting tools, tungsten steel, steel and copper piping etc. They can be applied to several industries such as electric equipment, aerospace material, automobile, optics/spectacles and jewelry. Advantages are reduced flux and labour, no flux loss due to seamless tubular and an improved brazing quality. No cleaning is required. The water treatment costs are reduced, time, labour, material etc. will also be saved.

Chung I Silver Solder Co., LTD., 23, Hsin Ai Road, An-Ping Industrial Park, Tainan 702, Taiwan R.O.C., Tel. +886-6-2910706; www.chung-i.com; Booth: Green Pavilion W38

Mirror finish/Drilling technology

The company provides discs to polish up from rough surfaces up to a mirror finish in only 3 to 4 steps using a variable speed angle grinder. The "Hybrid Disc" combines

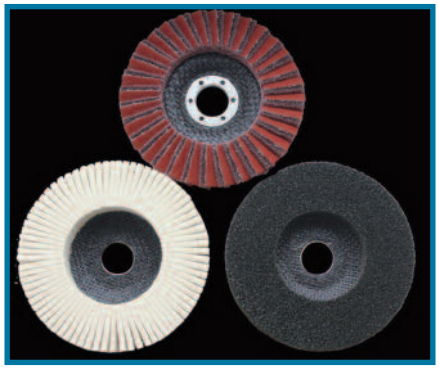

Fig. 9

high quality surface conditioning material and coated abrasives that allow to achieve a pleasing finish after only one step. It can be used on a wide range of substrates such as steel, stainless steel, aluminum and different alloys. The "Unitized Finishing Disc" provides a long life combined with a comfortable handling to achieve final finishes and a well prepared surface prior to polishing (Fig. 9). High concentration of abrasive grain throughout a firm, nonwoven base material, exceptional choice for deburring and blending stainless steel and providing a smooth finish. The "Felt Polishing Flap Disc" of 70% wool felt affixed to a fiberglass backing plate to create a thick polishing pad. The individual flaps are flexible and allow a cool air flow. Felt discs are used with polishing pastes. The company is also the official importer of Fein drilling technology for Brazil, e.g. the "Fein KBH 25" which combines the benefits of powerful hand drills and carbide tipped core drills in one.

Dipl.-Ing. Günter Wendt GmbH, Werner-von-Siemens-Str. 5, 51570 Windeck-Industriegebiet Mauel/Germany, Tel. +49 22 92 / 91 40 29; www.g-wendt.com; Booth: German Pavilion G08

Wendt do Brasil (Official Importer of Fein for Brazil), Av Vitória Rossi Martini 525, American Park Distrito Industrial, Indaiatuba SP/Brazil 13347-650, Tel. +55 19 3935-6458; www.wendt.com.br

Flat parts – better welding

Flatness errors, such as warpage and residual stresses, can occur with sheet metal parts processed using mechanical or thermal cutting methods. They can have a negative effect on the whole sheet metal processing. The precision roller leveler "FlatMaster" (Fig. 10) deforms sheet metal parts with a series of alternate bends. In the end, parts are absolutely flat and stress-free. This is especially important for industries with tight tolerances, e.g. construction and agricultural machinery, railway, medical instruments, automotive, aerospace and defense. The "FlatMaster"-Series provides best leveling

Fig. 10

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results for sheet metal parts up to 60 mm thick and 3,000 mm wide. Depending on the material specifications, flatness results up to 0.5 mm/m or better are feasible.

Emme2, Av. Dr. Jesuíno Marcondes Machado, 911, Nova Campinas, Campinas SP-CEP/Brazil 13092-108, Tel. +55 19 3254 1892; Booth: Green Pavilion 46

Arku Maschinenbau GmbH, Siemensstraße 11, 76532 Baden-Baden/Germany, Tel. +49 (0)7221 5009-35; www.arku.de

Virtual prototyping

The „Welding Simulation Suite“ is a single virtual welding manufacturing software for all needs. Virtual welding engineering begins with a weld plan that allows smart communication and coordination concerning the details of the virtual welding manufacturing process. With “CAD and FEM Modelling” a meshing tool is integrated in the Suite’s platform. A material data manager helps to view, manipulate and generate properties with great flexibility. All the physics of material is incorporated in the material database. A state-of-the-art graphic user interface allows users to set up a virtual welding fabrication process in the least possible time. For fast distortion engineering, the “Virtual Performance Solution solver“ is used – an innovative tool offering unmatched DMP performance for large welded assemblies. For simulations involving complex material physics, the “Sysweld” solver is used. Thanks to advanced simulation engineering methods (Fig. 11), complex problems such as large pressure vessel fabrication can be solved in a reasonable time frame, without neglecting any material physics or fabrication details.

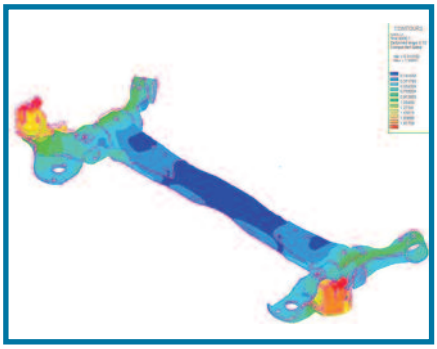

Fig. 11

Esi Group, Av. Pedroso de Morais, 1619 cj. 312, São Paulo State SP/Brazil 05419-001, Tel. +55 (11) 3031-6221; www.esi-group.com; Booth White Pavilion 248

Welding system for harsh conditions

With the digitised “TransSteel 3500” and ”5000” (Fig. 12) power sources the company provides a comprehensive solution for steel welding. The central control unit ensures a reliable process and reproducible welding results. The approach to wire feeding in particular leads to further efficiencies in the steel transfer technology system. The lightweight, robust module comprising hosepack, torch and display ensures that the filler wire advances reliably. The ’comfort wire’ function automatically takes care of wire threading. The user can easily take off the portable wire-feed unit and bring it to the point where it is to be deployed in difficult to access welding locations. The “FSC” (Fronius System Connector) enables with just one central connector for all media the user no longer needs any external control plugs. A special ignition control feature prevents drops from forming at start-up. In addition to the standard arc, two other types of arc can be selected: “steel root“ has a fine, soft arc for applications including root runs or the filling of wide gaps, whilst “steel dynamic“ with its hard, dynamic, stable spray arc is suitable for components requiring an especially strong joint.

Fig. 12

Fronius Do Brasil LTDA, Av. Dr. Ulysses Guimarães, 3389, Galpão 4, Vila Nogueira, Diadema/Brazil 09990-080, Tel: +55 (11) 3563-3803; www.fronius.com.br; Booth: Green Pavilion W15

Welding and cutting automation

The company will present the “400” series trackless welding carriage with integrated wire feeder (“400 Moggy”) which is ideal for shipbuilding and beam welding applications. The “Moggy” is an electrically powered self-propelled welding and cutting automation carriage that travels in the forward and reverse directions at precisely controlled speeds. The weld quality and accuracy is insured through both horizontal and vertical adjustments as well as a fully adjustable gun/torch holder assembly giving the carriage versatility to accommodate various welding applications (Fig. 13). The “KAT” oscillator system is a welding carriage and oscillator head combination which is designed for welding in all positions. With precise remote control over the weld pattern and parameters, the “KAT” oscillator combination is perfect for automating a variety of welding applications. Its carriage can also be equipped with an automated gouging system which increases the amount of metal removed.

Fig. 13

Gullco International Limited, 1175 Nicholson Road, Newmarket, Ontario L3Y 9C3/Canada; Tel. +01 905-953-4140; www.gullco.com; Booth: Green Pavilion W55A

Weldspray International, P.O. Box 16142, São Paulo SP/Brazil 03402-970, Tel. +55 11-9306-1900; www.weldspray.com.br

Modular robot system

The main features of the new robot are very slim arms, less total weight and more rigidity. Three different models are available and thereby significantly expand the wor-

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king zones with a swivel radius up to 1,900 mm. Furthermore the wire drive for single or tandem processes is integrated in the main rotation axis and runs completely protected into the periphery of the robot. Only the torch hose runs externally. Easy access to it allows rapid replacement during service and makes automated torch exchange possible. The inhouse-developed "iCAM" laser camera system for online seam tracking will be mounted on the wrist axis. The functions and parameters of all igm sensors are entered, displayed and optimised via the programming console "K5". No additional programming equipment is required. The system consists of a floor track system "RTS", workpiece manipulator "RP" with "RFP" and one robot from the "RTi 400" series (Fig. 14) including an "iCAM" laser camera.

Fig. 14

igm Robotersysteme AG, Strasse 2a, Objekt M8, Industriezentrum Niederösterreich Süd, 2355 Wiener Neudorf/Austria, Tel. +43(0)2236-6706-143; www.igm-group.com; Booth: Green Pavilion W18

Height control systems for plasma and oxy-fuel cutting

IHT Automation will present its two new product lines of height control systems for plasma and oxy-fuel cutting machines. With the "C 1000" and "M 4000" series, precise and stable height control of the cutting torch, which is an important factor for clean and efficient cutting, is greatly improved. A highlight will be the "M 4000 ISC" (Fig. 15), an integrated sensor system for oxy-fuel cutting machines. The integrated sensor technology eliminates the use of a ring electrode to measure the cutting distance and thus the need to remove and adjust the electrode when replacing the nozzle tip. Instead, the sensor directly measures the precise cutting distance from the nozzle tip. The system does not have any external cabling and is capable of detecting slag so that collision between the torch and the slag is avoided.

Fig. 15

IHT Automation GmbH & Co. KG, Bahnhofstrasse 63, 76532 Baden Baden/Germany, Tel. +49 (0)7221 39419-0; www.iht-automation.com; Booth: German Pavilion G23

Brazilian welding portal

The welding portal offers processes and personnel certification and training. It publishes technological information for free about welding, materials, cutting and NDT, with experts sections and a Portuguese welding encyclopedia. The company has a ten-year experience in certifying professionals, including the "Level 2 Inspectors". The entire certification routine is performed, with process development, trials and preparing all the technical paperwork. More than 200 clients in Brazil alone use the consultant service with a general staff including technologists, engineers and technicians. The company also offers individual training courses.

Infosolda, Rua Nair Correia Buarque, 39 – Parque Continental, São Paulo, SP/Brazil 05324-040, Tel. + 55 (11) 3763-6270; www.infosolda.com.br; Booth: Green Pavilion W75

Filler metals

The specialist for filler metals from aluminium, copper, stainless steel and nickel produces MIG welding wire and TIG welding rods. A complete program including suitable accessories and measuring instruments completes the program. The welding wires (Fig. 16) are used by German car manufacturers and in other fields like railroad cars, shipbuilding, trucks and defense. A high quality standard is essential for all robotic welding applications. The residual analyser for MIG welding wires has become the de facto standard for the industry. It is capable of measuring the surface residuals on filler wires of all alloys. The "Rolliner" is a liner hose to transport welding wires from bulk packs to the wire-feeder.

Fig. 16

MIG Weld GmbH International, Wattstr. 2, 94405 Landau (Isar)/Germany, Tel.: +49(0)9951/601230; www.migweld.de; Booth: German Pavilion G14

Welding head for tube to tube sheet welding

The welding head "TS 8-75" (Fig. 17) for tube to tube sheet welding was developed concerning the requirements for being more compact, ergonomic, productive, straightforward, fully automatic and more precise. It impresses with its low weight and compact shape when applied to the workpiece and its ergonomic double grip with

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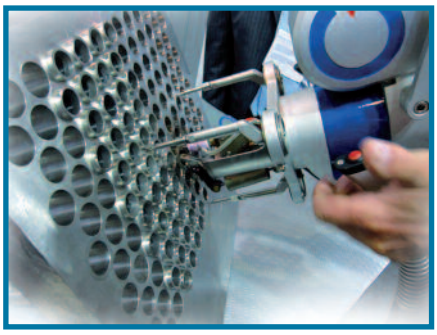

Fig. 17

integrated control buttons for clamping and welding. The integrated pneumatically operated clamping/centring system makes it possible to work with several welding heads simultaneously. The wire feed and support legs are easy to adjust and the standard arc height adjustment (AVC) assists the fully automatic joining process. The integrated simultaneously rotating wire feed ensures the feed velocity is constant and the impact position for the filler wire is also constant.

Polysoude S.A.S., 2, rue Beaupère, 44300 Nantes/France, Tel. +33 (0) 2 40 68 11 74; www.polysoude.com; Booth: Green Pavilion W18

Distributor for welding products

The company offers welding consumables including special products for repair and hardfacing welding, gas cutting and welding equipment and accessories as well as electric welding and plasma cutting equipment. Also available are abrasive and polishing consumables and equipment, industrial chemistry as well as personal protective equipment (PPE). Furthermore ventilation equipment and systems, soldering and brazing materials are distributed. The products offered are of main international brands or Rywal's private brands "Most" or "Gold" (Fig. 18).

Fig. 18

Rywal-RHC Sp. z o.o. w Warszawie, ul. Chełmzynska 180, 04-464 Warszawa/Poland, Tel. +48 56 66 93 820; www.rywal.com.pl; Booth: Green Pavilion G35

Brazing alloys

The company is a producer of brazing alloys (Fig. 19) with different components such as silver, copper, zinc and cadmium. They are available in strip, wire, powder, paste and preform as well as clad tri-metal products and are all according to RoHS and Reach Directives. These alloys are free-flowing, versatile and high-strength filler metals

Fig. 19

with the lowest melting point of all silver based brazing materials. Cadmium-free brazing alloys are low-temperature, free-flowing filler metals for joining similar and dissimilar metals. Lead-free soldering alloys are gaining ever increasing popularity, due to regulatory requirements and new technical production accordingly with ecological environment protection standards. "Fosop" alloys are copper-phosphor based filler metals that are self-fluxing on copper by virtue of their phosphorous content. They vary in silver content from 2 to 18% and the percentage of silver and phosphorous does change the melt and flow characteristics of the filler metal.

Sopormetal Sociedade Portuguesa de Metais, LDA, Zona Industrial, P.O. Box 71, 3850-194 Albergaria-a-Velha/Portugal, Tel. +351 234 520 050; www.sopormetal.com; Booth: Green Pavilion G30

Wire drive unit

A new 4-roll wire drive unit with 37 mm diameter feed rolls and one pressure unit, built in fibreglass reinforced polyamide, is available. The motor is positioned horizontally and has a power of 50 W or 75 W on choice, available in 24 V or 42 V. The gearbox is integrated in the unit. The size is compact, the unit can be mounted in multiple positions and is easy to fix in the welding machine. This wire drive unit is able to feed

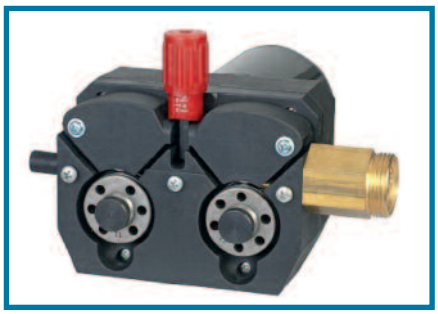

Fig. 20

steel, aluminium or tubular wire with a diameter from 0.6 mm to 3.2 mm and with a maximal wire speed of 24 m/min. The unit "SF 16537" (Fig. 20) is also available in geared version for aluminium and tubular wire feeding and with adapters for standard feed rolls. The motor can be equipped optionally with a 150 cpr optical encoder.

Swissfeed, Bremgartenstrasse 13, 5624 Bünzen/Switzerland, Tel: +41 56 619 73 00; www.swissfeed.com; Booth: Green Pavilion G26

Solutions for resistance welding

The company provides solutions for resistance welding, from the development of processes to the installation of the equipment. It offers products for resistance wel-

Fig. 21

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ding and also works on the improvement of welding processes with the objective to increase the productivity and to reduce costs in the end product. The portfolio covers electrode caps (Fig. 21), holder electrodes, arms guns, shunts, protection cover, arm isolation tape, copper bars and training in resistance welding.

Tecnowelding Comércio Ltda, Carlos de Laet, Nº 2037, Hauer, Curitiba, PR/Brazil 81610-050, Tel. +55-41-3334 3817; www.tecnowelding.ind.br; Booth: Green Pavilion W76

Thin sheets – big profits

In fusion cutting of stainless steel up to 4 mm thick, the "TruLaser 5030" fibre (Fig. 22) achieves feed rates up to three times faster than the CO_2 version with a reduced table time up to 45%. The new machine cuts not only construction steel, stainless steel and aluminum but also non-ferrous metals such as copper and brass. The core of the "TruLaser 5030" is a fibre-guided "TruDisk" solid state laser with an output rating of 3 kw. With the 2D laser cutting system, users can process sheets measuring 3,000 mm × 1,500 mm. To keep processing time as low as possible and increase the flow-rate of parts, the "TruLaser 5030" fibre has features that have already proven themselves in the CO_2 laser version: a one-cutting head strategy, automatic tip changer and all cutting data for a smooth cutting start. In principle, the "TruLaser 5030" can cut the same sheet thicknesses as the equally performing CO_2 laser version. The differences lie in the quality of the components and the productivity for different sheet thicknesses. The 1.03 µm wavelength of the solid state laser makes it possible to cut thin sheet, using fusion cutting and nitrogen quickly and at the same time at high part quality.

Fig. 22

Trumpf Brasil, Av. Juruá, 150 Alphaville, Barueri SP/Brazil 06455-010, Tel. +55 11 4133-3560; www.br.trumpf.com; Booth: White Pavilion 14

Trumpf GmbH + Co. KG, Johann-Maus-Straße 2, 71254 Ditzingen/Germany, Tel. +49 7156 303-31559; www.trumpf.com

Welding tractor

The company is specialised in welding mechanisation and automation of metal surfaces. It operates in the field of the welding processes MIG/MAG, TIG and submerged arc. The welding tractor "Oscimatic" (Fig. 23) does not require magnetic mounting rail. It simulates all human movements necessary for welding through the oscillator mechanism. The system displays the parameters on the LCD screen and executes correction of the parameters of the torch positioning in real time.

Fig. 23

Uniarc Soldas automáticas, Rua Bartolomeu Bueno de Gusmão, 130 Recreio Estoril, Atibaia SP/Brasil 12944-050, Tel. +55-11-4412 4646; www.uniarc.com.br; Booth: Green Pavilion 164

Marking the workpiece

VPL Chemicals Pvt Ltd is engaged in manufacturing and distributing various industrial products, e.g. "Tempindic" (temperature crayons, Fig. 24), "Thermolabels" (temperature indicator labels, low chloride paint markers) and "Tempchalk" for hot surface marking, infrared thermometers etc. A simple, cost effective and accurate surface temperature measurement can be made using "Tempindic" crayons during pre-heating, inter-pass and post welding operations. The crayon is supplied in a patented aluminium holder which has an adjustable cap to hold the crayon tightly during the operation. The threads provided on the cap facilitate a greater grip while using "Tempindic" crayon. The length of the crayon is 125 mm.

Fig. 24

VPL Chemicals Pvt Ltd, No 27, Behind The Club, Nayandahalli, Mysore Road, Bangalore/India 560039, Tel. +91-80-28605670; www.vplchemicals.com; Booth: Green Pavilion W52

Arc welding equipment

The manufacturer of manual arc welding accessories produces over 500 models to export to over 65 countries and OEM suppliers to the world's leading welding companies. It is ISO 9001:2008 certified and is equipped with a modern laboratory and in-house CAD facilities. Its present product

Fig. 25

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range includes electrode holders, MIG torches, cable connectors, earth clamps, electrode ovens and much more (Fig. 25).

Welspring Universal, B-19, Mayapuri Phase 1, New Delhi 110064/India, Tel. + 91-11- 2811 5336/4318 8300; www.welspring.com; Booth: Green Pavilion W41

Equipment for automatic welding

Wuxi Welcut Technology Co., Ltd. is a high-tech joint stock enterprise with a modern enterprise management system in developing, manufacturing and marketing all kinds of special automatic welding equipment and cutting machine and providing related services. The company is capable of timely providing an optimum solution

Fig. 26

scheme of welding and cutting regarding production layout and process analysis for the users according to their specific requirements. The company provides welding rotators, welding manipulators, welding positioners, H-beam automatic welding line, plate edge milling machine and CNC cutting machine (Fig. 26). Also available are different kinds of special turning rolls according to the customer's requirement.

Wuxi Welcut Technology Co., Ltd., No.5 Xinke Road, Xituo District, Hudai Industrial Park, Wuxi City, Jiangsu Province/China 214161, Tel. +86-510-85585052; www.welcut.com; Booth: China Pavilion CW08