

# SOLUTIONS

CUSTOMER INFORMATION

Newsletter - Issue 1 - 2010



**Provac Engineering :**  
experts in vacuum fusion



**Always stronger**  
in Eastern Europe



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## Impressum

Editor >> Dr. Gary Heath

E-mail >> gheath@castolin.com

Contributors for this edition >> Edith Plassnig, Alain Tremblay, Dr. Gary Heath, Patricia Nigg, Tony Nogaredes, Kathrin Gasslmaier

Graphist >> Gilles Wenger | Pi-Com

For more information or contact addresses, please visit our websites [www.castolin.com](http://www.castolin.com) or [www.eutectic.com](http://www.eutectic.com)

Part of the Messer World 

# Editorial

Castolin Eutectic brings the spirit of the iPod to repair and maintenance. Innovation, ease of use and a great service

Dear Reader,

As many countries are now officially coming out of the recession and the most global stock markets have shown substantial growth in the last 7 months, the worst looks to be behind us. But how best to go forward with growth? We at Castolin Eutectic suggest that we should look at the businesses that grew significantly in spite of the recession, like Apple. Key elements for Steve Jobs, Apple's CEO, were **innovation, ease of use and great service**. This approach is helping Castolin Eutectic help its customers back on the growth track.

In this edition, the importance of technical know-how and the effective sharing of this information is underlined. We have used the advances of the iPod software and interface to make sharing of our global solutions in our **TeroLink®** database easier and quicker. We also highlight the **Arc Wire Spray** technology, which delivers excellent quality thermal spray coatings in a simple and reliable way. The innovation has been in the technical improvements of the equipment and the cored wire consumables which allows this established technology to offer quick, easy to use and low cost solutions to a range of wear and corrosion problems.

Our continuous investments in new, innovative technology are reflected in the purchase of the company **Provac** last year, who are experts in vacuum fusion technology. The unique and patented dense coatings are finding applications in the **Glass, Oil, Power and transport industries**, dramatically improving wear performance and operational performance.



Finally, Castolin Eutectic continues to also invest in **training and marketing** in these difficult times, when most of our competitors are cutting significantly these functions.

This allows us to maintain our excellence in customer support with up to the minute applications from TeroLink®, new technology and CastoLab® services. Our presence in Eastern Europe continues to grow and strengthen, helped by our CastoLab® expertise, particularly in specialised areas such as Vertical Roller Mills. Innovation, ease of use and great service from our sales staff and local CastoLab® is how we are moving out of the recession, so take **the time to talk to us** and benefit from our investments.

Good reading



Gary Heath  
VP Marketing & Product Management





# Exchanging Know-how Worldwide with TeroLink®

» Innovation

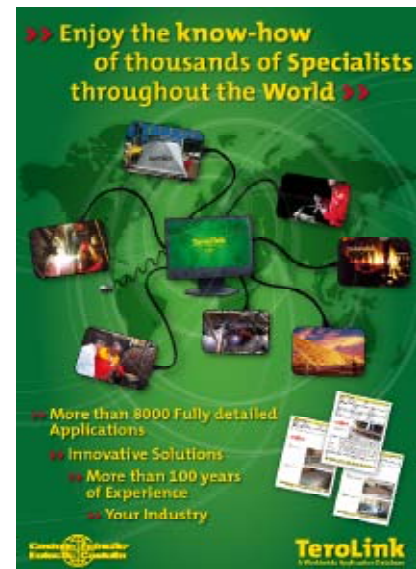
After more than a century of finding solutions to industrial wear and maintenance problems throughout the world, Castolin Eutectic has unrivalled experience to draw upon. Our reputation in handling new challenges quickly and efficiently has been enhanced by the development of our unique and comprehensive computer database of solutions, TeroLink®. The technical details of Castolin Eutectic's world-wide

casebook are available in most industrial locations where Castolin Eutectic is present, with more than 8,000 fully documented for immediate call-up in our multi-lingual TeroLink® system. The case studies include photographs, technical data, detailed descriptions of the adopted solutions and how they were applied, plus considered alternatives and cost-saving analysis where appropriate.

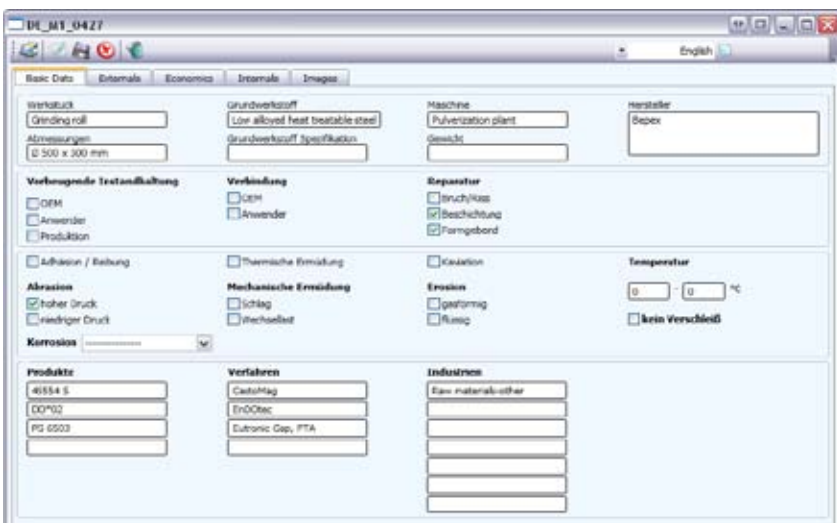
This dynamic software is based on a modern software architecture with latest Technologies: WPF (Windows Presentation Foundation); XAML (Extensible Application Markup Language), AES symmetric encryption algorithm with 256-bit keys for protecting the Data and modern CardFlow 3D View (see picture below)... It has also a modern and intuitive user Interface available in more than 15 languages.



Homepage of the new database



TeroLink® concept of exchanging know-how worldwide



Detailed description of an application

## Key Information

- More than 8,000 fully detailed applications
- Specific applications for your industry
- Available in 15 languages
- Online software enabling a fast exchange of information
- World cup organized every year (with 23 countries participating) in order to motivate the technicians and engineers to continue to develop new and innovative applications.

# EuTronic® Arc Spray technology : strongest coatings with the best productivity

>> Technology

With a long experience in the field, Castolin Eutectic is recognized worldwide for its successful Arc Spray wires for specific industries such as: Power, Cement, Oil&Gas, Waste&Recycling, etc. Thanks to a great collaboration with technical experts and coating specialists, we have also developed the best Arc spraying equipment. The result of such a combination is obviously an outstanding coating quality and productivity!

Today the vast majority of wires used for arc wire spraying are solid, extruded wires of standard compositions of zinc and aluminum. By shifting to the more advanced « cored wire », innovation in surface protection is easier to achieve. The flexibility in choice of metal tube and powder compositions, have enabled us to produce wire compositions in our new high-tech production facility that are impossible to produce as solid wires. The surface quality of the wire is also optimized for continuous arc wire feeding. Usually, the superior quality of the wires outperforms competition wires on this standard arc wire spray equipment. In order to extract the best potential of the wires in terms of coating quality and spraying systems, Castolin Eutectic decided to design and bring to the market a dedicated Arc Wire Spray equipment in 2007 which would reliably reproduce the excellent quality of the



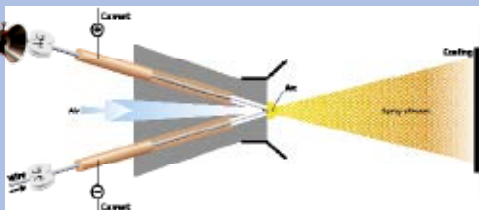
*EAS complete solution*

coatings afforded by the wires. Once again the specialist wires work perfectly with all existing equipment in the market but in

order to offer a complete package and to guarantee an excellent coating we recommend the EuTronic® Arc Spray 4 system.

## What is the EuTronic® Arc process ?

With the highest productivity, this Arc Spray process uses a pair of wires which are melted by an electric arc. The arc has a temperature of 5,000 - 6,000°C that melts the wires continuously. Compressed gas - most often air - is used to atomise the molten wire tips and propel the droplets towards the substrate at velocities exceeding 100 meters per second. This combination of high temperature and high particle velocities gives arc sprayed coatings very good coating properties with high bond strengths and low porosity.





# EuTronic® Arc Spray process : for a multitude of applications

The EuTronic® Arc Spray 4 is robust, reliable and easy to use. The Arc Gun and the drive system are coupled to a 350 amp, switched voltage power source. This power source features sealed electronics for excellent reliability in the harshest spray environments. The wire feeder unit is neatly mounted on the power source, leaving it free to swivel and follow the operator whilst spraying.

There is no motor in the gun. Instead, the Gun 4 uses a patented 'Synchrodrive' system, where a single, sealed motor with a flexible drive arrangement, powers a reliable, positive drive push / pull up to a distance of 20 m.



*Protected boiler tubes against hot gas erosion and corrosion in thermal power industries*

>> Applications



*Parts in babbitt being sprayed*



*Huge roller being sprayed, efficient solution to protect large areas*



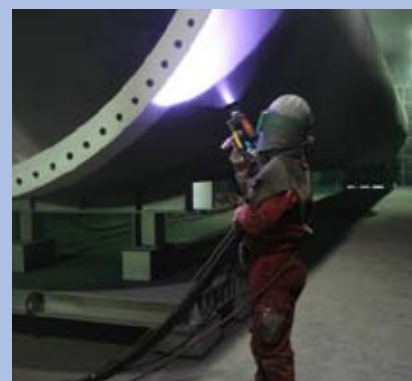
*Fuller plate for the cement industry protected against abrasion*



*Protecting a ventilator against erosive wear*



*Furnace duct for the steel industry protected against heat and erosion*



*Windmill tower protection*

# Provac Engineering:

## Experts in vacuum fusion technology

>> Technology

Provac Engineering is based in Shropshire, UK and has been in the business of wearfacing for more than 25 years. Its original operations were focused on a vacuum fusion process for wear protection of valves and pumps. Thermally sprayed nickel and cobalt based alloys are fused in a vacuum furnace in order to produce metallurgically bonded dense coatings with very low porosity. Coating quality is unmatched by any other spraying process. Vacuum fusion is selected for applications that require an ultimate quality and performance. Alloys can be either flame sprayed or electric arc sprayed before fusion to provide a large variety of coatings.

### Benefits

Coating thickness from 0.5 mm to greater than 5 mm can be applied on a wide range of component shapes and a close control of spray parameters avoids component distortion. Alloys having hardnesses from 35 to 65 HRc can be applied and provide abrasion, oxidation and corrosion protection in operating temperatures up to 550°C.



Workshop equipped with 2 vacuum furnaces

### Applications

Provac supplies coatings to many different industrial sectors:

- **Glass** container manufacturing, moulds.
- **Excavation** Slurry pump internals, rock drilling equipment.
- **Oil and Gas** Valve gates and seats, valve plugs, downhole pump internals, stab connector pins, operating pistons.
- **Power generation** Chain sprockets, needle valves and seats.
- **Process** Valve balls and seats, valve plugs, butterfly valve discs and seats...



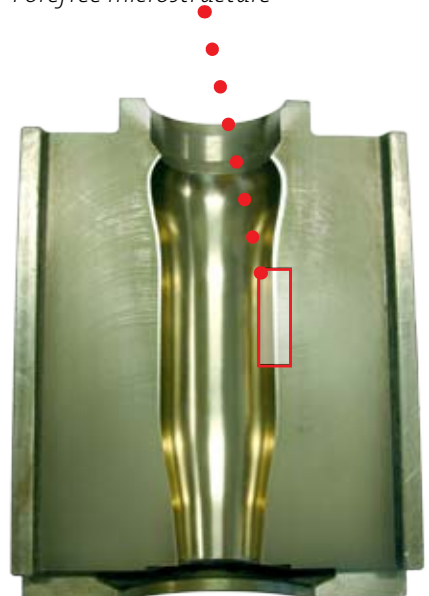
Porefree microstructure



**Power industry:** Parts protected with vacuum fusing



**Oil&Gas industry:** Parts protected with vacuum fusing



Vacuum fused glass mould coating



# Castolin in Eastern Europe

## - a region presents itself

Austria - and especially Vienna - has been the gateway to Eastern Europe for many companies within recent decades. Castolin Austria was founded in 1958 and has already accepted in the seventies, the responsibility for the markets in Eastern European neighbouring countries.

According to the Castolin philosophy, to offer customers the best support and advice on-site, a network of Castolin employees and partners has been built up. Every year these partners and staff are invited to intensive technical and commercial specialty training in our training center in Vienna. Here, a lively exchange of experiences takes place between the Country Managers. Based on our customer

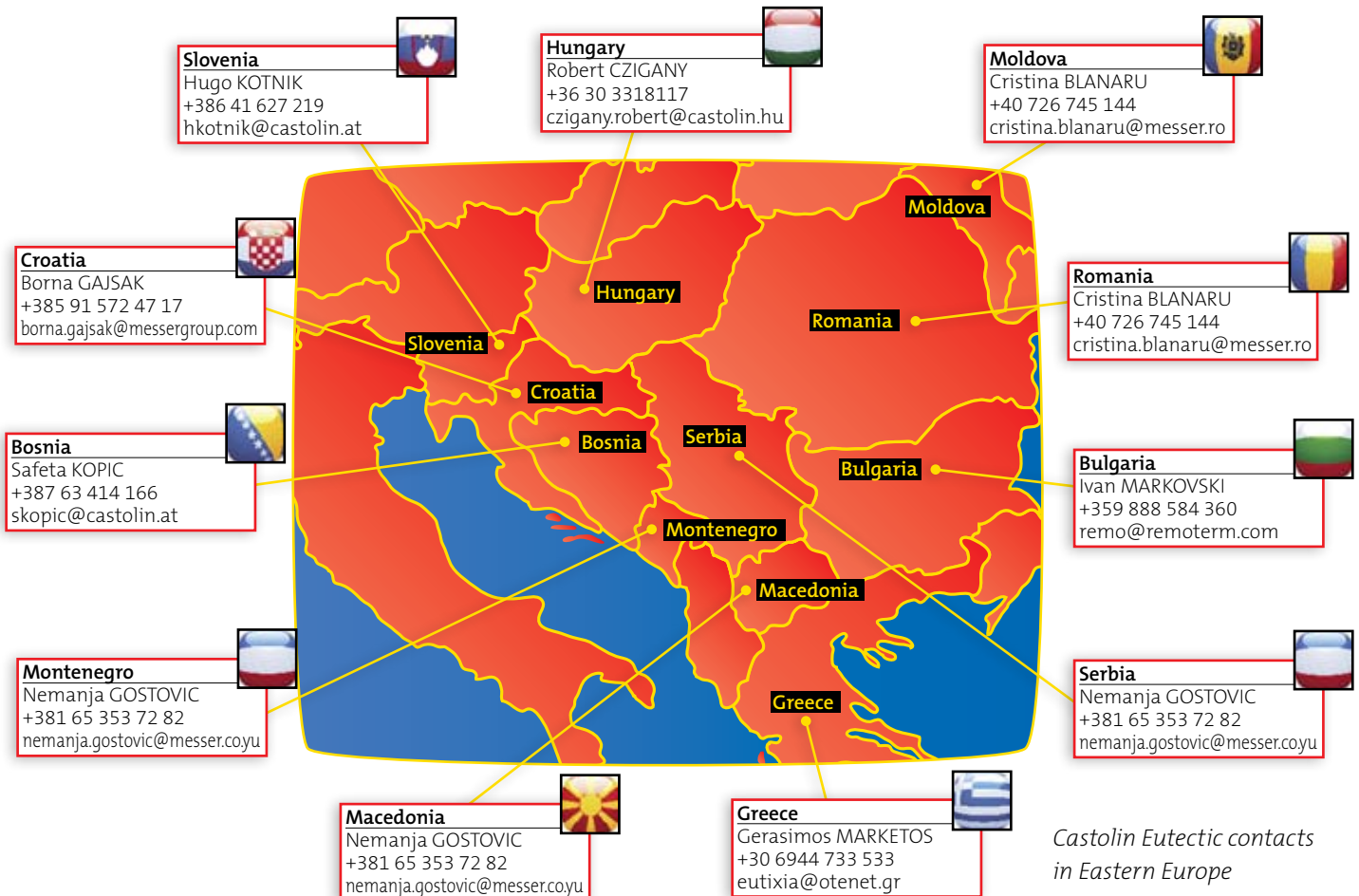


Castolin offices in Bulgaria

needs, CastoLab® Services Workshops have already been set up successfully in four countries in order to perform contract work. The focus in the coming months will especially be put on the de-

velopment of certain applications such as the coating of Vertical Roller Mills. Generally, the objective is an intensification of the cooperation with the cement, steel and paper industries.

>> International



Castolin Eutectic contacts in Eastern Europe

# A new design for our growing Distribution segment



In order to respond to the specific requirements of our growing Distribution segment, Castolin Eutectic decided to develop a new design for all packaging, flyers and bro-

chures. We made it more attractive by mixing a modern logo with our traditional yellow and red colours! The association of our name, the flame and slogan “**Specialist in quality joining**” expresses our commitment to stay a major actor and to be your partner!

It is important for our distributors and their customers to have an attractive packaging that helps for a quick identification of the most suitable products and special promotions with multilingual information!

**Behind this new image, be sure you will meet all the experience and know how of our team to grow all together.**



## News on our website - Did you see this ?

### Industry Section updated on our website

Almost a century at the forefront of protective materials technology has positioned Castolin Eutectic as the world's premier industrial partner. Our comprehensive know-how is unrivalled and our industry partnerships continue to thrive.

By conducting a site survey at your plant, we can show you the potential cost-savings to be made! Have a look at our Industrial Solutions section on [www.castolin.com](http://www.castolin.com) and discover the breadth of our activities.



## New CastoLab® Services Workshop

To ensure our development and to improve our customer service, we have set up a cutting and processing workshop for our CDP® plates (wear plates) in France near Paris.

This workshop, located at Verrieresle-Buisson, occupies an area of 750 m<sup>2</sup>. We have acquired several entirely new high-capacity machines and we have manufactured our first parts.

## NEW CastoMIG® Equipment

Discover our complete CastoMIG® equipment range for workshops and industrial applications! You will find all the information related to this product such as the bro-

chure, the flyers, the consumables and a video - come and have a look! To find out more about this, check our news section on our website [www.castolin.com](http://www.castolin.com)

