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Maccaferri Industrial Group



WireUp

1st Edition - 01/07 en



Hatching innovation

Contents

Feathering your nest.....	4
Customer profiles:	
Belden®.....	6
Zhenxiang Copper Group.....	10
JSC Mezhgosmetiz-Mtsensk.....	16
Product profiles:	
Bringing innovation to life at Sampsistemi	20
THHN - PVC/nylon extrusion systems	24
News:	
Welcome to Interwire.....	27
Welcome to Wire Russia.....	28
The SAMP Award.....	33
Marketing news.....	34
Regional feature:	
A look at history	30



Dear Reader,

We have chosen a nest, an image synonymous with springtime, as the cover page of this first 2007 edition of WireUp. Since the beginning of time nests have in fact been emblematic of a protected environment, a safe and secure place where something new comes to life. The nest on our cover page thus represents the security we offer you at Sampsistemi to keep your investments safe! Whether yours is a small local company or large international group, we provide you with the right technology, supplying both single machine solutions or complete wire and cable manufacturing lines. All companies face their own unique challenges and need to safeguard their investments. At Sampsistemi we guarantee your security with unique solutions, just as hatchlings are protected in a nest. Of course not all eggs in a safe nest will be golden, but added value is a certainty with Sampsistemi. Product and design innovation hatches and grows at Sampsistemi to ensure you added value. We invest constantly in research and development, we listen to market demand and we take up the challenges with which we are posed. An ancient Arabian fable tells of a poor wood cutter who takes home a beautiful bird. His children lovingly

adopt and care for the bird which, once safe and secure, begins to lay golden eggs. The family is therefore saved from their plight of poverty. And, just like in the story, we firmly believe that to provide you with those “golden” solutions, it is fundamental to take on board the information we receive from you. The exchange of care and attention enables the bird to help those that saved it; likewise exchanging ideas and information enables us to develop the innovative solutions you need to make your business profitable and successful. But how does innovation come into being and develop? Whether the egg or the chicken came first, we will never know, but what is fundamental to successful business is an understanding of the environment in which a company operates. The ability to listen, to understand an increasingly demanding marketplace and the feedback you give us are all absolutely essential to the development of new technology. Let us lay your golden eggs, helping innovation hatch and grow into winning solutions for you!

SAMP - Division Sampsistemi
Corporate Marketing



SAMPSISTEMI

Feathering your nest

To talk of marketplace for a company like Sampsistemi is to talk of the world at large.

Our products in fact reach customers across 5 continents, direct from our headquarters, through Sampsistemi subsidiaries or exclusive sales agents and are destined for metallurgic applications or use in the cable insulating and jacketing sectors. And so it is that we are both observers and protagonists of important global phenomena.

More than ten years ago, we embarked upon a project at Sampsistemi to synergically diversify our product range; we in fact complimented our metallurgic range of equipment by addressing the subsequent down stream manufacturing phases through the launch of our cable insulating and sheathing equipment programme. Customers who had been using Sampsistemi copper and aluminium drawing machines and bunching equipment for stranding bare wires and laying up insulated conductors for years were thus able to access a more comprehensive range of products, engineered by a company that intimately knows and understands the problems associated with the preliminary phases of cable manufacturing.

The quality of Sampsistemi products, the technological ability of our product managers and our company investment policy, which ensures that extrusion lines are permanently installed in our facilities for customer test purposes, have enabled us to reach out not only to traditional bare wire fabricators but also to important new customers all around

the world, whether they be independent local manufacturers or subsidiaries of the largest global groups.

Along with the development of the new economy came a great deal of general investment in the telecom cable sector and Sampsistemi was there and ready to supply state-of-the-art lines and systems for producing datacom cables that integrate intermediate wire drawing machines, equipped with wire pre-heaters and skin passes as well as skin-foam-skin, polyethylene and fluoropolymer physical foaming extruders (an absolute must for high speed signal transmission).

As investments in the telecom sector eventually slowed, however, strong economic growth and investment in infrastructure took off in Eastern Europe and the Middle East, where there was a surge in demand for energy cables for area distribution – meaning the supply of aluminium and aluminium alloy rod breakdown lines as well as XLPE insulation lines for aerial and distribution cables – and for the construction of housing and industry – meaning copper rod breakdown machines; multi-wire drawing lines; bunching machines; high speed insulation lines for building wires and low voltage energy cables; sheathing lines for low, medium and high voltage cables and naturally our entire line of welding wire manufacturing equipment.

To meet this demand and supply customers with equipment that guaranteed fast payback rates, we developed, and indeed continue to develop, new and innovative solutions, which were then

pioneered with pilot customers, a practice which has indeed become a market standard today. At Sampsistemi we do not simply react to market demand; rather we strive to be proactive, anticipating market needs and trends.

Various products have been developed by Sampsistemi in this manner. Our multi-wire drawing machines, with 40-wire or more solutions, are an example. These remarkable machines were first introduced some 10 years ago and, thanks to their outstanding performance in terms of productivity and energy consumption, they are today considered a fundamental investment for medium to large manufacturers all over the world who can now benefit from up to 56-wire solutions.

In the cable insulating sector, and with a particular focus on low voltage and automotive cables, our most recent developments have been in the field of quick colour change systems, now available with different levels of automation. Today we provide tailor-made solutions to manage colour change, both for PVC plastic lines and HFFR and halogen-free compound sheathing lines. Our latest innovation, which is rapidly gaining industry-wide application, is the colour change system for vulcanising lines, engineered for XLPE cables, which are extensively used in the automotive sector for producing high temperature (150 C) tolerant cables.

Since the amount of cable used in modern cars is constantly on the increase (what was 40 metres per car after the second world war is today 1500 metres), we expect the automotive sector to undergo significant development over the next few years, both in terms of demand for insulation materials, able to withstand increasingly hot temperatures, and of a growing necessity for vehicles, particularly in the most densely populated areas of Asia.



Andrea Camparada, Sampsistemi Sales Director

As for the welding wire sector, which is a highly specialised niche market for drawing, treatment and automatic respooling of steel and aluminium wire, we took advantage of the Bolognese vocation for automation (Bologna is in fact home to the largest packaging machine companies in the world), and engineered a fully automatic respooling line for the third millennium, the pride and joy of our welding wire product range.

While our plants produce the systems required by today's cable investors, our engineering team plans and discusses the design of tomorrow's solutions, to ensure that we continue to give our customers that necessary competitive edge, enabling them to stay ahead in their own business sectors.



SAMPSISTEMI

Signalling the way forward

BELDEN
SENDING ALL THE RIGHT SIGNALS

The name Belden® is a globally recognised brand that has become synonymous with products incorporating the highest levels of quality and innovation. Belden® provides signal transmission solutions for a wide range of markets, including data networking, industrial automation, professional audio and video, security and surveillance, aerospace and many other speciality electronics markets. Products include copper and fibre optic cables, connectors, cable management products, and Power over Ethernet.

In the 105 years since the company's founder and namesake, Joseph C. Belden, established the business in Chicago, the organisation has grown into a publicly traded corporation on the New York Stock Exchange (BDC) with operations spanning four continents and worldwide sales in 2006 of US \$ 1.5 billion.

A cornerstone facility in the Belden® network that has played a major role in the success of the company is the wire mill located

in Richmond, Indiana. Originally opened in 1928, with a current footprint of nearly 700,000 square feet it remains today as the largest manufacturing site in the entire Belden® organisation.

With the objective of sustaining rapid growth in its core products throughout the 1980's, coupled with the systematic introduction of a wide range of innovative new products, Belden® initiated an investment programme to enhance its capabilities through the acquisition of modern wire drawing technology. In addition to seeking state-of-the-art systems, it was equally important for Belden® to find a supplier with which to build a long-term relationship; a supplier that would remain open and receptive to collaborating with Belden® into the future for mutual benefit. Thus it was that Sampsistemi received its first opportunity to work with Belden® with a system delivery to the Tompkinsville, Kentucky factory in the mid-80s.

Very soon thereafter the focal point became the major expansion of the Richmond facility, engaging Sampsistemi as the preferred bare wire equipment supplier to Belden®. Since its commencement in the late 80s, this program has involved the installation of 10 Sampsistemi multi-wire



Richard Kirschner
Vice President of Global Manufacturing at Belden

machines, 10 intermediate drawing machines, 1 copper rod breakdown machine and countless ancillary units comprising static and dynamic spoolers and reel handling equipment.

The latest addition to the wire mill is a Sampsistemi 14-wire multi-wire, designed to

produce outlet sizes 0.254-1.024 mm of both bare and tinned copper. With in-line annealing and utilizing a DIN 800 reel, this line, known as '590', has streamlined production, allowing the wire mill to retire over 30 aging single wire machines and 5 annealing ovens. The DIN 800 reel package provides approximately 800 kg of wire, allowing for longer and more efficient down-stream runs.

The introduction of 590, the latest and most modern solution supplied by Sampsistemi, highlights Belden®'s manufacturing philosophy of constantly endeavouring to improve quality, delivery and reduce cost, now, and into the future. This philosophy, combining the unique strengths of Belden® and Sampsistemi, is one of the key factors supporting Belden® towards achieving its objective of sustainable global growth and success.

Marco Gerardo

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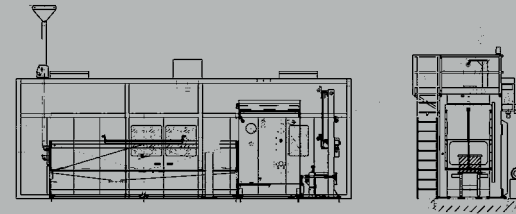
MT 105

Manufacturing Example

Number of wires	14
Max. inlet diameter	2.58 mm (10 AWG)
Outlet diameter	1.024 – 0.254 mm (18 - 30 AWG)
Max. speed	40 m/s / 7,872 fpm

The MT 105 drawing machine combines the need for reliability and quality with high speeds and top-level productivity. Engineered with a number of special features, this machine is the winning answer to your every drawing need:

- 105 mm steel drawing rings with tungsten carbide hard-facing (ceramic optional);
- Pressurised lubrication system for wire and dies including the final drawing die;
- Wire outlet diameter adjusted by means of a quick die change device with automatic speed change;
- Self-diagnosis system integrated as part of the control panel.



Wire and strands for growth



震雄铜业集团
ZHENXIONG COPPER GROUP



SAMP SISTEMI

When a country like China “gets up and goes,” the first essential requirement is the transfer of power, data and signals to provide full and widespread access to energy and means of communication. All this is possible with copper wire.

Mr Jin Zhenrong and his brother have always held this prospect in mind and hence focused their business operations on researching, developing and manufacturing high-tech copper conductors and wire strands.

Established in October 1996, Zhenxiong Copper Group Co. Ltd. is based in the Huaqiao town of Kunshan, the Eastern entrance to the Province of Jiangsu. Covering an area of 170,000 m², the company operates through 9 subsidiaries. Around the year 2000, when China’s economic boom was already underway, Mr. Jin had the idea of creating several wire production centres within China and a logistical network for the transfer of rods and wire, increasing the “appeal and value” of copper wire for customers that require good quality, fast delivery and reasonable prices. The main centre was opened in Kunshan, a strategic position from which to supply all major cable manufacturers.

Zhenxiong Copper Group is the largest copper conductor wire/cable production base in China and it is also one of the largest copper conductor research, development and manufacturing enterprises in the country, active in the development of copper materials and the manufacture of bare copper wire, tin plated wire, copper coil wire and other copper conductor products used in the automotive sector, in IT and for communication applications.

The Zhenxiong Group was awarded ISO9002:1994 International Quality System Certification in February 2000, ISO9002:2002 International Quality System Certification in February 2003 and ISO14001:2004 at the end of 2005.

The comprehensive strength of this group has earned it a position as one of Top 500 Largest Chinese Private Enterprises, and its products are all destined to big names in the business, both within China and overseas.

Zhenxiong Copper Group invests heavily in research and development to ensure that its products are always of the best possible quality. Sampsystemi was thus privileged to supply



Sampsistemi multiwire lines

the complete range of drawing and bunching equipment to such an esteemed manufacturer, an order which included a 4-wire rod breakdown machine, 20 multi-wire drawing machines as well as a good many bunching machines and pay-off systems. And, within just a year, yet another multiwire and rod breakdown machine were on the way to China, the latter to work on an electrolytic tinning line (Neuman). The Kunshan factory boasts a production

capacity of 10,000 metric tonnes of copper rod per year, 10,000 metric tonnes per year of wire in the 0.05 – 0.50 mm size range and 20,000 metric tonnes per year of tin plated wire, which is in addition to the 80,000 metric tonnes per year produced by the group's other facilities, and, with such incredible rates of productivity, Zhenxiong is the undisputed market leader in the field of bare wire production in China.

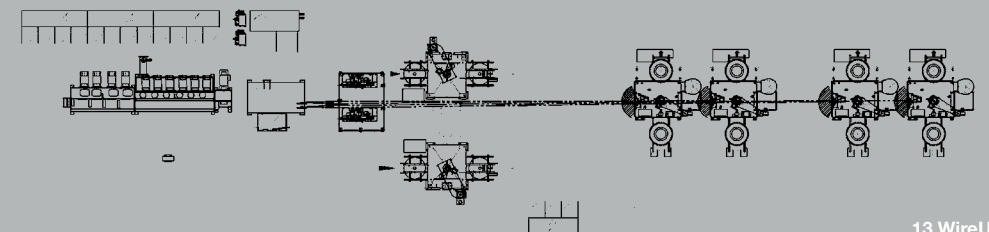
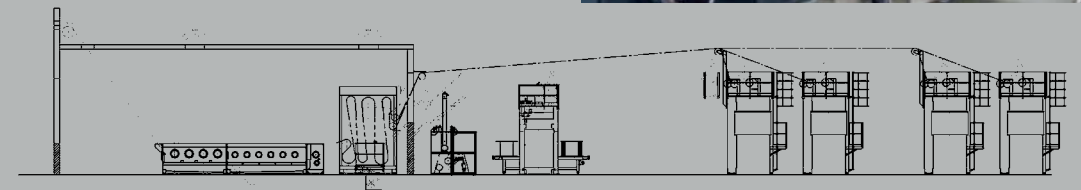
MT 500 SC

The efficiency of immersion technology combined with the simplicity and accessibility of spray lubrication is the winning philosophy that lies at the heart of the Sampsistemi MT 500 SC limited-slip rod breakdown machine. This innovative solution can satisfy any rod breakdown requirement, ensuring that your end product is of the best possible quality whilst keeping costs to a minimum. The machine can process copper, aluminium and aluminium alloys.



Manufacturing Example

Number of wires	4
Number of drafts	11
Max inlet diameter	(450 N/m ²) 8 mm
Outlet diameter	2.00 mm - 4
Production capacity	7 T/h



BM 2x355

The Sampsistemi BM 2x355 double-twist twin bunching machine comprises two independent bunchers under a single frame and utilises just one electric motor. This innovative solution is ideal for producing two different types of bunches at the same time, which can either be wound onto two different or identical bobbins with the same number of twists/minute and with different or identical stranding lay-lengths. The BM2x355 is also extremely convenient both in terms of overall dimensions and investment when compared to the space requirements and costs involved in purchasing two separate bunchers. And energy consumption is also very low. A closed-bow solution, comprising a steel tube embedded in a carbon fibre bow with an aerodynamic profile not only means lower energy consumption but it also guarantees top quality bunching.

Manufacturing Example

Copper	bare & tin
Strand section	0.008 - 0.38 mm ²
Max speed	2x5,000 RPM = 2x10,000 TPM
Flange diameter	100 - 355 mm



Mr. Jin Zhenrong, President of Zhenxiong Copper Group

In view of these market demands and the growth in exportation volumes of your company, how do you rate the performance of Sampsistemi machinery?

Machine performance is absolutely crucial to the quality of the end product and can really affect the future of a manufacturer. Initially we chose Sampsistemi for its longstanding experience in this field and its ability to manage turn-key projects and related resources. We obviously experienced a certain amount of difficulty during factory start up but this is normal when you consider the large number of machines involved, all with centralised systems, and the consequent impact of training. The plant was soon up and running, however, and we were able to fully appreciate our Sampsistemi machinery, especially in terms of working speeds, flexibility and rigidity.

Does Sampsistemi machinery meet your market demands?

Yes, for sure.

What do you think of the establishment of SAMP Shanghai?

The establishment of SAMP Shanghai is giving impetus to the development of the Chinese wire and cable industry. Moreover, service is absolutely fundamental for this type of industry and having a Sampsistemi factory in loco will certainly benefit the continuity of the customer/supplier relationship and any servicing needs that may arise.

Listening to the words of Mr. Jin Zhenrong, President of the Group, the global scenario in which this important reality operates is more than apparent.

How do you see the current wire and cable industry in China and how do you envisage the future development strategies of Zhenxiong Copper Group in China and overseas?

The Chinese wire and cable industry today is evolving at an incredibly rapid pace and runs in parallel to the high-speed developments underway in the international electronic information industry. Our strategy at Zhenxiong is therefore to partner this industry, being ready to satisfy any international market demand, continuously improving and updating our products to drive this industry forward. Our mission is to constantly improve the technological content of our products, to be the number one manufacturer in China and a first-class player on a worldwide level too.

What, in your view, are the future prospects for the Chinese wire and cable market?

The Chinese wire and cable market will grow more steadily and mature in the future and I think that the whole industry, together with electronics, will become a real industrial pillar of our national economy.

Roberto Bazzani

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All wired up and raring to go

JSC Mezghosmetiz-Mtsensk is a young, upcoming Russian producer of welding wire consumables. Previously a mechanical engineering firm, the company was reorganised in 1998 for the manufacture of welding electrodes, copper-plated wire and stainless steel wire, and today it is one of Russia's leading wire manufacturing enterprises.

The company presently manufactures over a hundred different types of general and special-purpose welding electrodes with diameters ranging from 2.0 to 5.0 mm, all in strict compliance with International quality standards. These electrodes are packaged in cartons up to 5 kg; packed in polyethylene shrinking film or placed onto pallets which are then wrapped with stretch film and delivered to the doors of Mezghosmetiz-Mtsensk customers.

In 2003 Mezghosmetiz-Mtsensk embarked upon the copper-plated wire sector, and today manufactures diameters from 0.8 to 1.6 mm for MIG/MAG welding wire applications, using

Sampsistemi equipment and technology. This copper-plated wire can be supplied with various types of packaging alternatives including D-200 plastic spools (5 kg); K-300 metal baskets with precision layer winding (15-18 kg); silica gel; polyethylene; cartons or stretch-film wrapped pallets and wide pail packaging on drums up to 400 Kg.

In 2006 the company also began the production of copper-plated wire with diameters from 2.0 to 4.0 mm using the SUB ARC welding process and now supplies its customers with various packaging alternatives, ranging from K-415 metal baskets with precision layer winding (25 kg); silica gel; polyethylene; cartons; stretch-film wrapped pallets, not to mention large coils from 500 to 1000 kg.

In 2005 and 2006 JSC Mezghosmetiz-Mtsensk was considered one of the best producers of copper-plated wire for the welding wire industry in the whole of Russia.

We talked to Mr. Kostjuchenko, Managing Director of this promising reality.

Mr. Kostjuchenko, why did Mezhgosmetiz-Mtsensk opt for Sampsistemi technology?

Of all the producers active on the market, we chose Sampsistemi for its innovative welding wire production technology (CO₂), which did not exist in Russia at the time. Using an annealed wire rod which is also suitable for mechanical descaling makes the preliminary annealing process a thing of the past. This has clearly brought about a significant reduction in production costs and time and has resulted in higher production revenue.

There was just one risk involved at the time in that there were no producers of suitable wire rods available within the CIS, but our engineering team cooperated closely with

Sampsistemi specialists and an important CIS wire rod manufacturer, enabling us to obtain the right product. By the end of 2007, another local producer will have launched a production facility for the manufacture of this type of wire rod and so we will also have an alternative supplier.

Are you satisfied with your Sampsistemi equipment?

In general, our lines work very well. At Mezhgosmetiz-Mtsensk we produce wire of the highest possible quality, in compliance with the strictest international standards and so we are indeed satisfied. Not only do the machines work well but whenever we request any personalisation or alteration to the equipment, Sampsistemi is always readily available to analyse our needs and help us find and implement the right solution.



Do you think the Sampsistemi lines have given your company a competitive advantage?

In a very short space of time, Mezhgosmetiz-Mtsensk has become market leader in Russia for the production of MIG/MAG welding wire, and this is primarily thanks to the use of Sampsistemi equipment and technology. This achievement and success clearly brings us satisfaction and makes us feel that the significant investment made for your equipment at the beginning was well worth it.

What, in your opinion, are the strong points of the Sampsistemi organisation?

All good things are made by means of objects, persons and actions, and these are all closely interrelated. As specifically regards the machinery, I very much like the fact that I receive answers and reactions immediately from people in your organisation who are in direct contact with us. We found it was very simple to establish a strong and collaborative relationship with Sampsistemi people, even though we were a little fearful of communication difficulties at the beginning. Step by step, our relationship has become closer, however, and communication is clear and simple.

What are your future plans at Mezhgosmetiz-Mtsensk?

We plan to expand strongly both in the MIG/MAG welding wire sector and with new products. Firstly we want to double our present capacity of CO₂ welding wire and then we intend to introduce other wire types into the range. Secondly, we are now starting the production of flux-cored wires for welding and filling purposes and, thirdly, we plan to get organised for the manufacture of ceramic welding fluxes in the very near future. These plans have already been approved and are under development. Our main aim is to maintain our position of market leader in this sector and stay one step ahead of our competitors.



Mr. Kostjuchenko,
Managing Director of JSC Mezhgosmetiz-Mtsensk

“(...) whenever we request any personalisation or alteration to the equipment, Sampsistemi is always readily available to analyse our needs and help us find and implement the right solution.” - said Mr. Kostjuchenko

Aldo Zanirato

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 SAMP SISTEMI

Bringing innovation to life at Sampsistemi



The wire and cable machine sector is currently developing at an incredibly rapid pace, primarily due to escalating market demand for energy cables.

Wire manufacturers today pay increasing attention to production costs, creating a need for more productive systems, lower rates of energy consumption and solutions which make use of more economical insulating materials.

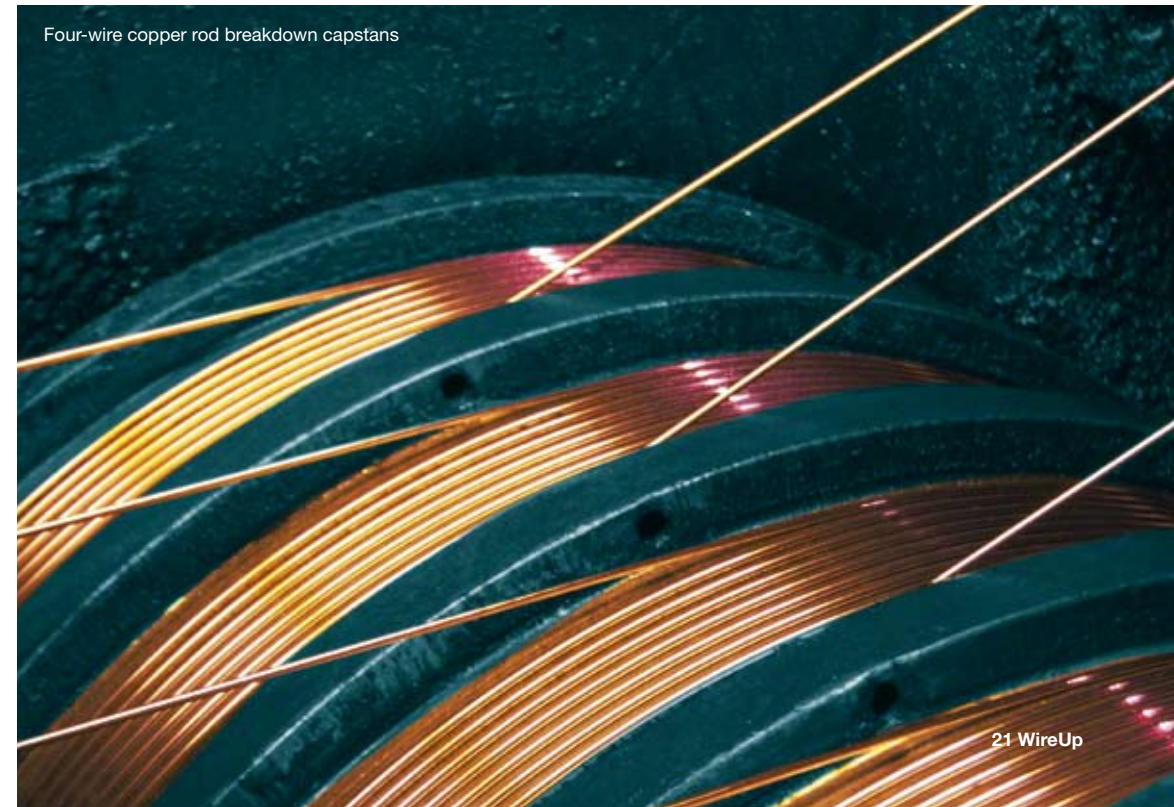
At Sampsistemi we meet our customers' requirements by constantly developing new, ad hoc solutions within our engineering departments, each of which is dedicated to a specific product line so as to guarantee that necessary level of skill and specialisation.

In the copper and aluminium drawing sector, for example, our efforts have focused on two main lines of action, and we have engineered both:

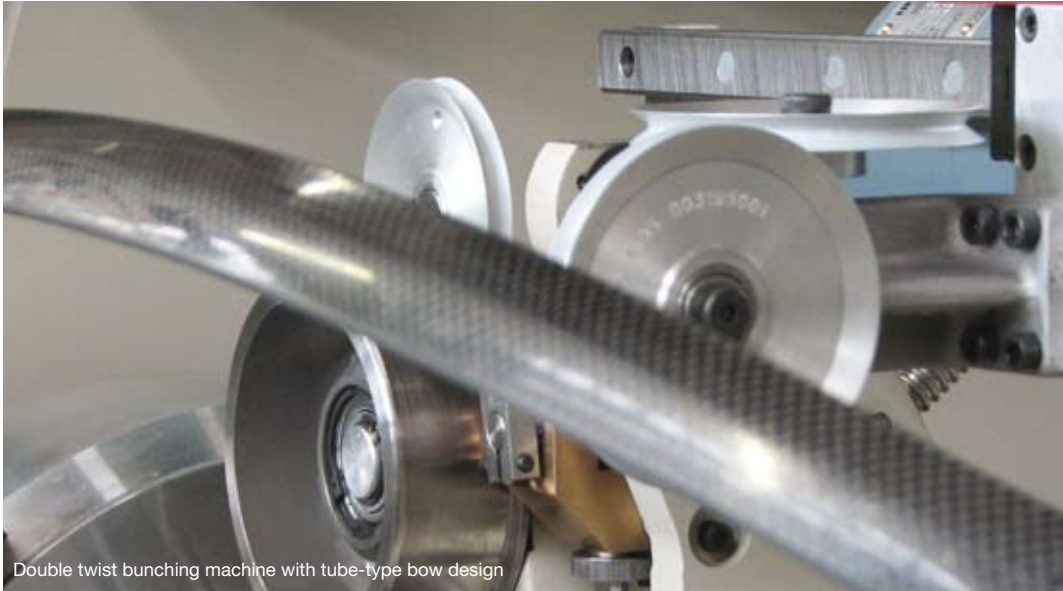
- limited-slip rod breakdown machines, ideal for drawing aluminium, aluminium alloys and copper and multi-wire drawing lines with up to 56-wire solutions.

Both ventures have indeed produced extremely encouraging results in terms of productivity and energy-saving criteria, so much so that wire manufacturers are replacing their existing equipment, since, though often still efficient, it is no longer competitive within the context of today's rapidly evolving marketplace.

Quick colour change technology is under widespread development within the field of extrusion, especially when it comes to the manufacture of automotive cables and PVC or HFFR-insulated building wire or to tubulcanising of XLPE-insulated, reticulated, high-speed automotive cables. The latter in fact applies the tried and tested notions of



Four-wire copper rod breakdown capstans



Double twist bunching machine with tube-type bow design

thermoplastic extrusion to XLPE vulcanising, bringing users application flexibility, incredible scrap reduction and top-level productivity. And as regards low tension XLPE cables, the most recent development underway at Sampsystemi is the introduction of liquid silane technology, applied to our high capacity extruder range (120 - 160 mm). This solution means that users can take advantage of more economical insulating compounds, not only for ABC (aerial bundle cable) production, but also for cables with sections up to a remarkable 300 mm². As for welding wire, on the other hand, our most recent innovations have seen the precision layer

rewinding process optimised, making it ideal for winding any type of wire (from aluminium, flux cord, and stainless steel to conventional CO₂) onto both plastic spools or the simplest of metallic baskets. Moreover, we have now also physically separated the skin pass drawing capstan of the second wire drawing process, thereby significantly enhancing wire surface quality, the performance rates of this particular process as well as the effectiveness of subsequent respooling operations.



High-speed, halogen-free insulating process



Welding wire precision layer spooler



Barbara Zarotti
Sales Assistant
Sampsystemi Bologna

THHN - PVC/nylon extrusion systems

A look at cable design:

PVC/nylon insulation is widely used in North America and in other parts of the world such as the Middle East and some regions of the Far East. Under the denomination of THHN, a wide range of PVC/nylon insulated conductors are defined and used in conduit and cable trays for services, feeders and branch circuits, both in commercial and industrial applications.

PVC/nylon insulated conductors are also widely used as part of NM-B cable construction for building wire and its application in residential wiring solutions.

The use of an outer nylon layer gives the cable additional mechanical and oil resistance properties.

About THHN

THHN covers a range of stranded conductors from 14 AWG to 1000 MCM (from 2 to 500 mm²) with insulation thickness varying according to the conductor cross-section from 15 mils to 70 mils (from 0.4 to 1.8 mm) for PVC and from 4 mils to 9 mils (from 0.1 to 0.22 mm) for the nylon layer. Depending on the type and application, 10 to 12 different colours are used for differentiation purposes. Solid conductors are limited to 10, 12, 14 AWG (1.6 mm, 2.0 mm and 2.6 mm).

The Sampsistemi solution

PVC and nylon extrusion is performed in a tandem operation. PVC is first applied through a crosshead, utilising compression tools. Initial air-cooling takes place (open space of 3 to 5 metres) and then nylon is applied on top of the PVC. The nylon crosshead may utilise either tube or semi-tube tools and a high vacuum pump is required to guarantee perfect and

smooth adhesion between the PVC and nylon layers.

The PVC extrusion group may be either a single extruder or a combined solution comprising a main extruder and an auxiliary extruder for those applications where skin coloration is required. Using skin coloration is economically very advantageous, not only in terms of master batch consumption but also in terms of the amount of scrap generated during colour change, which is drastically reduced.

Another economic advantage of skin coloration is the fact that it is possible to use a more cost-efficient type of PVC for the inner layer, applying a quality grade PVC just for the coloured skin. A smooth finish and excellent surface quality of the end product is thus guaranteed without prejudicing overall electrical property requirements in any way.

For example, if we consider a THHN 14 AWG (1.6 mm) product – this being the smallest possible ratio of potential master batch savings – it is possible to achieve savings of an incredible 65%. This ratio automatically increases as cross sections become larger and insulation thickens, and using skin coloration across the complete range of THHN will generate incredible cost-saving opportunities.

Line/extruder group configuration

Line configuration and extruder sizes may be modified to suit the product mix and specific customer production requirements at hand. In general, configuration falls into two main categories:

1) High-speed lines – small cross section range from 14 to 6 AWG (from 2 to 13 mm²) Continuous production using a dual flyer pay-off system, with maximum speeds up to 1200 m/min for stranded conductors and up to 1500 m/min when running solid. Extruder group configuration is as follows on this type of line:



PVC

Main - Base	Aux - Skin Colour	Jacket
TE 100-25	TE 60-25	TE 80-25
TE 80-25	TE 45-25	TE 60-25
Dual layer x-head TX14D		Single layer x-head TX20S or TX14S

Nylon

The type of PVC and / or nylon extruder group chosen may be customised to better suit individual customer requirements.

Optional:

Quick PVC colour change system

- 2 auxiliary extruders

- cross-flow valve for the 2 auxiliary extruders

- cross-flow crosshead

With this type of configuration, it is possible to perform quick colour change with minimal scrap, without interrupting the work cycle and without reducing line speed during colour change.



2) Low-speed lines – larger cross sections from 6 AWG to 1000 MCM (from 13 to 500 mm²)

Continuous production using entry pay-offs/accumulators and exit take-ups/accumulators. Depending on the exact type of pay-offs/take-ups and on accumulator length, maximum line speed may vary between 250 and 400 m/min. Extruder group configuration:

PVC

Main - Base	Aux - Skin Colour	Jacket
TE 120-25	TE 60-25	TE 100-25
TE 160-25		TE 100-25
Dual layer x-head TX45D or single layer x-head TX45S		Single layer x-head TX50S

Nylon

The colour black is commonly used for larger cross sections due to the specifications and applications typical of this type of cable. Mass colouring with one large extruder is therefore the preferred solution.

3) High-speed tandem line with in-line wire drawing:

NM-B cables for 10, 12 and 14 AWG (1.6 mm, 2.0 mm and 2.6 mm) sizes use exclusively THHN primary with solid conductors. Due to the high demand and high volumes typical of this type of application, top levels of productivity and efficiency are a must when producing these 3 standard sizes.

Thus tandemisation of the PVC/nylon extrusion with in-line wire drawing/annealing not only offers increased speed capabilities but also makes it possible to eliminate an additional step in production.

PVC mass or skin colouring is possible with this type of configuration. A coiler/barrel packer is usually placed at the end of the line due to the high speed levels involved.

Sampsistemi technology in short

PVC/nylon extrusion, guaranteeing a quality end product in terms of mechanical, electrical and surface finish requirements.

Wide range of extruder group configurations to suit specific customer needs.

Skin coloration or quick colour change systems, offering incredible cost-saving opportunities.

High-speed production systems for optimum productivity and efficiency.

Tandemised wire drawing and extrusion know how from a single source.

Full line tandemisation

Wire Drawing / Annealing :	MT400 11 dies + RC500 6000A
PVC extruder:	TE 120-25
Nylon extruder:	TE 80-25

Product	Speed
14 AWG (1.6 mm)	7,500 ft/min. (2,250 m/min.)
12 AWG (2.0 mm):	7,500 ft/min. (2,250 m/min.)
10 AWG (2.6 mm)	6,200 ft/min. (1,860 m/min.)

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Welcome to Interwire

From 7th to 10th May, the Interwire trade fair, the most important wire and cable event in the USA, will be opening its doors at the I-X Centre in Cleveland, Ohio, USA. And Sampsistemi will be there to exhibit an MT 105 multiwire and RC 250 annealer, an extrusion group, and a combination of payoffs and buncher that will be in full operation in the booth. The MT 105, the latest Sampsistemi multiwire design, provides production versatility, increased output and reduced energy consumption. The display model will feature a 21-die draw-box for 14 strands and a 5200 Amp annealer. The extrusion group, type TE 60/TE 80-25 D, will be PVC/nylon configured for building wire applications. The buncher, type BM 630 D, will incorporate new PLC controls specifically developed for the North American market. An interactive

display of the company's after-sales service and spare parts group functions, as well as a comprehensive display of the Sampsistemi product line will also be on show. Through its service and parts group, Samp USA, Inc. is equipped to manage machinery upgrades and complete rebuilds, thus allowing the end user to maximise production potential and minimise costs.

We look forward to welcoming you all at stand 2023 to illustrate our complete range of machines and equipment.





The next Wire Russia will take place in Moscow from 28th – 31st May 2007, together with Metallurgy-Litmash, Tube Russia and Aluminium/Non-Ferrous 2007, at the Krasnaya Presnya fairgrounds in Moscow. Not only will we show you great technology at our stand during the fair but you can also meet our experts, who will be on hand at all times to discuss your wire and cable production needs with the aid of the most modern equipment and sought-after materials that state-of-the-art wire and cable manufacture can offer. This time round we will be exhibiting the BM 630 DM double-twist bunching machine, together

with our SDV 630 pay-off and TE 120-20L extruder; a double-twist line engineered for the manufacture of both 7, 19 and 37-wire bunched conductors and concentric strands. The line comprises a motorised pay-off with a centring group and integrated bobbin lifting system. Linking a pay-off, which carefully controls wire tension, to a bunching machine, expertly crafted in terms of wire path and state-of-the-art technology, guarantees top performance levels and yet still enables the user to attain unmatched end product quality. The extruder is a multipurpose solution for power cable or building wire filling applications,

and, being equipped with a combined cylinder / screw thermoregulation system, it is suitable for both EPDM rubber and PVC filling. Temperatures are regulated either by pressurised water or oil depending on the zone at hand. The coming Moscow trade fair will provide occasion for us to meet up with customers from this vast region, who in recent years have increasingly opted for Sampsistemi machinery and equipment. Our list of market references today spans the entire Sampsistemi production range and includes all main manufacturers across Russia, the CIS, Lithuania and Ukraine. The fair will also provide the perfect opportunity for us to present the market with the new Sampsistemi organisation. We will in fact shortly be supporting customers directly from our own Moscow-based office, run by an Italian manager

and competent team to provide you with the necessary support for equipment on order and after-sales service. In fact, at the coming Wire Russia, as at the last edition, high-tech will be the recurring theme that accompanies you throughout your visit but we will not forget that special dose of hospitality which has always been part of our tradition, making our stand a meeting place for customers old and new or simply for friends that want to relax and chat about future projects in a warm and jovial atmosphere.

During your visit to Wire Russia, do not miss the opportunity to visit the Sampsistemi stand (no. C 10 in Hall 1) to chat with our team of experts, see the machines for yourselves and perhaps even enjoy a well-deserved rest with a good Italian espresso coffee! We look forward to seeing you all there.



A look at history



SAMP USA is located in Williamsport, MD, just 13 miles from the town of Sharpsburg where the September 17th, 1862 Battle of Antietam took place. This pivotal, 12-hour battle between the North and South changed the course of the Civil War and helped to free over four million Americans. Therefore, this is not only an important part of our local history, but a critical component of our country's tradition.

The invasion of the North began when the Confederate Army of Northern Virginia, led by General Robert E. Lee, crossed the Potomac River into Frederick, MD. There, Lee divided his army to capture Union troops stationed at Harpers Ferry, WV, a vital location on the Confederate lines of supply and communication back to Virginia. General Thomas "Stonewall" Jackson and approximately half of the army were sent to Harpers Ferry, while Lee and the remaining Confederates moved north and west towards South Mountain.

In Washington D.C., President Abraham Lincoln called upon Major General George B. McClellan to protect the Capital and respond to the invasion from the South.



McClellan reorganised the Army of the Potomac (Federals) and advanced towards Lee. The armies first fought on South Mountain on September 14th where the Confederates were unsuccessful in their mission to block the Federal Army. This forced Lee to retreat and he considered a return to Virginia. However, upon learning that Jackson had captured Harpers Ferry on September 15th, Lee decided to make a stand in Sharpsburg.

Confederate troops were positioned on high ground west of the Antietam Creek. General James Longstreet's command held the centre and right positions while General Jackson's men held the left. In preparation for his attempt to drive Lee from Maryland, General McClellan positioned thousands of his soldiers on the east side of the Antietam Creek.

At dawn on September 17th, the 12-hour battle began with three major Union offensives on the Confederate's left (northern) position. The advances were led first by General Joseph Hooker, then General Joseph Mansfield, and finally by General Edwin Sumner. With over 15,000 soldiers killed or wounded, the Confederates were pushed back but not

defeated. Further south, Union General Ambrose Burnside led an attack on the Confederates right (southern) position with the primary task of capturing a bridge crossing the Antietam Creek, which would later be named Burnside Bridge. Although he succeeded in capturing the bridge, General Burnside was unable to advance further as Confederate reinforcements, led by General A.P. Hill, arrived later that afternoon.

Both armies held their ground until sun down on the 17th, despite over 23,000 casualties. The following day, both armies gathered their wounded and buried their fallen soldiers. Then, on the evening of September 18th, Lee's army withdrew across the Potomac River into Virginia. As a result of this historical battle, the Union was preserved and most importantly, President Lincoln was able to issue the Preliminary Emancipation Proclamation on September 22nd, 1862.

Photos courtesy of the National Park Service





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ART* FIRST

Artefiera Art First, the Bolognese trade exhibition which took place from the 26th – 29th this past January, is a step ahead of the rest, having conquered a clear-cut cultural position on the international scene. Certainly the most important modern arts trade exhibition in Italy and one of the most renowned events in Europe too, the Bolognese show has earned itself the reputation of an appointment not to be missed. For the modern and contemporary art



enthusiasts and experts that visit Artefiera Art First each year, the numerous meetings held throughout the event are a tradition and a pleasure, providing unique opportunities to meet up and debate with protagonists from the world of art.

This time round, one of the main highlights of the meetings in the Art Café on the Saturday was the SAMP award, and Antonio Maccaferri, President of the sponsoring company, Mauro Mazzali, Director of the Accademia delle Belle Arti of Bologna, and Alberto Zanchetta, independent art critic, had occasion to reflect and discuss upon this initiative. The SAMP award, which came into being with the idea of industry and artistic institutes collaborating to spot emerging artistic talent, was judged a fruitful initiative by the world of art.

Available now from our Corporate Marketing department, worldwide sales offices and agents, the new company profile, presenting the Sampsistemi organisation and complete product line.



ACIMAF, (the Italian association of wire and cable machinery manufacturers), celebrates its twentieth anniversary this year and, to commemorate this event, it will be publishing a booklet and organising a day of festivity for 14th June. Journalists from the sector and delegates from all main international associations will be participating and the association's collaboration with ICE will be relaunched during the event.

The Tekno/Tube Arabia 2007 trade fair came to a successful end in January, counting an incredible 14,449 trade visitors. The majority of visitors came from the Middle East, North Africa and the Indian sub-continent. We would like to thank all customers for the interest shown in our products and look forward to seeing you next time round too.



Sampsistemi intensifies its presence at Bruno Baldassari & Fratelli S.p.A.. Following on from the two 28-wire drawing machines that have been in operation at the company for some time now, a new agreement has been reached with this customer for the supply of a 48-wire drawing line and four BM 800 bunching machines.



Commissioning of an AIA4 auto wire line and of the BM 800 and BM 630 bunching machines, both complete with automatic pay-off systems, has been successfully brought to an end at Nexans Morocco and we would like to thank this customer for the positive collaboration lent to our technicians throughout their stay in Morocco.

The next International Wire & Cable Conference will take place in Bologna from 5th to 7th November 2007. Organised by Associazione Costruttori Italiani Macchine per Filo, Comité Européen de la Tréfilerie, International Wire & Cable and The Wire Association International, Inc., this occasion follows on from previous acclaimed joint events held in Prague in 2005 and Stresa in 2003. The city of Bologna, whose industries have always been at the forefront in promoting technological development, has been chosen to host this important meeting, and Wire 07 Bologna will cover both the steel wire and non-ferrous/electrical wire industry segments. The venue chosen for the conference is the very well appointed and conveniently located Boscolo Hotel Tower at which special value room rates for delegates have been negotiated. Additional budget accommodation will be available at the Bologna Fiera Hotel, a short taxi

ride away. Both hotels are close to the international airport. The programme is expected to include up to thirty high-quality technical presentations over a two-day period and tabletop exhibits will complement the event. One major and very attractive feature of the conference will be a glittering social evening on 5th November at the sixteenth century Palazzo Del Vignola, owned by Sig. Lamborghini of the famous car company. On 7th November optional trips will be offered to visit the Ducati Museum and the Ferrari Gallery. Looking forward to seeing you all in Bologna!

