

GOLDEN news

Anniversary Edition

1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012



Editorial



Dear customers and partners,

time flies! This edition of Wölco Golden News you're holding contains half a century of history. Join us on a trip through 50 years of the company's past and relive our experience both inside the company and out in the wider world. This proud 50-year anniversary shows that our company and its employees have always met the changing needs of the labeling industry with flexibility, innovation and a strong sense of commitment.

During this time, labels have transformed from a simple information carrier to a functional component with electronic, safety and security characteristics. This development has constantly accelerated in recent years and called for comprehensive investments in new production lines and product ranges. The past 50 years have not just been marked by quick adaptation to technical conditions, but also market globalization. We at Wölco have played our part in this. With sites in Germany, the US and China, we have grown to become one of the few worldwide labeling specialists for the technical and automotive industries. With almost 140 motivated employees, we create premium-quality labeling solutions using the latest production technologies.

As a mid-sized company, we see ourselves as a direct, personal contact for every aspect of product labeling, just as we did 50 years ago. That is why Wölco is a single source for everything from simple labels to complex labeling systems. Our company's long history is a wonderful heritage that allows us to look to the future with pride and motivation — because we have a vision: We plan to con-

tinue delivering outstanding quality products bearing the Wölco brand name — regardless of where we are in the world.

At this point I extend heartfelt thanks to all employees, customers and business partners for decades of loyal collaboration. Let's look forward to a successful future together!

A handwritten signature in black ink, appearing to read "Peter Lehmann".



Wölco was established on October 2, 1962.



his label printing shop. In a defunct seal printing plant in Ehningen, Germany, he laid the foundation for a

In the era of the first manned space flight and kidney-shaped coffee tables, Rolf Wölfle drew on his great flair for sales to found

company that, 50 years later, would be successful all over the world. When he registered the company at Ehningen Town Hall, the mayor at the time didn't think he had much of a chance, because two other entrepreneurs had already tried unsuccessfully to set up companies. However, Rolf Wölfle had an idea that he wanted to make a reality — producing labels in a single step without any manual intervention. In his first "company car," a tiny NSU Prinz, he personally visited technical and

business decision makers to convince them of the efficiency and advantages of his process. Right from the beginning, this type of forward-thinking management ensured the success of the company Wölco.

Just two years after the company was founded, a special machine was purchased for switching from wet-glued labels to self-adhesive ones. Expansion soon made a new corporate building necessary, and with the introduction of brilliant new UV color technology, Wölco continued on its innovative path. The early 1970s brought the first developments in printing and stamping synthetic label stock and the purchase of a modern 4-color semi-rotary printing press.



Wölco building in 1970



Company sign



1960s/1970s

A Second-Generation Family Business

While millions of the world's children and adults were trying to solve Rubik's cubes in the 1980s, Wölco moved forward with its innovation, continuously investing in printing technology. Two years before the Berlin wall fell and a divided Germany reunified, the founder's son, Dieter Wölfle, joined the firm. At that time, the new operating and order system MADAT was developed and introduced, with which for the first time all print data was gathered online through computer terminals. In addition, the Wölco quality assurance system and the Wölco quality passport was introduced, as well. Wölco already placed great importance on quality at this time. This quality was the deciding factor facilitating the entrance into the telecommunications sector.

In the early 1990s, Wölco moved to a new building in Ehningen, and storage of printing and stamping tools was switched to a computer-controlled system.

Wölco entered the international labeling market in 1995, when it established a sales office in the United States. Just one year later, the Wölco quality management system was DIN EN ISO 9001 certified, and Wölco entered the ranks of the 100 most innovative companies in Germany. In addition to two FINAT awards in 1996, Wölco received even more FINAT awards in 1997. At the same time, Wölco's share of exports grew within Europe, as well as in North and South America. To

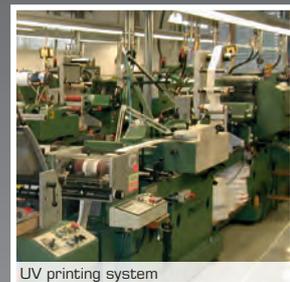
meet the rising demand in the American market, in 1998, Woelco Labeling Solutions, Inc. was established in Charlotte, North Carolina.

The parent company evolved further as a system supplier when it set up Wölco Systemtechnik at the company headquarters in Germany. The idea to supply labeling systems broadened the product portfolio considerably and now the customer could get everything in one place. For product labeling, automation was greatly expanded.

By the turn of the century, Wölco already employed 100 people.

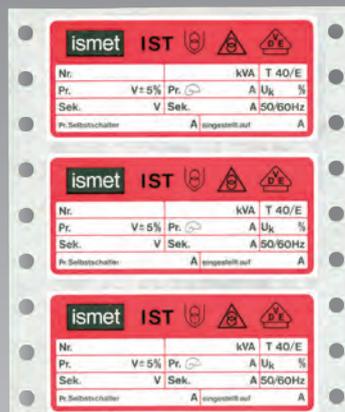
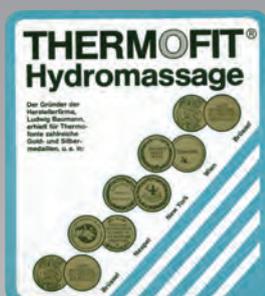


Wölco building in 1980



UV printing system

1980s/1990s



Becoming a Global Player

In 2001, the world was celebrating the start of a new millennium, and cellphones had become indispensable gear for everyone. That same year, Wölco was declared "Best in the World" by the international World Label Association. During the first decade of the 2000s, despite banking, economic and financial crises, Wölco invested even more in very precise, large-format flexographic printing machines with servo-control led printing units. This guaranteed even higher quality printing. Over the next decade, Wölco completed the move to digital printing, allowing each

label to be uniquely generated with its own barcode using multicolor thermal transfer printing. Introduction of a new inventory control system ensured greater transparency and efficiency in a number of business sectors. Wölco became certified under ISO/TS16949, the auto industry's highest standard for quality management of customer requirements. In addition, its DIN EN ISO 9001 certification was renewed.

In 2003, Wölco bid farewell to its founder, Rolf Wölfle, who passed away at the early age of 74. Two years later, the firm was converted to a joint stock

company. It acquired an additional production building in Ehningen in order to combine its system technology and product labeling business divisions.

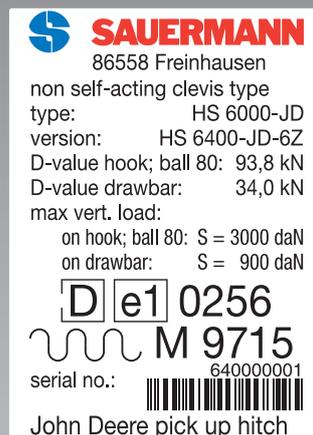
After receiving the Bosch Supplier Award in 2006, the company established Changzhou Woelco Technology Co. Ltd. in China. With the addition of a production facility in the Wujin industrial park, Wölco AG expanded its global presence and became one of the few companies to produce self-adhesive labeling solutions in China according to German standards.



Wölco building in 2003



UV flexographic printing system



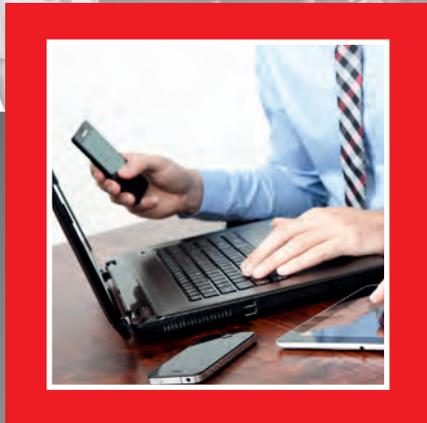
The 2000s

Quality at the Highest Level

In 2011, digital printing was developed further and brought up to the highest state-of-the-art. A new high-performance digital printing machine with up to 7 colors in offset quality effortlessly meets the stringent demands for labeling high-tech products. A flawless combination of variable data and fixed printed elements allows for faster delivery times and lower inventory for the customer. It is the best technology on the market and also offers sensational speed and the finest printing results.

Every year, renowned customers in the automotive industry are personally won over by the company's high-value processes and products due to several audits and DEKRA certifications. To ensure required sustainability, Wölco delivers only the best quality. This guarantees long-term durability and conserves valuable resources. Furthermore, the company continuously seeks ways to become even more environmental friendly. Therefore, Wölco has recently begun using Europe's first electrically powered

vehicle for business travel. Its revolutionary drive system uses energy stored in a 16 kWh lithium-ion battery to cover distances stretching from 40 to 80 km. Across longer distances, the highly efficient onboard generator takes over. It supplies the electric motor with power while keeping the battery adequately charged. The vehicle can therefore be used anywhere, anytime.



Digital printing system



Receiving the keys to the Opel Ampera

Today

4 colores
de fondo
4 cores
de fundo

écran
retro-éclairé
4 couleurs
au choix

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MANN+HUMMEL

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MANN+HUMMEL

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Certifications Keep on Coming

As one of the first companies in the product labeling industry to receive ISO/TS16949 certification, Wölco always places great value on the highest quality standards. Accredited auditors from DEKRA inspect the plant in Ehningen, Germany, regularly and thoroughly, as well as the facilities in Mooresville, North Carolina, and Changzhou, China. As in the past, no deviations from specified standards have been determined in the newest audits.

Auditors always praise the excellent orderliness and cleanliness in our business divisions, as well as the motivation, commitment and qualifications of our workers. A special

highlight is the integration of the environmental management system into the existing, fully developed "Integrated Management System." Under this policy, the Wölco company has been committed to ecological sustainability for years. The purchase of an electric car as a company car also follows this philosophy.

As a system supplier of innovative product labeling, we rise to the challenge of meeting our customers' needs and face up to the laws of the markets. To safeguard our company and our workers' jobs, we work in an efficient, customer-oriented, quality-conscious and environmentally safe manner. Specifically, we create an atmosphere

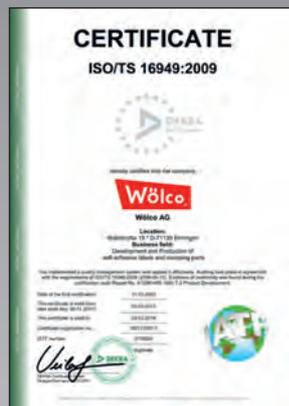
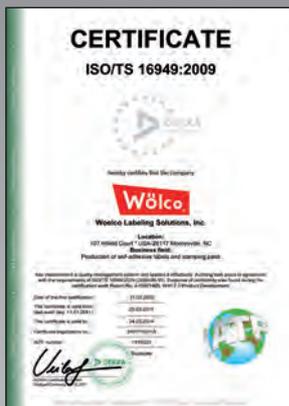
of concern for both the environment and job safety at our sites, minimizing ecological effects and putting on as little stress as technically possible on the environment. Besides certification for product labeling, the system technology division has been audited and re-certified under DIN EN ISO 9001. Wölco has also been awarded certification under the DIN EN ISO 14001 environmental standard recognized the world over. These certifications confirm that the Wölco group's quality and environmental management system meet the high expectations put on corporate management in today's world.



DEKRA auditing team



Quality testing



Today



Educational partnership with the Friedrich Kammerer School

Wölco Bets on Quality from the Beginning

Starting in 2012, Wölco has officially partnered with the Friedrich Kammerer School in Ehningen under the education program of the Baden-Württemberg Chamber of Industry and Commerce.

This program takes cooperative action to provide students with qualified training and to produce highly skilled personnel, now and for the future. To help make this ambitious goal a reality, the Rolf & Dieter Wölfle Foundation and

Wölco AG have donated whiteboards to the school. Using a projector and appropriate software, these interactive boards serve as a huge surface where graphics and documents can be edited. With these modern instruc-

tion materials, students are prepared for everyday professional work with modern media. ■



Ambition Beyond the Job



In addition to his work at Wölco, employee Thomas Salomon has gone to night school on his own to gain a business qualification. He passed the graduation exam with flying colors and now has a degree in Business Administration. Both staff and management appreciate his utter dedication and strong determination. ■



We've got an exhibit for you at:

IZB
in Wolfsburg



Visit us at the IZB international supplier fair in Wolfsburg! The IZB is Europe's leading trade show for the automotive supplier industry.

October 10-12, 2012
Hall 7 Booth 110

Motek
in Stuttgart



Visit us at Motek 2012 — the international trade show for automation, assembly and handling technology.

October 8-11, 2012
Hall 7 Booth 7110

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Wider use of color in thermal transfer printing

Two-Color Printing in a Single Step

cab's XC series of thermal transfer printing systems create new perspectives in the field of product labeling.

Two consecutive thermal transfer printing units allow two colors to be printed simultaneously. The first printing unit is equipped with an automatic foil saving function, and the user is always able to use various color combinations. The XC4 and XC6 meet all the new GHS requirements for chemical classification and labeling systems. In addition to this type of labeling, two-color safety labels and special warning or advertising information can be produced quickly and at low cost.

The machines have a stable metal housing made of cast aluminum, and are the only models equipped with a 300 mm unwinder for large rolls of

material. This ensures efficient work, because the user doesn't have to load material as often. The labels and film supply can be easily monitored through a large viewing window. Both printer heads have 300 dpi resolution, and the printing speed can be varied between 30 and 125 mm per second. On the XC6, the printing width is 162.6 mm, and the maximum material width is 180 mm. The XC4 model prints 105.6 mm wide, and the maximum material width is 120 mm. Both devices allow easy installation of the transfer belt, thanks to three-part tension axes. The system produces reliable print quality that you can count on. ■



WT2380 with an excellent price-performance ratio

Latest-Generation Thermal Transfer Ribbon

The new WT2380 thermal transfer ribbon is to a thermal transfer printer what an ink cartridge is to a fountain pen and an ink ribbon to a typewriter: An indispensable refill.

Nonetheless, not every thermal transfer ribbon is equally suited for each application. For this reason, Wölco mainly uses high-quality resin or wax-resin based ink ribbons.

The Wölcotherm 2380 expands our portfolio with a premium wax-resin ink ribbon for price sensitive market segments. The WT2380's features are comparable to those of the WT2310, but its price is about 20 percent lower. The WT2380 can be used universally and has a good wipe and scratch

resistance. It is suitable for printing on paper, coated papers and selected plastic films, such as PET and PP. Ask us for samples, so that you can view the quality of this innovative ink ribbon for yourself: Contact our staff — they'll be glad to provide comprehensive advice. ■





Special label withstands heat and cold

The Long Road to an ID Label

AW North Carolina — a recognized partner to the automotive industry and a system supplier to Toyota — was looking for a solution for labeling transmission parts. At first, the task sounded simple: Monitoring product parts during and after the manufacturing process, right up to the vehicle installation, so as to comply with legal and country-specific regulations.



For this application, Woelco Labeling Solutions (WLS) supplied a special label with extreme adhesion characteristics. However, before the label was

used, it had to survive a wide range of durability tests. This meant chemical resistance tests to determine its ability to withstand various substances, such as gasoline, greases, alcohols, oils and antifreeze. Then came thermal resistance tests to see if the label could stand up to the cold of Siberia, as well as to blistering heat in various extreme temperature cycles. In addition to the car manufacturers' strict requirements, AW had developed its own test conditions. This meant that

the WLS label had to go through a demanding temperature chemical wash test.

With access to thousands of material combinations, WLS arrived at a solution that met all requirements. Now the rear suspensions of the Tundra, Sequoia and Tacoma vehicle series are marked with this special label from WLS.

For the next generation of the Toyota Camry, WLS will also be supplying the labels for the front suspension. ■

Long-lasting, top and bottom

Outdoor Labels for Extreme Conditions

As a manufacturer of all types of floor mats, Logo Mat Central of Cedar Grove, New Jersey, set the bar high. Labels had to bear important company information that would stay legible for life.

This was to ensure that customers would always know who to go to if they discovered a defect. It would also make it simpler to replace used products, because the customer would have all the information about the manufacturer. This would make repurchasing a lot easier.

Floor mats generally have a short life cycle because they are used under tough conditions that test their durability. Extreme weather, rain, snow, and even stagnant water are hard on even the best material. Then there is the wear, as shoes slide the mat back and forth — a factor not to be taken lightly.

Because of these tough demands, Woelco Labeling Solutions developed a material of the newest kind. The special adhesive has to permanently stick to the back of the floor mat, so that external influences don't damage it. The adhesive binds better to the vinyl underside of the mat, thus ensuring optimal durability. WLS was also able to use a better printing process that allows the printed information to remain legible for the life of the mat. Thanks to a laminate design, the printed information even holds up when the mat slides on abrasive surfaces. These two important product improve-



ments allowed WLS to fully meet the floor mat manufacturer's requirements and resulted in complete customer satisfaction. ■



Wölco Labeling China celebrates its 5th anniversary

Continuous Growth is the Key

For five years now, WLC has been an important factor in labels and labeling technology on the Chinese market.

On December 3, 2011, the company held a big anniversary party at its Chinese headquarters in Changzhou. Official guests, including government representatives, customers and part-



In his speech, the deputy secretary of the CPC Working Committee WIZ, Mr. Luo Wenxiang, praised the company's development, which is setting new standards for labeling.

Under German management over the past four years, WLC has experienced 60 percent annual growth and has continuously expanded its stock of machinery. The company has a low employee turnover and an outstanding quality that are convincing factors on the Chinese market. ■

ners, were treated to a bright mix of information and entertainment. Drums and loud fireworks chased evil spirits from the company, and an ice sculpture with the company logo inspired visitors.



5 Year WLC



One system takes over several labeling jobs

Robots Provide Extreme Flexibility

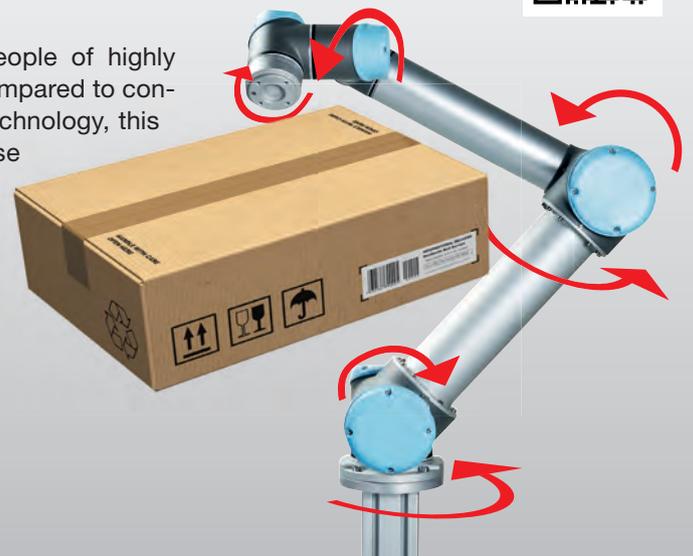
Wölco recommends a very unique robotic labeling system to all business customers, who want fast, flexible and easy product labeling in several steps.

A robot arm can pick up labels at various locations and can apply them on the product in different positions. The robot can even be used to apply a combination of individually printed labels and laminate film.

In its dimensions and speed of movement, the resiliently flexible lightweight robot is based on a human arm. One special feature is that the robot is very safe when in physical contact with users, so it can be used in the immediate vicinity of people. Thanks to intuitive programming, the robot can be set up very quickly. Not only that. The robot can also work hand-in-hand with employees, without the need for additional protective gear.

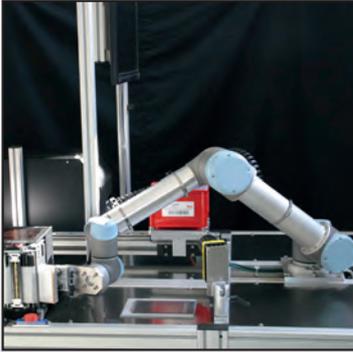
It can thus relieve people of highly monotonous work. Compared to conventional robot-arm technology, this robot's low purchase price and operating cost allow fast depreciation of the investment. The arm is an excellent supplement to traditional dispensing systems. ■

Go right to the robot system

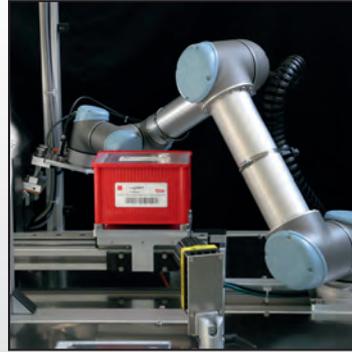
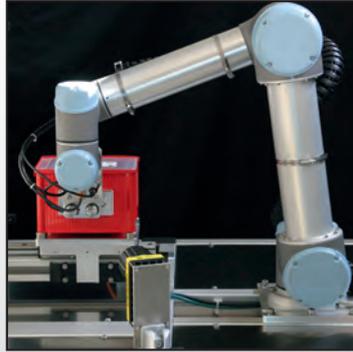


| Technical data | Wölco Lupo PA-60 |
|-------------------------------------|--|
| Label dimensions | 5x5 mm to DIN A4, depending on application. Depends on the printing or dispensing system used. |
| Number of labels | Depends on supply |
| Label type | Product should be standing; application of labels |
| Programming | Graphical user interface Input through a 12" lightweight touchscreen |
| Electrical supply | 200-240 VAC 50-60 Hz |
| Compressed air | 6 bar |
| Working radius / range | 850 mm; 6 rotating joints ($\pm 360^\circ$ rotation) |
| Weight of robot arm / load capacity | 18 kg / 5 kg |
| Dimensions | 1200 (W) x 800 (L) |
| Total weight of system | approx. 100 kg |

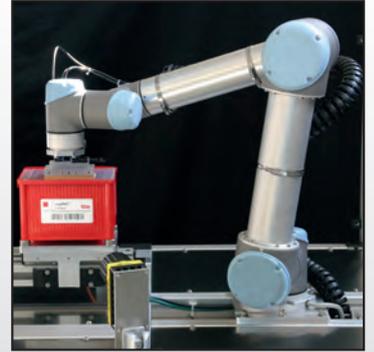




Side application of label A

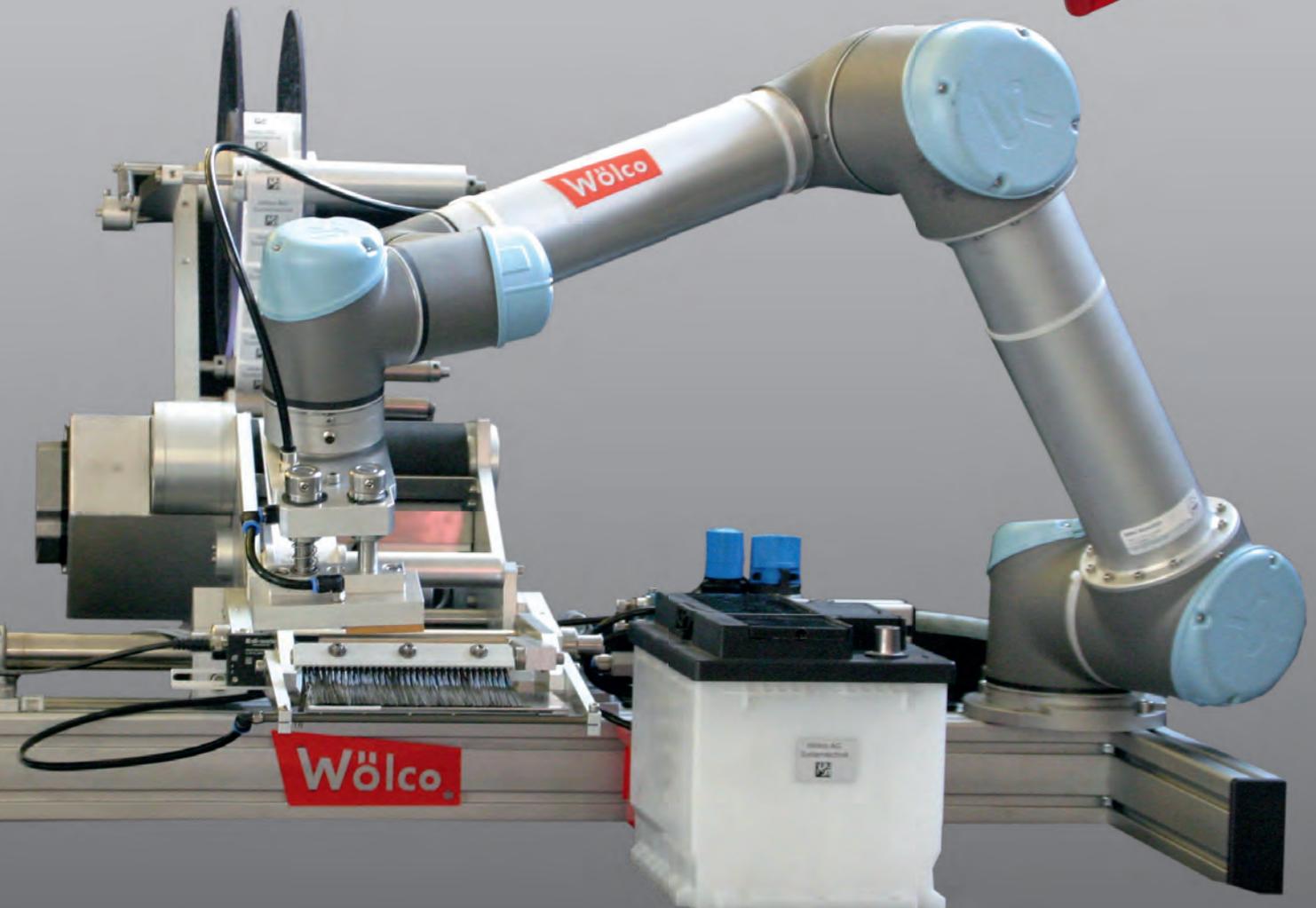


Top application of label B



Robot system

- Multiple labeling with a single robot system
- Flexible label positioning
- Fast, easy integration into existing production lines
- Compact system with low space requirements
- Simple, user-friendly programming
- Extremely low noise: No disturbing robot noise
- Enclosure-free operation that complies with machine directives
- Optional: Products can be handled by robot arm





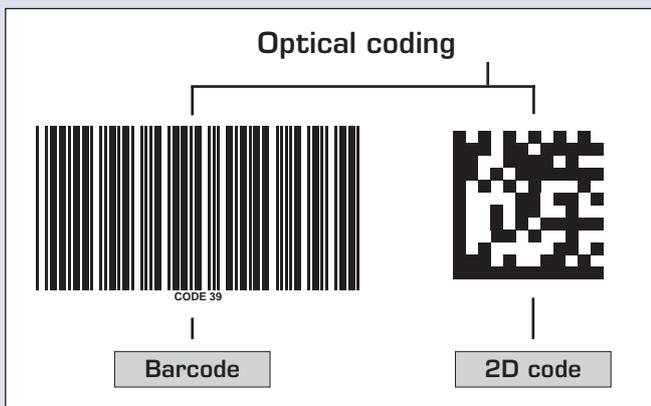
Barcode / 2D Code Technology

Basic principle and operation

A barcode is an optically readable code that allows machines to quickly scan, capture and read printed data. It consists of parallel bars of varying widths, i.e. lines and spaces. Here, the meaning of “code” does not come from “encode.” Instead, it refers to the representation of data as binary symbols. Barcodes have existed since 1949, but those most common today were developed in the 1970s. They include types such as EAN/UPC, Code 39, Code 2/5 interleaved and Codabar.

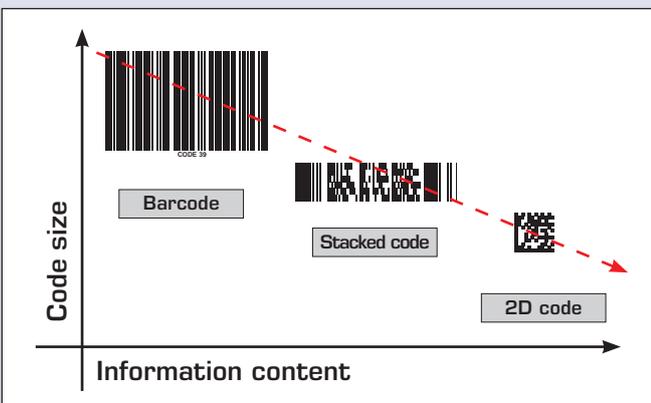
A barcode system consists of three basic components:

- a barcode or 2D code applied to an object (product) to be identified
- a barcode scanner (reader) or a 2D code imager (2D code scanner or imager)
- the unit transmitting communication to a computer



Alongside these, the technical requirements for a number of other codes were developed. These are called 2D codes (two-dimensional codes) and are a further development of 1D linear barcodes. The term “2D code” derives from its two-dimensional representation of data. This differs from 1D codes, which provide data only one-dimensionally on the X-axis. There also is a distinction between stacked codes (stacked barcodes) and matrix codes. The latter’s development began in the late 1980s, and the best-known matrix codes are PDF417, DataMatrix, MaxiCode, QR code and Aztec code.

Barcodes and **2D codes** are usually applied to labels with a barcode printer. However, they can also be applied to packaging or products with an inkjet printer or printed along with the packaging. The code to be used depends on many factors. These include the quantity of data, space requirements, orientation, the product to be identified, the scanner distance and much more. Codes must therefore be evaluated for each application. Ultimately, this is dictated by the industry or the user.



Barcode scanners and **2D code imagers** scan or read many types of bar or matrix codes. Scanning is always optical. Beams sent by a light source are reflected differently by the bars and surfaces. The scanner records the reflections and decodes them for evaluation. With laser scanners or CCD cameras, the code can be captured from a given distance, either while moving or standing still.

The main difference between linear barcodes and 2D codes is that the barcode itself contains no information, just a reference to data such as an item number. Therefore, it only makes sense in the context of a database. On the other hand, 2D codes contain actual information.

Communication transfer to a computer takes place through standardized interfaces. The data can be transferred through cables, infrared connections, WLAN (Wireless Local Area Network), GSM/GPRS and/or Bluetooth. Mobile data capture systems can communicate in both directions over wireless systems. ■



Special adhesive technology makes labeling invisible

Bothersome Air Pockets Disappear Like Magic

A new type of self-adhesive film “clings” to smooth, even surfaces, offering a solution for many applications.

As a protective membrane for sensitive surfaces or a transparent printable label for visually high-quality products, it is almost invisible. The transparent polyester protective film, with a new type of self-moistening adhesive, can solve tough labeling problems almost on its own.

Applying a film couldn't be easier: Unlike other self-adhesive films, it doesn't require meticulous application or use of a squeegee. Thanks to its special self-moistening adhesive, the

film clings to any smooth, even, properly cleaned surface - bubble-free and almost by itself. Once completely applied, it holds reliably. If necessary, however, it can just as easily be removed or repositioned.

Because it is highly transparent, the film is suitable for protecting sensitive surfaces from scratches and other traces of use. Such surfaces include operating panels and touch displays on production systems, on machines or at exhibition stands. Furthermo-

re, the self-moistening film offers an elegant solution for labeling products that have a high-quality look: The film can be printed using all standard processes and remains virtually invisible in the unprinted areas. ■

Main features of the 3005 15 00 adhesive material:

- Highly transparent 50 µm polyester film
- Adherent and removable at the same time
- Special, self-moistening adhesive for bubble-free application
- Can be printed with standard processes

Applications:

- Protecting sensitive surfaces from scratches and other traces of use, including operating panels and touch displays on production systems, at exhibition stands, on machines, etc.
- Elegant labeling of user instructions or tracking of goods, for example, for products with a high-quality look.





Secure labeling for boxes

Labels for Varnished Surfaces

Nowadays, supply chains and logistics have greatly improved due to simpler tracking of materials and finished goods. New guidelines are the driver of this development.

Tracking starts with the raw material, continues through primary packaging and product labeling, goes on to secondary packaging, all the way to palletization and shipping. The high demands on such labels make constant development of adhesive materials a must. The new 1107 1000 label material meets these extreme requirements. The adhesive is specially designed for high temperatures, such as those encountered in container transportation. In upper storage areas, temperatures as high as 80°C (176°F) are not unusual. Even UV radiation doesn't weaken the adhesive's

core properties: The adhesive is long lasting fast, and the label won't fall off. This material's main application is labeling varnished boxes for consumer products. The varnish beautifies such packaging and makes it moisture resistant. However, the tightly sealed surfaces of the boxes make labeling problematic, so adhesion often leaves something to be desired. Simply test the attached sample label on your own boxes and see for yourself the quality of the new generation of adhesive labels for varnished product packaging. ■



Overview of technical product information:



Stick sample labels here!

Please request from:
info@woelco.com