PRODUCTION LINES AND TECHNOLOGY

Nexans Production Lines and Technology is a division of Nexans Deutschland GmbH and reports on the European group level as part of the Nexans Superconductor Activity and Nexans Deutschland GmbH generally. With more than 60 years of industry experience PL & T, with a team of around 30 specialists in Hannover, offers a wide range of machines and services from local to multi-national level.

Following a long tradition of development, design and production of special machines for cable and pipe manufacturing in Hannover PL & T has established a competence center in Hannover providing a portfolio from special machinery, automation, welding technology and technical service. With our UNIWEMA® equipment for the continuous forming and LASER/TIG welding of smooth or corrugated metallic cable sheaths or tubes we handle Cu, Al, St, SSSt and metal alloys operating in a range of 0,06 mm - 2,5 mm in wall thickness and 2 mm - 650 mm in diameter.

Our additional component portfolio comprises pay-offs, take-ups, taping machines, various forming and reduction tools, different types of belt and caterpillar capstans and many more. For continuous production we provide the necessary solutions, such as cross welding units and accumulators as well as automation concepts.

The real challenge is in the continuous cable or tube production as well as innovative manufacturing methods and technologies in different markets and applications.
Global Competence in Machinery

Your partner for:

SPECIAL MACHINERY
We offer special machinery from customized machines and components to complete production lines. One of our key products is our standard UNIWE-MA® production line for continuous forming, welding and corrugation of metal cable sheaths and tubes.

AUTOMATION
PL & T performs mechanical and electrical upgrades as well as integration of special solutions in existing production facilities and processes. We provide state-of-the-art control systems for efficient production.

ADAPTING TO CUSTOMERS NEEDS
As your partner for service, engineering and R & D we constantly advance our technology to improve and secure the performance of your production. This includes decreasing the cost per unit, increasing the production speed and enhancing the energy efficiency.

TECHNICAL SERVICES
PL & T provides a range of services that including project planning, complete operation, production engineering, prototype manufacturing, sample trials and assistance in research and development processes.

WELDING TECHNOLOGY
We have a wide-ranging knowledge for continuous welding processes for Copper, Aluminum, Steel, Stainless Steel and metal alloys. This key competence reflects welding ranges within TIG welding (DC/AC) as well as the operation using various LASER types as CO₂ and Nd:YAG. Our latest innovation is a welding machine equipped with a Diode LASER.
SPECIAL MACHINERY
- **Special machinery** starting with customized components up to complete production lines.
- **Standard UNIWEMA® machines** for cable and pipe manufacturing.

AUTOMATION
- **Automation solutions** comprising control and handling systems for manufacturing processes in different markets and applications.

COMPONENTS
- **Accumulator units** comprising a wide range of strip and cable/wire storage to assure continuous production process.
- **Forming tool sets** with various types of roller guiding and sliding tools in plastic and metal design.
- **Reduction tools** comprising various stages with customized turk-heads or drawing dies due to your application.
- **Capstans** realizing different types of high-precision belt and split-clamp as well as disc capstans.
- **Corrugation units** for forming of helical and annular products up to 650 mm diameter.
- **Pay-offs/Take-ups** as integration of driven and non-driven winder units.
- **Taping machines** comprising a wide range from stranding machines up to cable and foil winder units.

WELDING TECHNOLOGY
- **Welding systems** as integration of welding components and solutions with TIG and LASER.
- **Polyarc Toploader** with new design for optimized set-up process and continuous production.
- **Crosswelding units** in innovative design, semi-automatic, adjustable in size and configuration with TIG or LASER.

SERVICES
- **Feasibility studies** on customer demand using modelling as well as laboratory machines.
- **Commissioning and Service** on-site at customer’s instance.
The UNIversal WElding MAchine is a production line for the continuous forming, welding and corrugation of smooth or corrugated metal sheaths and tubes.

In this process, a metal strip is introduced into the line and, in a single operation, the strip edges are trimmed and the strip is formed into a tube or placed around a cable core. The opposing strip edges are longitudinal welded by means of LASER or TIG welding.

A belt type caterpillar or a split clamp caterpillar capstan pulls the tube or the sheathed cable through the machine and if additional flexibility is desired, moves it to the corrugator.

Possible applications using our UNIWEMA® process:

**Cable applications**
- for OPGW (Optical Ground Wires)
- for RF (Radio Frequency Cables)
- for HV (High Voltage Cables)
- for Power, Control and Instrumentation Cables
- for Submarine Cables
- for Bonded Sheath in Power Cables

**Tube applications**
- for Micro Tubes
- for Multilayer Plastic Metal Tubes
- for CFMT (Corrugated Flexible Metal Tubes)
Order execution program for turn key projects
We offer our customer an order-related process of the entire machine project. Thus we can ensure the required scope of supply, quality, cost frame and scheduling from the beginning of the project to the final acceptance at customers premises. We assemble the total line in our laboratory, check all individual components and perform a pre-acceptance test with the customer.

Engineering & Consulting
The machine components, especially the electrical system are engineered to current industry standard. With service frame contracts, preventive maintenance as well as delivery of adequate wear and spare parts we can assure a high availability of machines. Additionally we offer on-site consulting in order to improve and secure the performance of your production.

Design to Customer needs
Our design specialists are trained to design the machine and the components to market and customer needs, using three dimensional CAD and latest software technologies.

Process & Product development
Using our laboratory lines we are constantly working on the improvement of the manufacturing process and development of new products. Together with our customer we perform sample trials for the product and process qualification as well as manufacturing short cable or tube lengths for the start-up of a serial production.
Latest Highlights

- Cu welding line for the inline manufacturing of submarine cables.
- Medium voltage bonded sheath line equipped with cross welder and strip accumulator for continuous production.
- Upgrade of existing UNIWEMA® production lines by integration of an electrical equipment and a welding unit.
- Trials and engineering for high-strength-steel pipes.
- Project management for industrial projects to extend capacity.
- Development projects for forming and LASER-welding of new and thinner materials.
- Trials for reliable cross welding of copper strip material.

Process and applied Key Competence in welding of metal

- Delivery of more than 30 machines, equipped with CO₂, LASER, Nd:YAG LASER and the new disc LASER generation.
- Development and delivery of LASER, TIG and Ultrasonic cross welding machines for the automatic splicing of coated and blank metal strips.

World market leader for production lines of Fibre In Steel Tubes (FIST)

- Delivery of 16 UNIWEMA® production lines for the manufacturing of stainless steel micro tubes for optical ground wires (OPGW).

Machinery for the Cable & Wire Industry

- Delivery of 220 UNIWEMA® machines for cable sheathing and metal tubes.
- Delivery of certain components for the inline manufacturing of special cables.
- Peripheral equipment as pay-offs, take-ups, various forming and reduction tools, different types of belt and caterpillar capstans.
- Delivery of automatic colour band marking machines for plastic insulated wires.
- Delivery of high speed screening and Stranding machines.
- Delivery of SZ cabler for power cables.

A detailed reference list is available on request
Production Lines and Technology is the special machinery division of Nexans Deutschland GmbH. Nexans Germany is one of the leading cable manufacturers in Europe. The company is offering an extensive range of high performance cables, systems and components for the telecommunications and energy sectors, rounded off by superconducting materials and components, Cryoflex transfer systems and special machinery for the cable industry. The full integration into the Nexans Group Nexans Germany also benefits from excellent opportunities to use the available synergies in all corporate fields, which not only applies to worldwide projects but also to research and development, the exchange of know how, and to other areas.