



Press Release for JEC 2012
9 March 2012

Temperature control systems support manufacturers of composite products

SINGLE exhibits hot-water temperature control solutions for large-scale production of composite components at JEC 2012

At JEC, which takes place from 27 to 29 March, 2012 in Paris, SINGLE Temperiertechnik GmbH of Hochdorf/Germany is presenting highly efficient hot-water temperature control systems for temperatures up to 225°C. Fluid-based temperature control facilitates the large-scale production of composites. Technically superior and more energy-efficient, this method has already become established as an alternative to outdated and insufficient oil and electric heaters, and ovens. This approach offers interesting potential particularly for the aerospace and the automotive industry with an interest in producing components with reproducible properties within minimum cycle times. This requires defined process conditions, which means clearly defined temperatures inside the cavity.

Temperature control of moulds provides composite producers with new potential for process optimisation and sustained energy cost reduction. Thermoset matrix materials cure as they react to heat. This reaction requires a substantial amount of thermal energy and temperatures mostly in excess of 100°C, often even 200°C and higher. Cycle times can last from a few minutes for smaller automotive parts up to many hours, e.g. for wind turbine rotors. Used for mould-specific methods of composite structure production, active mould temperature control boosts process stability and increases production efficiency and speed. Temperature control with heat transfer media is a reliable and cost-efficient solution that has been widely established for many plastics processing methods for decades.

SINGLE caters to producers of composite components which use application-optimised temperature control systems. "Even the high processing temperatures required by the composite industry do not eliminate the use of water as a heat transfer medium. Water provides a significantly higher heat transfer capacity thanks to its high specific heat and heat transfer properties, which are superior to those of oil", says Kip Petrykowski, Business Development Manger Composites, SINGLE Temperature Controls, Inc., USA. SINGLE water-operated systems have been used successfully above the atmospheric boiling point for many years.

The new hot-water temperature control solutions are particularly beneficial for manufacturers of composite components. At JEC 2012, SINGLE is presenting various temperature control systems with water as a circulating medium, some of which have a wide capacity range for temperatures up to 200°C, as well as

compact hot-water temperature control systems for temperatures of up to 225°C. Temperatures of up to 350°C are handled by SINGLE oil-based temperature-control systems.

Benefits of fluid-based temperature control versus autoclave-based or inductive and electric heating

Fluid-based temperature control of moulds has many obvious benefits over the widespread method of curing composite components in heated ovens. Ovens make part handling very complicated, the process is highly time-consuming, the quality of process control is not satisfactory and the cooling phase does not offer any room for active support. Hence, oven-based methods are very expensive.

Fluid-based temperature control is also vastly superior to inductive or electric mould heating methods for composite production as they handle significant temperature variations quickly and smoothly. The need for complex equipment is a major disadvantage of inductive heating, as are the substantial costs and the lack of flexibility for different process configurations. Like electric heating, inductive heating does not allow for sufficient process control. For processes that require alternating temperatures, i.e. heating and active cooling, inductive or electrically heated moulds must be equipped with cooling channels for fluid-based temperature control anyway.

Additional benefits of active alternating temperature control

Thermoplastics composite moulding can benefit from active alternating temperature control SINGLE ATT (Alternating Temperature Technology). ATT is recommended for processes that require fast temperature variations within the cycle time. Within seconds, ATT switches between two circuits with cooling fluid of different temperatures and actively heats or cools the mould. This approach ensures that the mould used for composite production is cooled down during the filling phase and heated up during the curing phase. SINGLE offers an extensive system range for alternating temperature control up to 350°C.



*SINGLE hot-water
temperature control system for
media temperatures of up to
225°C*

*Photo by SINGLE Temperier-
technik GmbH,
Hochdorf/Germany*



SINGLE at JEC 2012: Stand W46
Partner stand of the federal state of Baden-Württemberg

SINGLE in profile

SINGLE has been developing, producing and selling high-performance temperature control systems for more than forty years. The company's product portfolio consists of water and oil-operated, high-quality temperature control systems, cooling technology as well as tailor-made and customised solutions. SINGLE uses only top-quality components and materials. Long-standing customers testify to the ease-of-use and the reliable operation of SINGLE systems even under a high workload.

SINGLE offers a complete standard range of oil- and pressurised-water operated systems with maximum heating capacities of 144 kW and temperatures of between -40°C and +350°C. In addition to this, SINGLE provides extensive engineering and caters to all phases of the process chain with systems from one source – from initial product conception, design, production and final assembly of temperature control technology systems right through to the installation's initial operation.

In addition to plastics processors and manufacturers of plastics processing machines, SINGLE caters to customers in the die-casting, chemical and pharmaceutical industry as well as to the metal plating industry, the food production segment and is used for test bench technology and many more applications.

A network of regional sales partners and service points as well as subsidiaries in the US and China are the cornerstones of SINGLE's international presence. Services and after-sales support on all temperature-control related matters, commissioning and on- and off-site training complete SINGLE's portfolio. SINGLE is certified to EN ISO 9001:2000, has technology and manufacturer certifications that meet the European Pressure Equipment Directive (PED) and complies with standards such as UL and regional directives to CSA and GOST.

The company, which employs about 110 people at its facility in Hochdorf near Stuttgart/Germany, has been a member of Looser Holding AG of Arbon/Switzerland since 2006.

Company contact

SINGLE Temperiertechnik GmbH
Ostring 17-19
73269 Hochdorf
Germany
Phone: +49 7153 3009-0
Fax: +49 7153 3009-50
Email: info@single-temp.de
www.single-temp.com

Press contact

Lüling Marketing GmbH
Stephanie Gellersen
Luitpoldstr. 5
91207 Lauf an der Pegnitz
Germany
Phone: +49 9123 9609-14
Fax: +49 9123 9609-29
Email: gellersen@lueling-marketing.com
www.lueling-marketing.com

