LIBA Multi Compact Fabric – Ein neues Textil stellt sich vor

Stuttgart 18.09.2013
Content

- Company profile
- Multiaxial structures
- Applications
- MAX 4 technology
- Multi Compact Fabrics
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Company profile
Facts and Figures

- Family business in 3rd generation
- Head office in Naila / Germany
- 365 employees in Naila / 420 employees worldwide
- 50 employees in R&D
- Service and Sales subsidiaries in China and USA
Company profile

Our philosophy

- Continuous strengthening of R&D leadership
- Establishment of development partnerships
- Worldwide expansion of service competence
- Consistent and permanent development of new markets and applications
Company profile

Our competence

- More than 25 years experience with multiaxial technology
- More than 25 years experience of manufacturing carbon, glass and aramid fabric
- More than 10 years experience as a development partner in automotive, aerospace and wind energy industries
- Over 200 multiaxial machines installed worldwide
- Individual cooperation
Company profile
Milestones

Karl Liebrandt established LIBA
First raschel machine produced
Product launch MAX 3


First tricot machine produced
Start multiaxial technology development
Product launch MAX 5
Company profile

Our competence

Fiber reinforced composites: process chain

- Carbon fiber
- Textile reinforcement
- Preforming/Tayloring
- Structural part

- Woven fabric
- Non crimp fabric
- Braid
- etc.

Produced on LIBA machines!

know-how competence know-how know-how
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What are multiaxial fabrics?

Multiaxial fabric consists of one or more layers of differently aligned held in place by a stitching yarn.
Multiaxial fabrics

Why multiaxial fabrics?

Woven fabric
- Yarns bend over each other (= web crimp)
- Indirect utilization of fiber strength
- Only 0°/90° directions possible

Multiaxial fabric
- Yarns remain straight, no crimp
- Direct linear utilization of fibre strength
- Different angles/ more then two angles in one fabric possible
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Applications

Application for the industry

- Wind power
- Lightweight construction
- Passenger transportation
- Sporting goods
Applications

Applications for us

CFK pultrusion

CFK winding
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weft insertion system:

- 2 different weft insertion mechanism
  - Endless weft insertion (MAX 4) – Processing of rovings
  - Finite weft insertion (MAX 5) – Processing of Tapes
    (online or offline spreading of these Tapes)
  - one weft insertion system for each angular position
MAX 4 technology
Compact machine design
MAX 4 technology
Flexibility

12°
MAX 4 technology

Less energy consumption

- Consumption measurement, global and for select machine parts, using special consumption measuring devices
- Analysis of the temperature balance to assess heat, globally and for select machine parts, using thermal imaging and temperature sensors

Energy saving up to 15 %
MAX 4 technology

X-Y-Portal
MAX 4 technology
X-Y-Portal

Weft carrier
Y – axis

Portal axis
X – axis
NEW – X – Y - Motion:

⇒ optimized motion of weft carrier & shogging rake
⇒ while shogging, weft carrier can start movement in Y – direction
⇒ while shogging holding down bar can go up
⇒ no speed limit regarding pneumatic drives
⇒ no 90° movement necessary
MAX 4 technology

Working area
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Multi Compact Fabrics

What are MCF?
Multi Compact Fabrics

What are MCF?
Optimization of setting time / Customer request

from subrectangular 100“ working width

to quadratic 200“ working width
Thank you for your attention!

Questions?

LIBA Maschinenfabrik GmbH • Oberklingensporn • 95119 Naila • Germany

Tel.: +49 (0) 9282 67 0 • Fax: +49 (0) 9282 5737 • Email: info@liba.de