



AUTOMOTIVE ENGINEERING

Technological changes in automotive engineering

How ARBURG supports you!

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PROJECT ENGINEER TURNKEY

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ARBURG AUTOMOTIVE

- Trends and changes
- Application examples
- ARBURG competence
- Summary and discussion



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TRENDS AND CHANGES

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TRENDS IN THE AUTOMOTIVE INDUSTRY



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Photo: ARBURG



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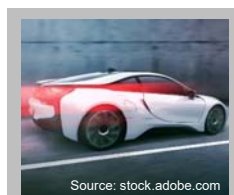
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CHANGES AND INNOVATIONS



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CURRENT TRENDS – OVERVIEW



Rapid technical development



Short product lifecycles



Growing number of variants



Customer-specific, personalised products

Production efficiency

Cost pressure

Minimising set-up times

Amortisation

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APPLICATION EXAMPLES

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INJECTION MOULDING – EFFICIENT IMPLEMENTATION OF INNOVATIONS



Lightweight construction
Foaming and compounding



E-mobility and lightweight
Overmoulding of inserts



Functional design
In-mould film lamination

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INJECTION MOULDING – EFFICIENT IMPLEMENTATION OF INNOVATIONS



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LIGHTWEIGHT CONSTRUCTION – RETHINKING EFFICIENT PRODUCTION

- Reduction of part weight
- Minimisation of sink holes and distortion
- Efficient reduction of material use

ProFoam foaming process

Customer Center

Fibre Direct Compounding

Customer Center



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INJECTION MOULDING – EFFICIENT IMPLEMENTATION OF INNOVATIONS



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Functional design
In-mould film lamination

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INSERTS – PRECISE COMBINATION OF INNOVATIVE MATERIALS

- Handling of delicate parts
- Simultaneous process steps
- Maximum process control



Overmoulding of
inserts

Hall 22

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APPLICATION EXAMPLE – MAIN FUSE BOX

Hydraulic ALLROUNDER 820 S 4000-2100

- Housing for power supply in vehicle
- Adapted robotic technology
- Central SELOGICA control system
- Fully automatic preparation and finishing



Cavities	1 - 4
Cycle time	40 [s]
Material	PA6-GF10

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APPLICATION EXAMPLE – MAIN FUSE BOX

Fully automatic insertion and parts handling

- Preparation of inserts
- Insertion and removal
- Selective set-down



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APPLICATION EXAMPLE – MAIN FUSE BOX

ALLROUNDER 820 S 4000-2100

Cycle time	[s]	40
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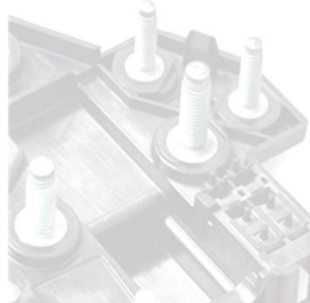
- Perfectly coordinated automation and peripheral equipment
- Fast cycle and set-up times
- Complete turnkey solution from a single source



INJECTION MOULDING – EFFICIENT IMPLEMENTATION OF INNOVATIONS



Lightweight construction
Foaming and compounding



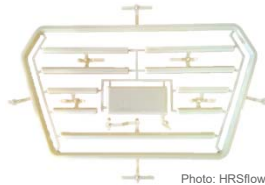
E-mobility and lightweight
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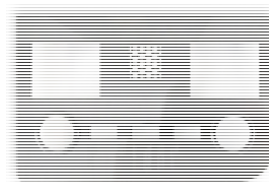
Functional design
In-mould film lamination

VISIBLE PARTS – HIGH-QUALITY IMPLEMENTATION OF FUNCTIONAL DESIGN

- High surface quality
- High design variety
- Many application possibilities



Radiator grille
Hall 08



Light screen for cockpit interior
Customer Center

APPLICATION EXAMPLE – 3D TOUCH PANEL (FIM)

Hybrid ALLROUNDER 630 H 2500-800

- Production of 3D curved surfaces
- Several product variants



Cavities	2
Cycle time	76 [s]
Material	PMMA

APPLICATION EXAMPLE – 3D TOUCH PANEL (FIM)

Efficient clean room production

- ALLROUNDER docked to clean room
- Entire handling with six-axis robotic system
- Electrical function test of the finished parts



Photo: Höfer und Sohn

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APPLICATION EXAMPLE – 3D TOUCH PANEL (FIM)

Hybrid ALLROUNDER 630 H 2500-800

Cycle time	[s]	76
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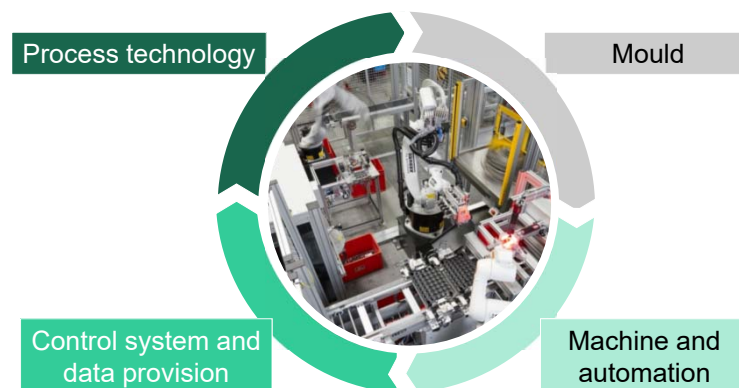
- Automation and peripheral equipment perfectly tailored to the process
- Fully automatic production with high reproducibility
- A single partner – from conception to implementation



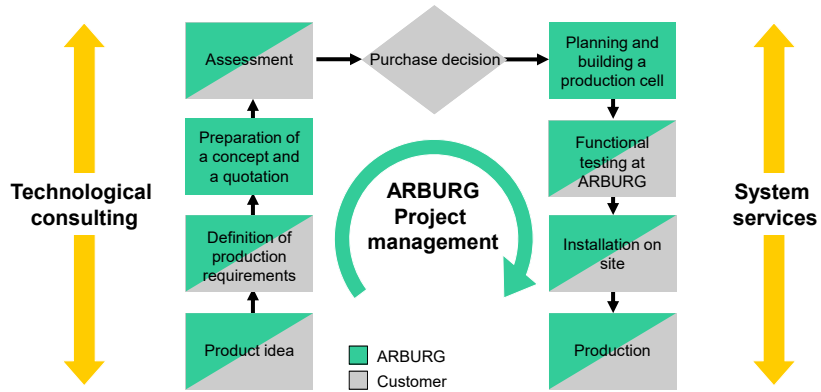
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ARBURG COMPETENCE

FOCUS: INDIVIDUAL TURNKEY SOLUTION



ALL-ROUND CAREFREE PACKAGE



SEAMLESS INTEGRATION INTO YOUR PRODUCTION



Flexible machine – Basic connectivity with OPC UA

Road to Digitalisation Efficiency Arena



ATCM – Production cell controls components autonomously



ALS – Current data accessible from anywhere

ATCM – ARBURG TURNKEY CONTROL MODULE

- Complex production
- High quality requirements and traceability
- Logging of alarms, malfunctions, operator entries
- Data provisioning to high-order systems

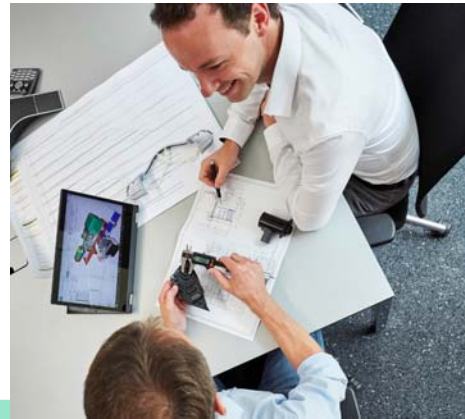
Spirit level exhibit
AM-Factory
Hall 22



SUMMARY AND DISCUSSION

ARBURG – YOUR TECHNOLOGY PARTNER

- **Transform**
Digitalisation is changing the world
- **Develop further**
Automotive sets trends
- **Rethink**
New processes – new possibilities
- **Increase efficiency**
Automation increasingly important



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YOUR EXPERIENCES – YOUR EXPECTATIONS

- Your experience of technological change in automotive engineering?
- Challenges for your company?
- Your expectations of ARBURG?



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