A global leader in modular machines for e-mobility

Company presentation, 27 February 2017
Highly experienced management team with decades of industry experience

Rolf Beckhoff
Chief Executive Officer
Sales and Administration
13 years at Aumann
Engineering and management degree

Ludger Martinschledde
Chief Executive Officer
Operations and R&D
25 years at Aumann
Engineering degree

Sebastian Roll
Chief Financial Officer
Finance and Controlling
17 years at Aumann
Business administration degree

Constantin Mang
Executive Vice President
Strategy and Business Development
2 years at Aumann
Business and law degree
An e-mobility revolution is underway

Global production of electric vehicles (“EVs”)¹
in million vehicles

Recent quotes

CARS 2025: CHANGE IN THE FAST LANE
The global automobile industry is entering a disruptive new era

Electro-mobility – a technological revolution in full force

Electric cars will be here sooner than you think

New sources of disruption ahead for the global auto industry

A watershed moment for the automotive industry

EVolution

Full electrification finally eliminates the business case of diesels

The countdown for disruption has already started

Source: Company information based on IHS data
1) defined as hybrid Vehicles (full and mild) and pure electric vehicles incl. range extender and fuel cell; rounded figures
Aumann’s focus is at the heart of e-mobility

Energy storage

E-motor

Rotor
Stator

Rotor/ Stator winding

E-drivetrain

Automation for mass production

Source: Pictures Tesla, Continental
Aumann at a glance

**Right business**

Fully automated e-drivetrain production lines ...

...based on modular machines and unique motor winding technology...

..leveraging know-how from special machinery of Aumann’s Classic segment

**Right capabilities**

80 years of winding experience

30 years partner of automotive OEMs

675 1) highly skilled professionals

5 locations in Germany, China and USA

32,000 sqm of shop floor

**Select customers**

**Strong growth**

Revenue 2) in million €

<table>
<thead>
<tr>
<th>Year</th>
<th>E-mobility</th>
<th>Classic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014A</td>
<td>96</td>
<td>42</td>
</tr>
<tr>
<td>2015A/ as-if</td>
<td>122</td>
<td>114</td>
</tr>
<tr>
<td>2016A</td>
<td>156</td>
<td></td>
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</table>

EBIT-Margin

<table>
<thead>
<tr>
<th>Year</th>
<th>E-mobility</th>
<th>Classic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014A</td>
<td>17%</td>
<td>9%</td>
</tr>
<tr>
<td>2015A/ as-if</td>
<td>190</td>
<td></td>
</tr>
<tr>
<td>2016A</td>
<td>190</td>
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</table>

Order intake in million €

<table>
<thead>
<tr>
<th>Year</th>
<th>E-mobility</th>
<th>Classic</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014A</td>
<td>83</td>
<td>139</td>
</tr>
<tr>
<td>2015A</td>
<td>141</td>
<td></td>
</tr>
<tr>
<td>2016A</td>
<td>190</td>
<td></td>
</tr>
</tbody>
</table>

Source: Company information based on IHS data,
1) headcount incl. trainees and temporary workers as of 2016 year end 2) incl. an acquisition with first consolidation in Nov. 2015; 2015 therefore shown as reported and as-if the acquired entities had been part of the group for the full year
Key highlights

1. Strongly growing with e-mobility revolution benefiting very early on

2. Unique winding technology leading to highly efficient e-motors enabling OEMs to scale up to automated mass production

3. Longstanding relationship with automotive OEMs and track record of jointly developing landmark e-drivetrain platforms

4. Growth model with high visibility supported by expanding margins and strong cash flow generation

5. Expansion strategy driven by highly experienced and successful management
The e-mobility revolution is driven by strong forces

**Technology Push**
- Cost decrease
- EV range increase
- Charging infrastructure densification

*Daimler will spend € 10bn on EV development*

**Regulation Push**
- Emission reduction
- Tax benefits and incentives

**Consumer Pull**
- Coolness factor
- Smart cars (autonomous driving)
- Environmental sustainability

*Tesla received around 400k paid reservations for model 3*

*Chinese legislation strengthens e-mobility with required share of EV’s starting 2018*

Source: Company information; Reuters.com; Süddeutsche Zeitung
Aumann’s machines will be needed by all contestants of the e-mobility revolution

“No matter who will prevail in the mobility revolution, they will want Aumann’s machines for e-drivetrain manufacturing”
The manufacturing process is core to the e-mobility revolution with machinery investments two years ahead of the production of EVs

The importance of machinery

"Where the greatest potential is - is building the machines that make the machine."

"[…] they will ultimately deserve an order of magnitude more attention in engineering than what they produce."

Machinery orders two years ahead

Source: Tesla Shareholder Meeting 2016 and press release; company information; pictures: Volkswagen I.D.
Aumann’s core markets and customers expected to grow significantly faster than the overall EV market

Aumann’s core regions growing faster
Production of EVs by regions (in million units)

Aumann’s core customers gaining EV market share
E-drivetrain production of selected OEMs/Tier-1s (in million units)

Total EV market
CAGR +29%
Core markets
CAGR +41%

Total EV market
CAGR +29%
Core Customers
CAGR +52%

Source: Company information based on IHS data
The number of traction motors and the number of sensors/actuators per car is expected to increase.

Increasing number of traction motors per car in million units:

- **Today’s car:**
  - ~30 sensors
  - <100 motors/actuators

- **Tomorrow’s car:**
  - >100 sensors
  - ~200 motors/actuators

Example: Active damper for suspension.
Aumann direct winding technology improves e-motor performance, weight and quality

**Less material / lower weight**
- Less copper wire - 50%
- Less electrical sheet metal - 30%
- Less space - 20%

**Less space**
- Reduction of winding head

**Higher energy conversion**
- Increased battery reach
- More efficient heat dissipation

“Our technology increases the performance per kilo of motor weight”

1) Material, weight and space savings specific to the pump motor shown on the left

Direct winding technology is critical to enable fully automated mass production

<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
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<tbody>
<tr>
<td>Direct winding technology</td>
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<table>
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<tr>
<th>Conventional Indirect winding technology</th>
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<table>
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<tr>
<th>Degree of automation</th>
<th>Process flexibility</th>
<th>Wire stress</th>
<th>Reject rate</th>
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<td>🟥</td>
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Source: Company information, Youtube video "Volkswagen e-Up Electric Motor Production"; https://www.youtube.com/watch?v=QgqtT85tMBA; Min 02.53
Comparison of processes relates to comparable motors
Aumann enabling transformation to industrial scale production

Production estimates for 2020
(example of VW-Group)
- HEV based on DQ platform – 0.3m
- HEV based on DL platform – 0.2m
- Further HEV – 0.1m
- Pure EV platform – 0.3m

Total EV and HEV – 0.9m

Production estimates for 2025
- EV/HEV 5.2m
- EV/HEV 2.5m

Examples of EV or Plug-In HEV production in 2015
- TESLA S – 51k
- Leaf – 43k
- BYD Qin – 30k
- Outlander – 30k
- I3 – 24k
- Volt – 16k

Direct winding technology
for mass production

Indirect winding technology
for small scale production

Source: Company information based on IHS data
Unique winding technology and longstanding automation experience leading to strong competitive advantage and positioning

Competitive landscape (schematic)

Source: Company information

Selected competitors, size of bubble represents most recently available relevant revenue data. Size is not representative of sales that are above € 1bn; not ordered within cluster; recent acquisition of DMG meccanica by Grob not incorporated.
Aumann R&D centre ensures early customer lock-in

Joint optimisation with customers on end-product and automated production set-up

Source: Company information
Close partnership with blue chip customers enabling Aumann’s e-mobility growth

Longstanding customer relationships...

Indicative cumulative orders last 25 years

- **> € 250m**
  - Relationship since 1990
  - thyssenkrupp

- **> € 250m**
  - Relationship since 1999

- **€ 200-250m**
  - Relationship since 1986
  - BMW

- **€ 75-100m**
  - Relationship since 1985
  - Volkswagen

...leading to an accelerated e-mobility business

- **E-mobility segment customers**
  - Automotive
  - Consumer electrics
  - Other industries

- **Based on experience in ICE drivetrain, automation and winding for non-automotive customers**

Source: Company information
Case study major German OEM: automated e-drivetrain production

- E-drivetrain platform (current)
  - Stator production lines
  - Hybrid module production lines
  - Fully automated process

- E-drivetrain platform (new)
  - Joint R&D with OEM
  - Patented new winding technology
  - Stator production lines

- E-drivetrain platforms (future)
  - Pure EV drivetrain platform
  - Next generation of plug-in hybrid drivetrain platform
  - Mild hybrid drivetrain platform

Aumann as valued R&D partner providing winding and automation for mass production of e-drivetrains

Source: Company information
Broad coverage of relevant landmark e-mobility projects

**CUSTOMERS (E-MOBILITY SEGMENT)**

- **Rotor production lines**
  - Early large scale EV platform in Europe
  - Aumann patent increased efficiency

- **Segmented stator production lines**
  - Aumann R&D/pilot production for premium OEM
  - Order for production line from Tier-1

- **E-bike motor production machines**
  - Early large scale e-mobility application
  - Enabled customer’s market leadership

- **Battery module assembly lines**
  - Aumann with proven battery module experience
  - High interest after Tesla’s Grohmann acquisition

Source: Company information
Case Study: Aumann enabled the growth of the market leader in built camshafts

Aumann as provider of innovative technology
...with joint development towards new applications
...leveraging ICE technology for e-mobility application

Source: Company information
Acceleration in order intake and order backlog...

<table>
<thead>
<tr>
<th>Year</th>
<th>Group Order Intake (€ million)</th>
<th>Group Order Backlog (€ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014A</td>
<td>83.2</td>
<td>50.2</td>
</tr>
<tr>
<td>2015A</td>
<td>141.2</td>
<td>98.1</td>
</tr>
<tr>
<td>2016A</td>
<td>190.1</td>
<td>132.2</td>
</tr>
</tbody>
</table>

CAGR +51% for Group Order Intake
CAGR +62% for Group Order Backlog

Book-to-bill ratio:
- Dec14A: 0.86x
- Dec15A: 1.16x
- 2016A: 1.22x

Source: Company information

1) Group order intake in 2015A comprises the acquired order backlog of acquired entities as of 1 November 2015 amounting to € 25.2m.
2) Calculated as order intake/revenues; 2015 compared with 2015 as-if revenues.
...drives strong revenue growth and increasing profitability

Total revenues
in € million

- 2014A: 96.1
- 2015A/2015 as-if: 121.7
- 2016A: 156.0

CAGR +27%

Adjusted EBIT
in € million and in % of revenue

- 2014A: 10.5
- 2015A/2015 as-if: 12.4
- 2016A: 19.3

CAGR +36%

Source: Company information; EBIT is adjusted for management fees to majority shareholder as described in appendix
Asset light business model with strong cash conversion

Adjusted EBITDA and operational CAPEX

in € million

Cash Conversion in %

92%

95%

85%

11.4

12.1

21.0

-0.9

-0.6

-3.1

2014A

2015A / *2015 as-if

2016A

Adj. EBITDA

Operational CAPEX

Source: Company information, 1) Cash Conversion: Calculated as (adj. EBITDA – operational capex) / adj. EBITDA, in %; 2015 based on actuals
E-Mobility with superior margins already accounting for 27% of revenues

Segment revenue 2016A in € million

<table>
<thead>
<tr>
<th></th>
<th>E-Mobility</th>
<th>Classic</th>
<th>% of total revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment revenue 2016A</td>
<td>42</td>
<td>114</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>73%</td>
</tr>
</tbody>
</table>

Segment EBIT 2016A in € million

<table>
<thead>
<tr>
<th></th>
<th>E-Mobility</th>
<th>Classic</th>
<th>EBIT-Margin in % of revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment EBIT 2016A</td>
<td>7.2</td>
<td>10.5</td>
<td>17.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9.2%</td>
</tr>
</tbody>
</table>

Source: Company information
Accelerating order intake supports future sales growth

### Sales Pipeline (selection)

**E-Mobility**
- Hybrid e-motor stator
- Mild hybrid motor for hybridisation of fleet
- Battery module and cluster production
- Pure EV e-motor rotor / stator
- Pure EV e-motor stator
- Hybrid gearbox manufacturing
- Battery bay for electric car
- Assembly for hybrid stator
- Hybrid e-motor stator

**Classic**
- Automated winding production modules
- Fully automated manufacturing of component

Source: Company information, pictures not linked to pipeline
Roadmap to market leadership in modular machines for e-mobility

- **Ramp-up capacity**
  - Expansion of production sites
  - IT hardware, licenses and projects

- **Expand globally**
  - Build up of USA/NAFTA activities
  - Expand facility in China
  - Further regional growth

- **Increase service share**
  - Build up R&D centre
  - Build up service hubs
  - Build up service sales teams

- **Maintain technological leadership**
  - Increase R&D activity
  - Develop new winding technologies
  - Build up know-how in peripheral processes

Source: Company information
No matter who will prevail in the e-mobility revolution, they will need Aumann’s machines for **electric drivetrain manufacturing**
Appendix
Aumann is well positioned to become e-mobility champion

- E-mobility focus
- E-mobility references
- Winding technology

- Automation know-how and production scalability
- E-mobility experience and process excellence
- OEM relationships

Source: Company information
Gert-Maria Freimuth  
*Chairman of the Board*

Gert-Maria Freimuth is the chairman of the board of Aumann AG. He is a **founding shareholder of MBB SE**, Aumann's majority shareholder. He studied economics and Christian social ethics at the University of Münster.

Christoph Weigler  
*Vice Chairman of the Board*

Christoph Weigler is the Vice Chairman of the Board of Aumann AG. He is **General Manager at UBER Germany**. After his studies in Germany, China and the USA, Mr. Weigler worked for various consulting firms on projects in the automotive industry.

Klaus Seidel  
*Member of the Board*

Klaus Seidel is Member of the Board of Aumann AG. He is **Chief Technical Officer of MBB SE** and is responsible for several MBB subsidiaries as well as the Processes and IT division. After studying business administration, he worked for Microsoft Germany until 1999.
Global capabilities and client locations

- Installed lines (selection)

- Espelkamp (Germany)
  - 5k sqm shop floor
  - 2k sqm office space

- Beelen (Germany)
  - 22k sqm shop floor
  - 3k sqm office space

- Berlin-Hennigsdorf (Germany)
  - 2k sqm shop floor
  - 1k sqm office space

- Changzhou (China)
  - 3k sqm shop floor
  - 0.8k sqm office

- Kansas City (USA)
  - Sales and Service

Source: Company information; approximate floor space figures including buildings under construction
### Financial overview

<table>
<thead>
<tr>
<th></th>
<th>2014A</th>
<th>2015A</th>
<th>2015A as-if</th>
<th>2016A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total revenues</strong></td>
<td>96,144</td>
<td>93,415</td>
<td>121,696</td>
<td>156,016</td>
</tr>
<tr>
<td><strong>EBITDA (as reported)</strong></td>
<td>10,660</td>
<td>11,242</td>
<td>12,820</td>
<td>20,146</td>
</tr>
<tr>
<td><strong>EBIT (as reported)</strong></td>
<td>9,743</td>
<td>10,190</td>
<td>11,461</td>
<td>18,448</td>
</tr>
<tr>
<td><strong>Adjustments</strong></td>
<td>780</td>
<td>824</td>
<td>901</td>
<td>875</td>
</tr>
<tr>
<td><strong>EBIT (adjusted)</strong></td>
<td>10,523</td>
<td>11,014</td>
<td>12,362</td>
<td>19,323</td>
</tr>
<tr>
<td><strong>EBT (as reported)</strong></td>
<td>9,149</td>
<td>9,876</td>
<td>10,986</td>
<td>17,858</td>
</tr>
<tr>
<td><strong>Net income before minorities (as reported)</strong></td>
<td>6,145</td>
<td>7,167</td>
<td>7,889</td>
<td>12,791</td>
</tr>
<tr>
<td><strong>Order intake</strong></td>
<td>83,157</td>
<td>141,156</td>
<td></td>
<td>190,110</td>
</tr>
<tr>
<td><strong>Order backlog</strong></td>
<td>50,238</td>
<td>98,098</td>
<td></td>
<td>132,192</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td>27,655</td>
<td>34,182</td>
<td></td>
<td>41,437</td>
</tr>
<tr>
<td><strong>Equity ratio</strong></td>
<td>31.6%</td>
<td>32.3%</td>
<td>31.4%</td>
<td></td>
</tr>
<tr>
<td><strong>Net cash</strong></td>
<td>30,574</td>
<td>18,951</td>
<td></td>
<td>26,462</td>
</tr>
</tbody>
</table>

Source: Company information, 1) In 2015A, minority interest amounted to €0.2m, in 2014 and 2016A there are no minority interests
Only management fees adjusted

EBIT reconciliation 2016A
in € million

- Classic: 10.5
- E-Mobility: 7.2
- Total segments: 17.7
- Reconciliation: 0.7
- Group as reported: 18.4
- Mgmt. fees: 0.9
- Group adj.: 19.3

EBIT-margin in % of revenue:
- Classic: 9.2%
- E-Mobility: 17.1%
- Group adj.: 12.4%

- Reconciliation: Not all items of other operating income and expenses can be allocated to the segments
- Management fees to shareholder mainly for preparation of IPO

Source: Company information
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