Agenda

1. Facts in brief

2. Fundamentals

3. Trends and opportunities
   a. Electric vehicles
   b. Light-weighting
   c. General industry
   d. Smart factory

4. Summary
Industrial Technique

Growth drivers

- Further developing the offer within assembly technologies
- Innovation is key
- Extend the service offer
Helping our customers with critical processes

- **Tightening**
  - Multiple industries

- **Drilling**
  - Aerospace

- **Material removal**
  - Metal fabrication

- **Dispensing**
  - Automotive

- **Self-pierce riveting**
  - Automotive
Tightening: Multiple industries

- Automotive
- PowerTrain
- Tiers
- Electronics
- White goods
- Aerospace
- Off-road
- Energy
- Vehicle maintenance
**Business concept – General industry**

Partner in assembly technology

- Drilling
- Tightening
- Maintenance
- Operator guidance
- Quality assurance
- Process Improvements
Revenues from service, parts and consumables

CAGR 2012 - 2016 16%
Sustainable productivity in practice

EXAMPLE 1
The Henrob SPR "Eco Controller"

EXAMPLE 2
The SCA 5 step Material Efficiency Package

EXAMPLE 3
The TBP Battery Pulse Tool System
Trends

1. Quality assurance
2. Ergonomics / safety
3. Middle class growth
4. Emerging markets
5. Electric vehicles
6. Light-weighting
7. Electronics
8. Flexible lines
9. Automation
10. Data driven service
Strategic approach to acquisitions

- **Adhesive systems and metering technology** (2011)
- **Drilling equipment** (2011)
- **Quality control solutions** (2013)
- **Mechanical and electrical wrenches** (2013)
- **High torque bolting solutions** (2013)
- **Self-pierce riveting** (2014)
- **Hydraulic torque wrenches and pumps** (2014)
- **Process control solutions** (2015)
- **Adhesive dispensing equipment** (2016)
What will be the impact of electric vehicles?

**Base case**
New vehicle sales by powertrain type, %

- **Internal combustion engines**
  - 98 in 2015
  - 75 in 2025
  - 61 in 2030

- **Hybrid electric vehicles**
  - 2 in 2015
  - 4 in 2025
  - 5 in 2030

- **Plug-in hybrid electric vehicles**
  - 3 in 2015
  - 11 in 2025
  - 13 in 2030

- **Battery electric vehicles**
  - 4 in 2015
  - 11 in 2025
  - 22 in 2030

Base case assumptions in 2030:
- ~90 USD/kWh
- ~70 g CO₂/km
- ~5% shared vehicle sales

**SOURCE:** McKinsey 2017
What will be the impact of electric vehicles?

- Tier suppliers
- ICE powertrain suppliers
- E-powertrain

<table>
<thead>
<tr>
<th>Demand for Atlas Copco applications</th>
<th>Body shop</th>
<th>Paint shop</th>
<th>Final assembly</th>
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<tbody>
<tr>
<td>P/HEV: Plug-in/Hybrid Electric Vehicles</td>
<td>P/HEV</td>
<td>P/HEV</td>
<td>P/HEV</td>
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<tr>
<td>BEV: Battery Electric Vehicles</td>
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Electric vehicles will drive demand
**Light-weighting: Increased need for mixed material joining**

**Automotive**

<table>
<thead>
<tr>
<th>Material</th>
<th>2010</th>
<th>2020</th>
<th>2030</th>
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<tbody>
<tr>
<td>Carbon fiber</td>
<td>52</td>
<td>33</td>
<td>13</td>
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<tr>
<td>Plastics</td>
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<td>20</td>
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<td>Magnesium</td>
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<td>27</td>
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<tr>
<td>Aluminum</td>
<td>9</td>
<td>10</td>
<td>12</td>
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<td>HSS¹</td>
<td>5</td>
<td>5</td>
<td>12</td>
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<tr>
<td>Steel (&lt;550 MPa)</td>
<td>67%</td>
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<tr>
<td>Other non-lightweight</td>
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</table>

**Share of light-weight materials will increase**

*Material split / percent*  

SOURCE: McKinsey 2017
Light-weighting: Increased need for mixed material joining
General industry: Improving production yields in electronics
New opportunities in the Smart factory

Increased automation

Increased line complexity
Process Deviation
Operator Issue
Equipment Problem
Summary – Industrial Technique

- Major opportunities in electric vehicles and multi-material design
- Well positioned in the Smart Factory
- Continuation of sustainable business model in the Automotive and General Industries
Committed to sustainable productivity.
Cautionary Statement

“Some statements herein are forward-looking and the actual outcome could be materially different. In addition to the factors explicitly commented upon, the actual outcome could be materially and adversely affected by other factors such as the effect of economic conditions, exchange-rate and interest-rate movements, political risks, the impact of competing products and their pricing, product development, commercialization and technological difficulties, supply disturbances, and major customer credit losses.”