

The background of the slide features a dark blue industrial scene with a prominent orange robotic arm in the foreground. The scene is overlaid with a digital aesthetic, including a grid of glowing blue nodes connected by lines, and vertical columns of binary code (0s and 1s) on the left side. The overall theme is modern manufacturing and automation.

Bosch Manufacturing Solutions | BMG

Sales presentation as of 01.2025

A decorative header consisting of a series of overlapping, semi-transparent geometric shapes (triangles and polygons) in a color gradient from red on the left to green on the right. Below this is a solid black horizontal band.

The Bosch Group

Corporate presentation as of 10.2024



Invented for life



Who we are

Our company in figures

In 2023



91.6

billion euros
sales revenue



4.8

billion euros EBIT
from operations



429,400

Bosch associates
worldwide at year-end
(approx.)



470

subsidiaries and regional
companies (approx.) in
more than **60** countries

Who we are

Our business sectors



Mobility



Industrial Technology



Energy and Building Technology



Consumer Goods

Who we are

Industrial Technology



As a pioneer in the domain of connected industry, Bosch is a leading supplier of software, systems, and components for a wide variety of manufacturing and logistics applications.

Who we are Industrial Technology

In 2023



8%

share of Bosch
Group sales



7.4

billion euros
sales revenue



35,700

associates
(approx.)

Who we are

Industrial Technology



Drive and Control Technology

- Mobile Hydraulics
- Machinery Applications
- Factory Automation

Bosch Manufacturing Solutions

- Production equipment & automation: special purpose machinery
- Individual assembly and testing systems
- advanced manufacturing processes and technologies
- digital & intelligent solutions and services along entire product lifecycle

Bosch Connected Industry

- Production & logistics software from a single source

Who we are

Industrial Technology



Drive and Control Technology

- Mobile Hydraulics
- Machinery Applications
- Factory Automation

Bosch Manufacturing Solutions

- Production equipment & automation: special purpose machinery
- Individual assembly and testing systems
- advanced manufacturing processes and technologies
- digital & intelligent solutions and services along entire product lifecycle

Bosch Connected Industry

- Production & logistics software from a single source

BMG | who we are

Bosch Manufacturing Solutions | BMG –

Global industrialization partner & turnkey special machinery provider for production equipment & automation



> 30 years of experience as special machinery supplier



> 4.000 assembly & testing systems
> 10.000 small & services projects



Automation level adjustable,
semi- to fully automated solutions



Digital planning & process to digital engineering & i4.0 applications

>17

Locations



Full-liner
portfolio



Several
industries &
product areas



1.900

Employees



~680

TNS m€



BMG | our purpose statement

The difference in manufacturing



For us, **‘Invented for life’** means to build a **more sustainable future** through production equipment by Bosch Manufacturing Solutions.

We create a difference in our customers’ products by offering **“the difference in manufacturing”**

BMG | our portfolio

Customized assembly & testing systems

Global industrialization partner & turnkey special machinery provider for production equipment & automation, offering

Customized assembly & testing systems

empowered by ...



**Engineering Consulting
& Digital Engineering**



**Advanced Manufacturing
Processes & Technologies**



**Digital & Intelligent
Solutions**



**Services along the entire
product lifecycle**

BMG | global strength in network & partners

- Charleston**
USA
- Florence**
USA
- Toluca**
Mexico
- Juárez**
Mexico
- Aguascalientes**
Mexico
- Querétaro**
Mexico
- Campinas**
Brazil

- Stuttgart**
Germany
- Homburg**
Germany
- Madrid**
Spain
- Bursa**
Türkiye

- Blaj**
Romania
- Budweis**
Czech Republic
- Budapest**
Hungary
- Riad**
Saudi Arabia

- Suzhou**
China
- Changsha**
China
- Hemeraj**
Thailand
- Penang**
Malaysia

- Bangalore**
India
- Nashik**
India

- Clayton**
Australia

BMG
location

BMG
satellite

BMG
partner

BMG | focus industries & product areas

Focus industries



eMobility



Automotive (ICE)



Energy



Consumer Goods

Focus product areas



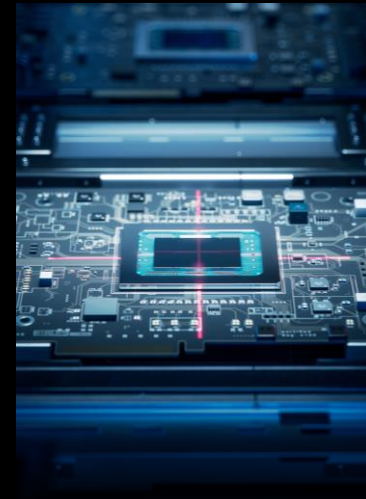
Battery



H2 Solutions / Fuel Cell



eDrive



Sensors & Electronics



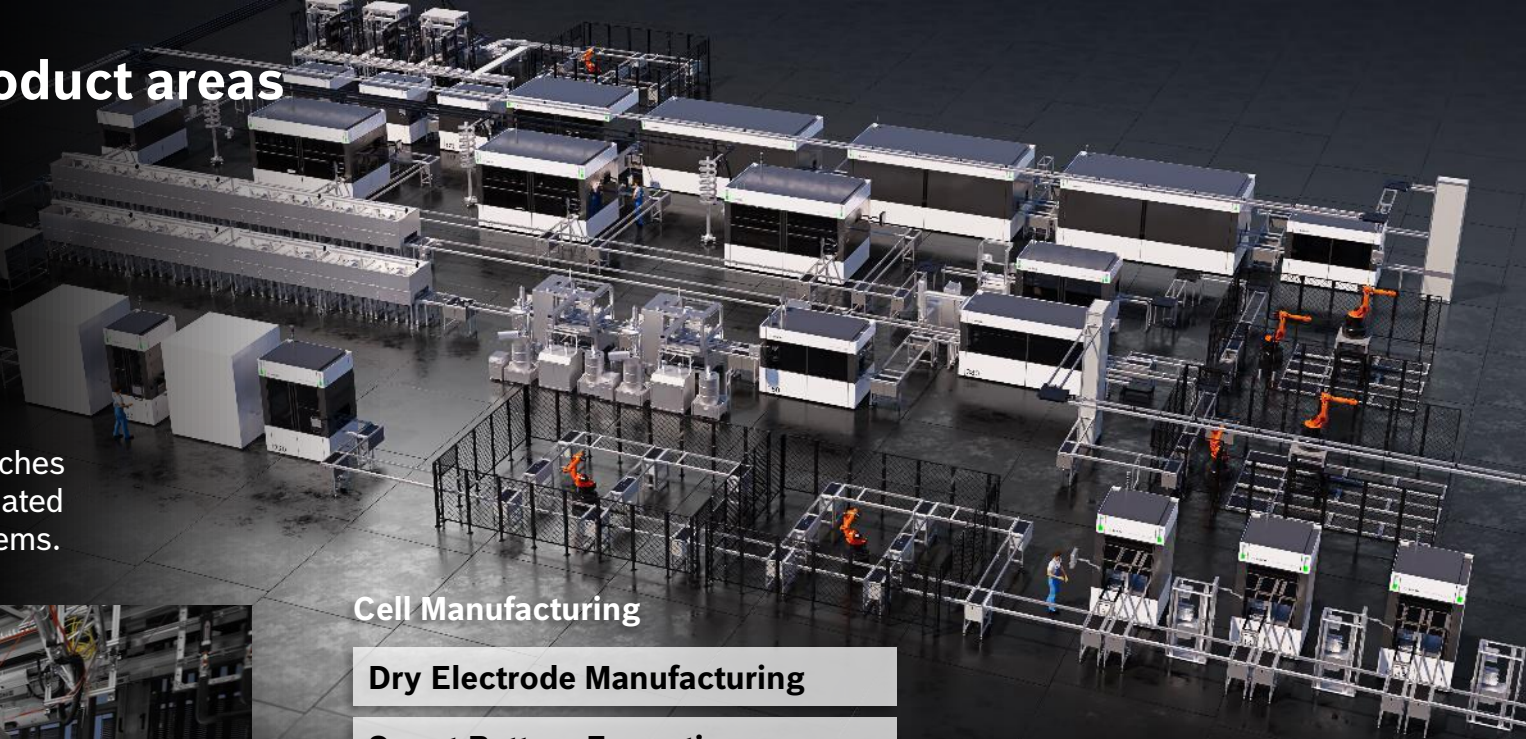
Chassis & Steering



Combustion Engine

Stay charged

with battery production equipment from Bosch Manufacturing Solutions | BMG. Our expertise reaches from cell production technologies up to fully automated and intelligent Cell to X assembly and testing systems.



Cell Manufacturing

Dry Electrode Manufacturing

Smart Battery Formation

Cell to X Manufacturing

Cell Supply

Cell Cleaning

Begin & End of Line Testing

Dispensing

Resistance Welding

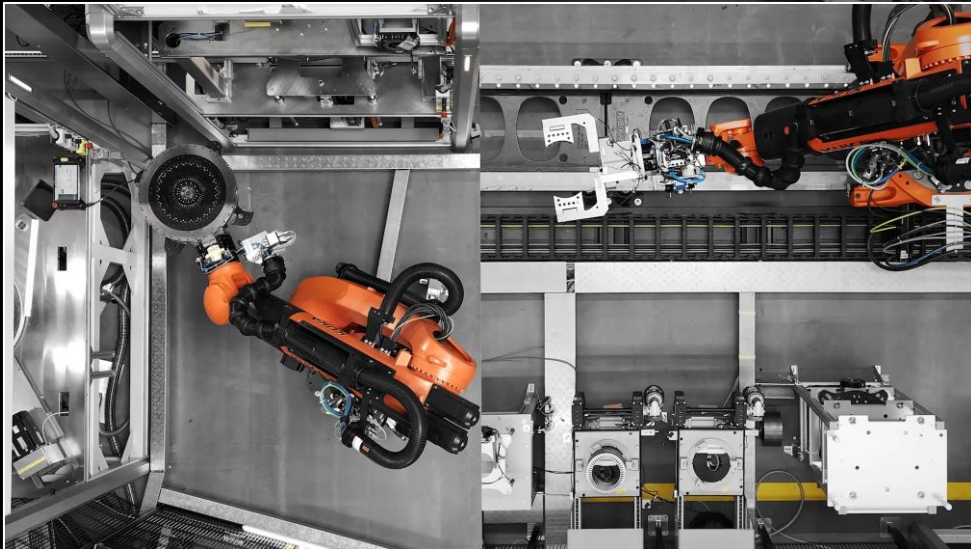
Laser Welding

Machine Vision

Leakage Testing

Driving mobility

with innovative eDrive production equipment from Bosch Manufacturing Solutions | BMG. Our expertise ranges from various winding technologies such as Hair-Pin, I-Pin, X-Pin, for all vehicle classes, to individual line concepts from semi to fully automated, including AI based solutions for increased efficiency.



eDrive – some process highlights

Handling & Robotics

Twisting

Laser Welding

Separating & Cutting

Clamping

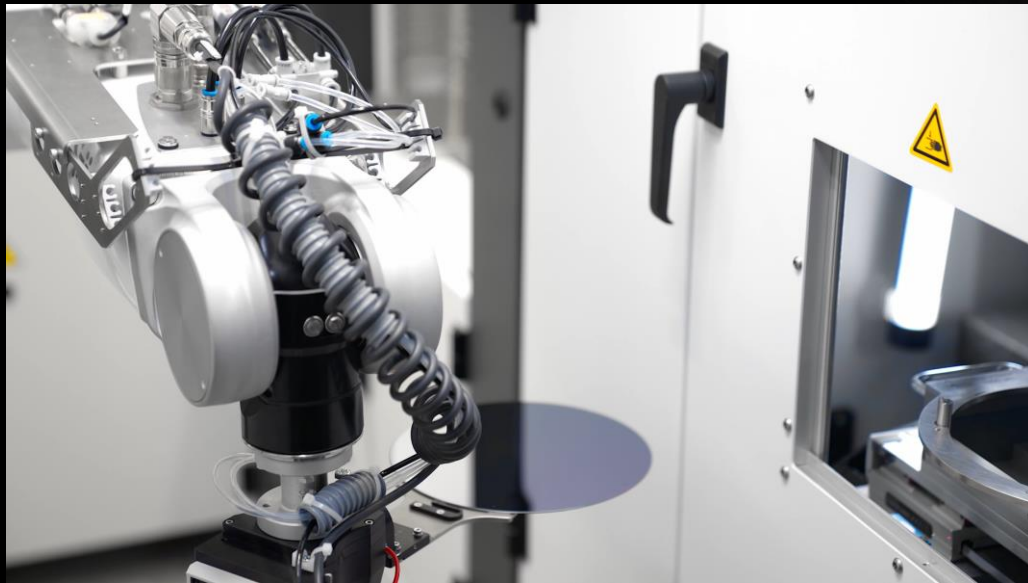
Optical Inspection: Post Vision

Parameter Identification (PI) Testing

Further ...

Unleash power

with sensors & electronics production equipment from Bosch Manufacturing Solutions | BMG. We provide flexible assembly technology for ECUs, power electronics, and sensors, mainly in eMobility. Our scalable solutions optimize investments and adapt to variable production volumes.



Sensors & Electronics – some insights

Flexfoil Handling

Laser Welding of Electrical Connections

Laser Micro Structuring

Laser Cleaning

Dispensing

Screwing

Pressfit & Single Pin Insertion

Optical Inspection

Magnetic Conveyor System

From Water to Energy –

empower your sustainable future with H₂ solutions by Bosch Manufacturing Solutions | BMG, in the area of water purification & electrolysis, fuel cell assembly & testing as well as power generation.



H₂ & Fuel Cell

Water Purification

Electrolysis

PEMFC Solutions

FCEM Solutions

SOFC Solutions

BMG | our portfolio

Customized assembly & testing systems

Global industrialization partner & turnkey special machinery provider for production equipment & automation, offering

Customized assembly & testing systems

empowered by ...



**Engineering Consulting
& Digital Engineering**



**Advanced Manufacturing
Processes & Technologies**



**Digital & Intelligent
Solutions**



**Services along the entire
product lifecycle**

BMG | our portfolio

Customized assembly & testing systems

Customized assembly & testing systems

empowered by ...



Engineering Consulting & Digital Engineering

- Engineering Consulting
- Seamless Digital Toolchain
- Model-Based Engineering
- Functional Machine Structure
- Field Data Leverage
- Mechatronic Modular Standards
- Material Flow Simulation
- Virtual Commissioning



Advanced Manufacturing Processes & Technologies

- Handling, Robotic & Automation
- Measurement & Testing
- Optical Inspection
- Forming
- Laser Technology
- Joining
- Surface Technology
- Separating



Digital & Intelligent Solutions

- System Connectivity
- Condition Monitoring & Alerting
- Data Analysis
- Prediction
- Intelligent Process Optimization
- Line & Shopfloor Solutions
- Hardware & Services



Services along the entire product lifecycle

- Technical Support
- Modernization & Condition-based Services
- Engineering Services
- Spare Parts & Repairs
- Services Contracts

Engineering Consulting & Digital Engineering



Engineering Consulting
& Digital Engineering



Advanced Manufacturing
Processes & Technologies



Digital & Intelligent
Solutions



Services along the entire
product lifecycle

BMG | our portfolio

Engineering Consulting & Digital Engineering

We support you with our experience already in **your SE work** - for **sustainable product design** that leads to **simpler and more cost-effective manufacturing equipment concepts**. Thanks to our **digital engineering**, we are able to simulate even before realization and thus check everything for feasibility and technical requirements.



Seamless Digital Toolchain

- Automation of engineering tasks
- Bi-directional change management
- Highly efficient global collaboration



Model-Based Engineering

- Line concept & material flow
- Kinematic sequences
- PLC software & MES connection



Functional Machine Structure

- Structured requirement engineering
- One perspective for all domains
- Parallelized work



Mechatronic Modular Standards

- Effective reuse in engineering
- Creators are provided right content at right time
- Exchange of standards across organizations



Field Data Leverage

- Digital machine twins
- Product understanding and improvements
- Custom-tailored services



Digital Solutions & Application on the Edge

- Real-time data processing
- Data aggregation & enrichment
- Powerful (AI) algorithms on the edge

Manufacturing Processes & Technologies



Engineering Consulting & Digital Engineering



Advanced Manufacturing Processes & Technologies



Digital & Intelligent Solutions



Services along the entire product lifecycle

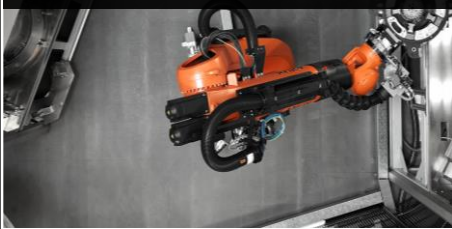
BMG | our portfolio

Manufacturing Processes & Technologies

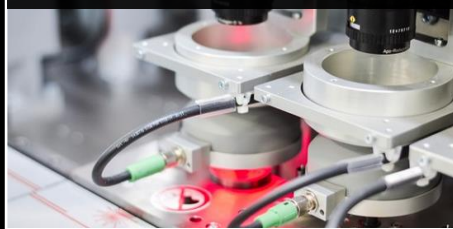
Manufacturing Processes – innovative & intelligent.

Efficient solutions for demanding & customized applications

Handling, Robotic & Automation



Optical Inspection



Separating



Joining



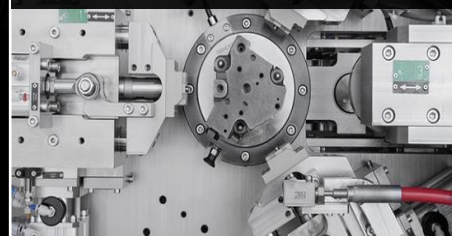
Measurement & Testing



Laser Technology



Forming



Surface Technology



BMG | our portfolio

Manufacturing Processes & Technologies

Manufacturing Processes – innovative & intelligent.

Efficient solutions for demanding & customized applications

Handling, Robotic & Automation

- Handling & Positioning
- Transfer, Transport & AGVs
- Robotics & Gripping
- Feeding, Clamping, Palletizing

Optical Inspection

- Assembly Guiding
- Process Control
- Quality Check End of Line / Inline

Separating

- Stripping / Skinning
- Cutting with undefined Edge (Internal Grinding & External Grinding)
- Balancing

Joining

- Resistance & keep welding
- Friction welding
- Ultrasonic welding
- Dispensing & gluing
- Tightening & screwing

Measurement & Testing

- Electrical Testing & Characterization
- Leakage, Gas & Pneumatic Testing

Laser Technology

- Laser Welding (on-the-fly)
- Laser Cutting
- Laser Drilling
- Laser Micro Structuring

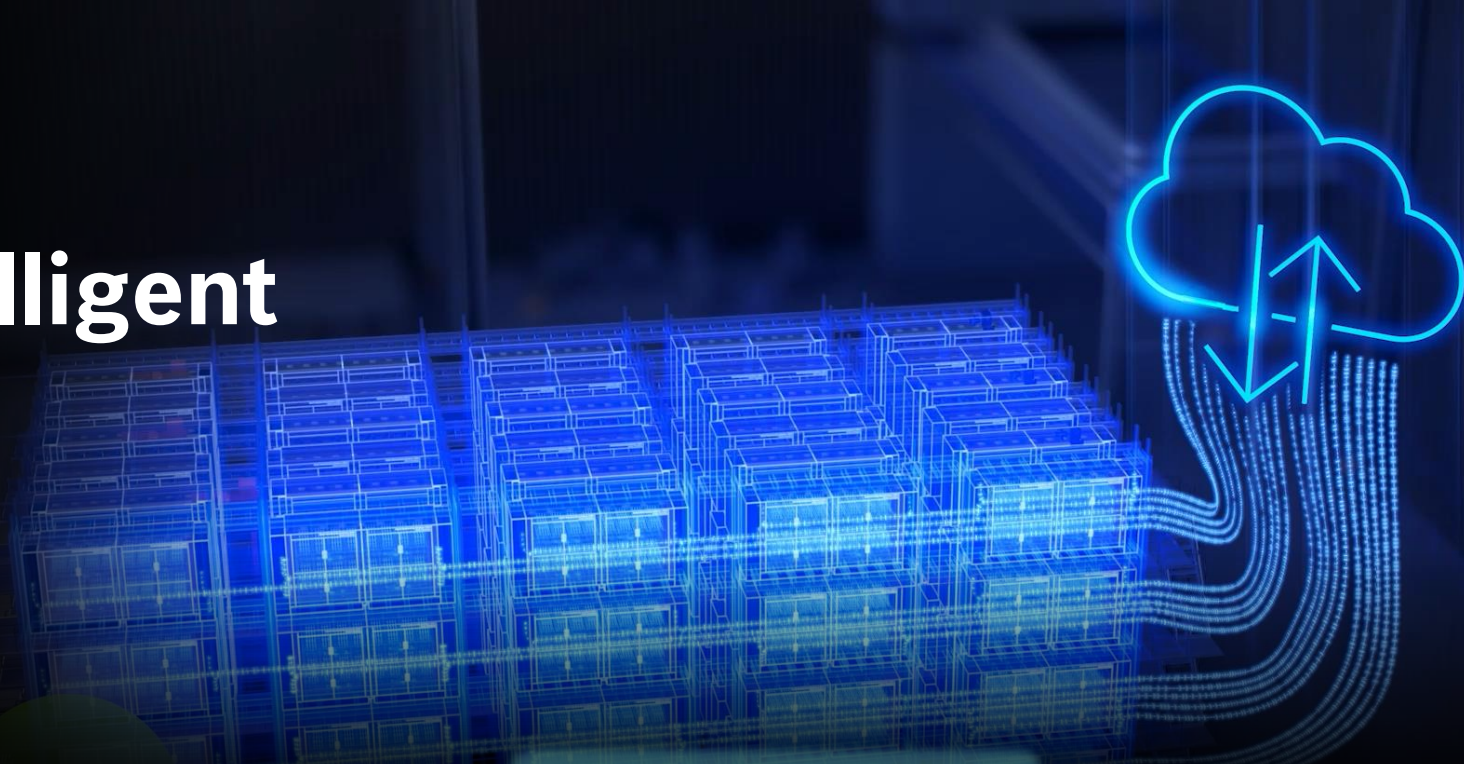
Forming

- Twisting
- Bending
- Winding
- 3D Forming

Surface Technology

- Electro plating
- PVD coating
- Functional printing

Digital & Intelligent Solutions



**Engineering Consulting
& Digital Engineering**



**Advanced Manufacturing
Processes & Technologies**



**Digital & Intelligent
Solutions**



**Services along the entire
product lifecycle**

BMG | our portfolio

Digital & Intelligent Solutions | IP Suite environment

Factory Network OS

Plant OS: e.g. Bosch Nexeed MES / IAS

BMG intelligent production suite (IP Suite)



Condition Monitoring
& Alerting



Data Analysis



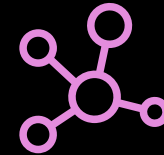
Prediction



Intelligent Process
Optimization



Line & Shopfloor
Solutions



System
Connectivity

Bosch Edge Layer

BMG Consulting & Services

Hardware, Security, Documentation

Line, Machine, Process

Nexeed

Beckhoff

Mitsubishi

Siemens

Fanuc

CtrlX

...

BMG | our portfolio

Digital & Intelligent Solutions | IP Suite modules overview

BMG intelligent production suite (IP Suite)



Condition Monitoring & Alerting

Process Monitoring

Health Report

Cycle Time Assist

Cycle Time Analysis

uHMI (universal HMI)

Dolphin



Data Analysis

AI-based Anomaly Detection

AI-based Root Cause Analysis

MathEngine



Prediction

MathEngine



Intelligent Process Optimization

PPO (Process Parameter Optimization)

MathEngine



Line & Shopfloor Solutions

DashCam (Event-based Video Monitoring)

KPI-Views / Digital Twin

MTS (Maintenance Ticket System)



System Connectivity

UMC (Universal Machine Connector)

Hardware, Security, Services & Documentation

Experience Share System (ESS)

EFA (Embedded Field Application)

Digital Manuals

Services along entire product lifecycle



Engineering Consulting & Digital Engineering



Advanced Manufacturing Processes & Technologies



Digital & Intelligent Solutions



Services along the entire product lifecycle

BMG | our portfolio

Services along entire product lifecycle

With our comprehensive range of services, we ensure worldwide availability, fast response times, and flexible organization. We maintain consistent standards across all locations, providing you with local contacts for seamless support and efficient solutions wherever you are.



Consulting Services & Services Contracts

Engineering Services

Modernization & Condition-based Services

Technical Support

Spare parts & Repair Services

Training