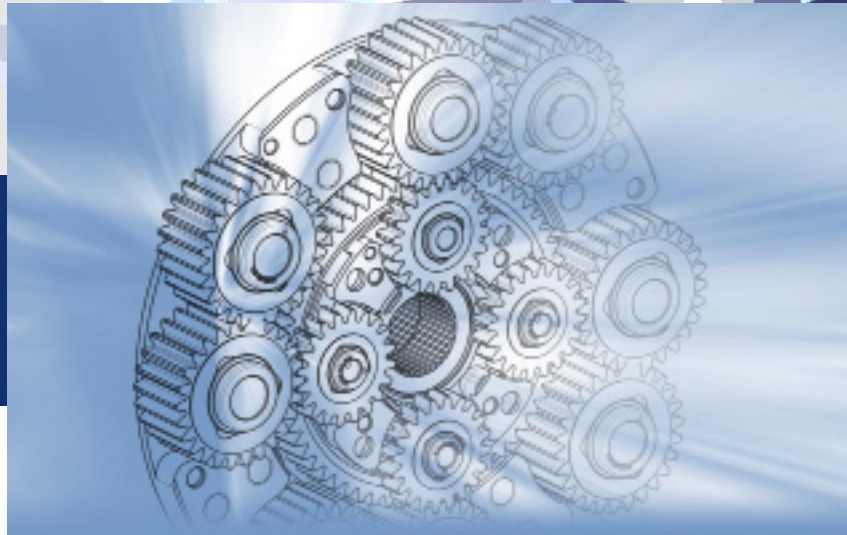


# MAHLE Powertrain Transmissions Build & Test

- > Innovative Gear Development & Production
- Specialist Testing of eMachines
- Comprehensive Customer Support



## Prototype Manufacture



>> Attention to detail

Prototypes represent a significant milestone in the development of new products. MAHLE ZG Transmissions achieves this milestone together with their selected partners – no matter whether “only” a gear wheel or an entire gearing (e.g. an automatic gear for cars) is required.

- Creation of production drawings
- Drawing review with suppliers
- Component modifications management
- Supporting the customer production
- Detailed dimensioning of components
- Gear prototype assembly
- Complete documentation of prototypes

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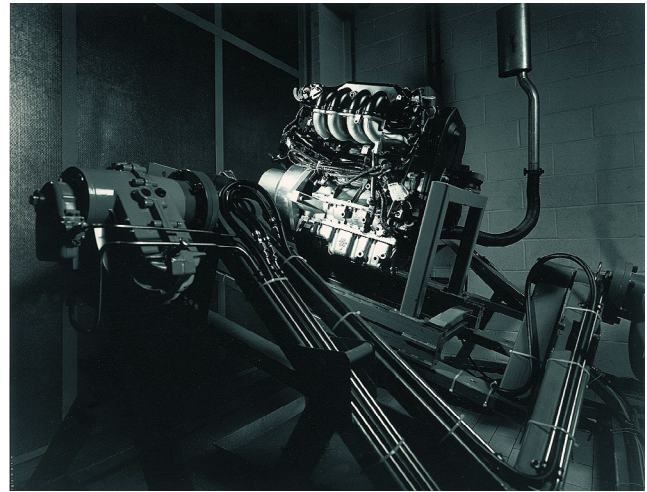
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# MAHLE Powertrain Transmission Build & Test

## Specialised Test Rigs

- ZG Transmissions have developed a range of bespoke test rigs
  - › Supports evaluation & development of transmissions & eMotors
- Specialist in-house equipment for testing includes:
  - › Tilt table for simulation of g-loading during lubrication system optimisation
  - › Axial sealing / rotor cooling rig for thermal & leakage testing of multiple seals
- Modular test rig
  - › Provides experimental research on eMotors
  - › Oil & water cooling system development
- Thermal loss testing



>> Motor tilt rig

## Prototype Transmissions Manufacturing

- In-house manufacturing of prototype transmissions
- Systematic documentation in all production stages
- Wide spectrum of testing on prototype assemblies
- Validates all required specifications including:
  - › Mechanical durability
  - › Lubrication
  - › Sealing
  - › Cooling
  - › NVH tests



>> Axial sealing rig

## Services

- Our prototypes represent significant milestone in development of new products
- All gear components provided
- Network of approved suppliers
- Prototypes assembled in house
- Systematic assembly documentation
- Initial function tests for assembled gears
- Dedicated facility for lubrication tests
- Experienced team for test results evaluation
- Corresponding sensor system

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MAHLE product information 05/2022

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