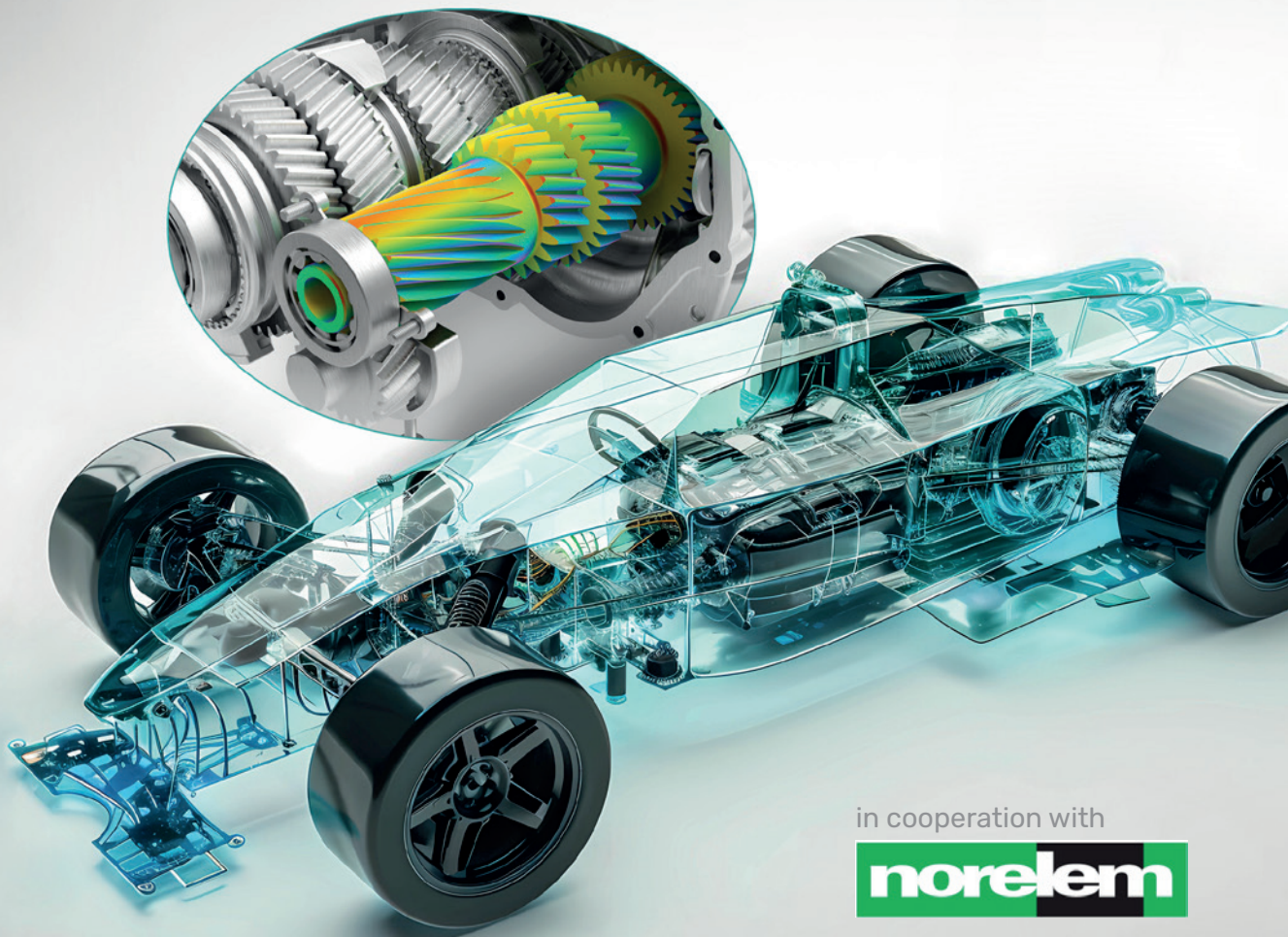


# MDESIGN



in cooperation with



## FORMULASTUDENT

MDESIGN - the calculation software for machine elements  
in the FormulaStudent-Edition

Information • Calculation • Optimization • Verification • Documentation

Design, calculate and verify

# OPTIMIZING WITH MDESIGN

The MDESIGN calculation and information software has been providing the solution for recognized knowledge in the design, recalculation and optimization of components for years. Quick to use, individually configurable and adapted to the needs of design and development, MDESIGN is an indispensable tool for prospective engineers and students.



Shafts, Axles, Hubs



Roller & plain bearings,  
Linear Technology



Gearing, Gear,  
Drive Technology



Screw Connections,  
Bolts, Pins



Beams and Frames



Springs and  
Shock Absorbers



Material Data, General  
Strength Assessment



Pipelines, Seals,  
Hydraulic, Pneumatic



Welded Connections,  
Bonded & Soldering Joints



Manufacturer Information  
Interfaces



Documenting,  
Verifying, Informing

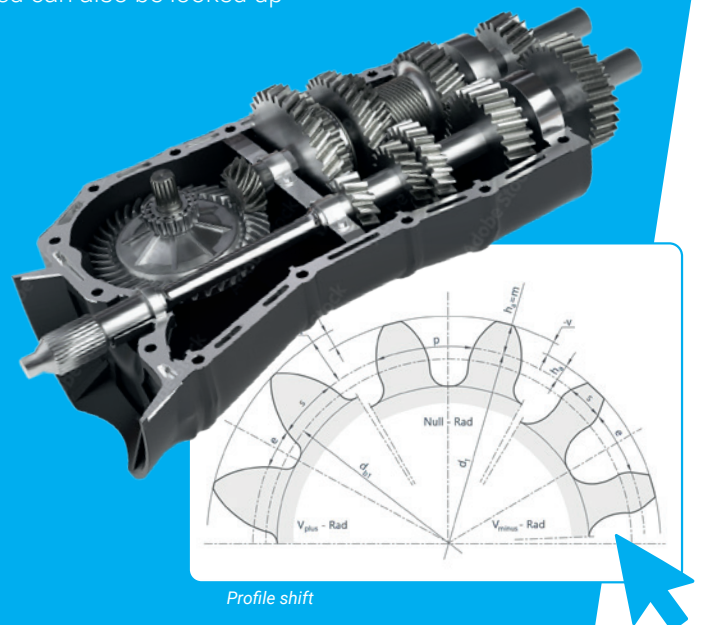
## Quick application through help systems

The fast application of MDESIGN is achieved by an individually usable help system. Notes on input variables, access to databases with required factors and information on the effects are directly accessible at the click of a mouse. Graphical aids in the form of sketches, diagrams or 3D models ensure plausible input. All formulas used can also be looked up quickly and without searching.

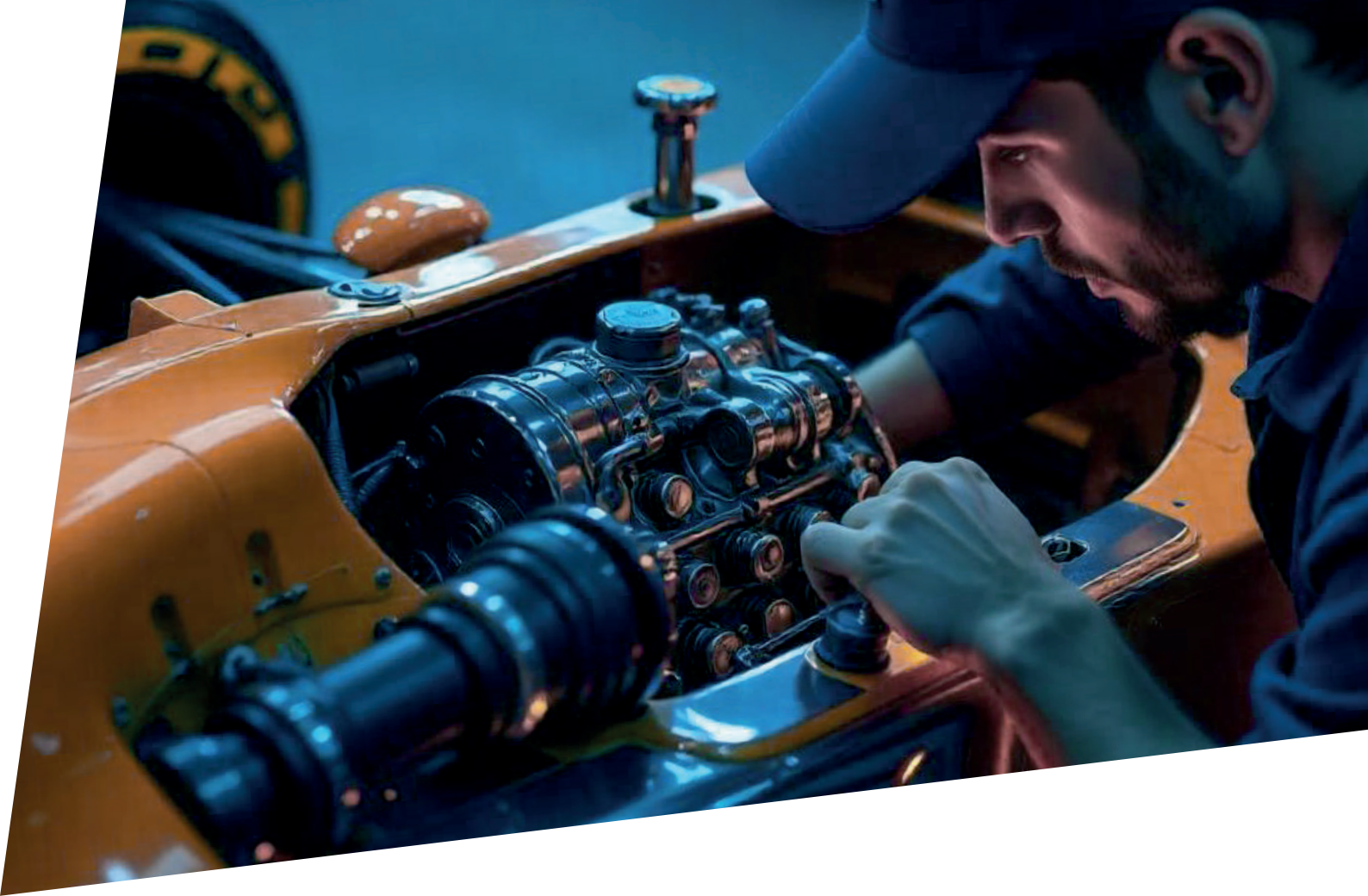
### Automatic calculation documents

MDESIGN also provides support with the requirements for the necessary documentation. The specifications of the regulations are often derived from quality assurance, traceability and standards to be standardized.

Traceability and transparency are also essential in the Formula Student Team. Professional MDESIGN results documents are therefore configurable and quick to create. These support the Formula Student teams in all verifications, evaluations and presentations.



Profile shift



## Extensive knowledge available

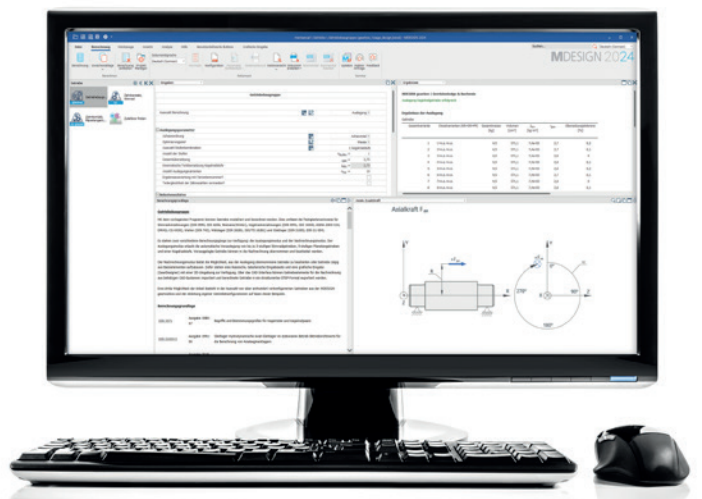
MDESIGN provides Formula Student teams with comprehensive and sophisticated calculation methods and formulas. MDESIGN is a modern digital tool for the rapid design, recalculation and documentation of machine elements based on the experience and research results of many mechanical engineering institutes. The calculation methods are validated by standardization organizations such as DIN, ISO, VDI and EN as well as Eurocode. However, they are also based on practical textbooks such as Roloff/Matek, Dubbel or Böge. Additional formulas provide support in many different Quick application through help systems use cases.

### Variant calculation for alternative solutions

Formula Student teams don't just want to dimension roughly, they want to achieve an optimum result.

MDESIGN enables the teams to automatically vary the input variables of a calculation for optimizations and alternatives and to compare the results.

Leading the way for secure, new solutions in competition!



# MDESIGN formula student – Scope of the license

## MDESIGN explorer

### Reference works, Information and Tables

- Tolerances, fits, torques and reference values
- Geometry, physics, statics and dynamics, manufacturing processes

## MDESIGN technology

### Databases and Methods

- Material information system and component strength according to FKM

## MDESIGN mechanical

### Document calculations professionally

- Shafts, axles, carriers and shaft-hub connections
- Roller bearings, plain bearings, gearing
- Bolted, welded and bonded joints
- Elastic springs, bolts, pins
- Belt and chain drives as well as couplings and linear technology

## MDESIGN bolt

### Testing and verifying bolted connections

- Calculation basis according to VDI 2230 and Eurocode 3
- Countersunk head bolts, hollow bolts, flange bolts, inch bolts
- Temperature consideration, transfer of FE results

## MDESIGN multibolt

### Forces in multi-bolt connections

- Bolt bays and individual connection designs
- Force determination according to VDI2230 sheet 2 with FE analysis

## MDESIGN shaft

### Safely calculate and optimize shafts

- Calculation basis according to DIN 743 and FKM guideline
- Hollow shafts, conical shoulders, critical speeds
- Import/export of models via STEP formats

## MDESIGN bearing

### Select, look up and use roller bearings

- Catalog data from leading manufacturers
- Bearing combinations and extended rating life calculation

## GEARBOX DESIGN

## MDESIGN gear

### Professional gear calculations

- Plastic gears and ring gears
- Gray spot load capacity and tooth breakage verification
- Bevel and hypoid gears, crown gears, helical gears

## MDESIGN gearbox

### Reach your goal faster with assemblies

- Gear-shaft-bearing combination in a single pass
- Fast design of multi-stage gearboxes
- Optimization of installation space, mass and inertia
- Export to CAD system via step format

## MDESIGN weld

### Reliably evaluate weld seams with alternatives

- Additional method according to FKM guideline and Eurocode 3

## MDESIGN process

### Flanges and pipes under pressure

- Flange, pipe and gasket calculations

## MDESIGN espresso

### Calculate pressure vessels in accordance with standards

- Pressure vessel calculation according to AD data sheets and EN 13445

Order form

# MDESIGN FORMULA STUDENT



## ○ 5 x MDESIGN Formula Student – Workstation Edition

Value € 6.800,-

MDESIGN explorer, MDESIGN technology, MDESIGN mechanical, MDESIGN bolt, MDESIGN multibolt, MDESIGN shaft, MDESIGN bearing, MDESIGN gear, MDESIGN gearbox, MDESIGN weld, MDESIGN process, MDESIGN espresso

- Single User License, hardware bound, valid until 30.09.2025
- MDESIGN and norelem are listed as sponsors

### + Access to the MDESIGN customer forum, Download of patches and releases

- Free service until the end of the season on 30.09.2025

### + MDESIGN Knowledgeupdate – StartUp-Training

- Free online training for all team members for quick use of MDESIGN
- Request promotional code before registering at [vertrieb@mdesign.de](mailto:vertrieb@mdesign.de)!

### + MDESIGN Knowledge Online-Seminar on specialist topics

- Specialist topics of your choice (e.g. gears, gearing, etc.)
- Free of charge for 3 team members
- Participation until 30.09.2025
- Request promotional code before registering at [vertrieb@mdesign.de](mailto:vertrieb@mdesign.de)!

Formula Student Team	
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Phone	Web
Date	Signature
We look forward to your questions and requirements. You can reach us at <b>+49 (0) 234 30 70 3-60</b> or <a href="mailto:info@mdesign.de">info@mdesign.de</a>	

## MDESIGN

in cooperation with



All licenses may only be used for the purpose of participating in the "Formula Student Team" competition in the 2024/2025 season.

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