MDESIGN

MDESIGNCAMPUS2024

Digitalization in Research and Teaching with Calculation System for Mechanical and Plant Engineering

Information • Calculation • Optimization • Verification • Documentation

Design, optimize and verify

OPTIMIZE WITH MDESIGN

MDESIGN calculation and information software has been the solution for approved knowledge of part design, calculation and optimization for years. The software is very user friendly, individually configurable and tailor made to the requirements and aims of the user. Thus, MDESIGN is an indispensable tool for prospective engineers and students.

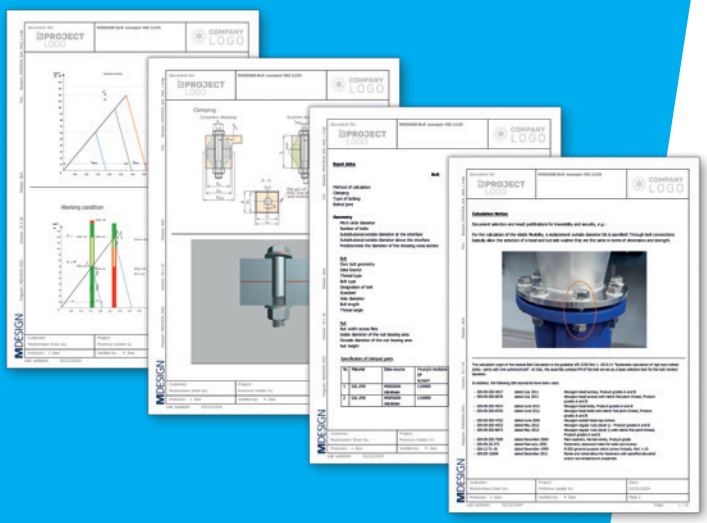
- Shafts, Axles, Hubs
- Roller & Plane Bearings, Linear Technology
- Gearing, Gears, Drive Technology
- Screw Connections, Bolts & Pins
- Beams & Frames
- Springs & Shock Absorbers
- Material Data & Strength Assessment
- Pipelines, Sealings, Hydraulics, Pneumatics
- Welded Connections, Soldered & Bonded Joints
- Communication & Interfaces
- Document, Proof, Inform

Quick application through help systems

The fast application of MDESIGN is achieved by an individually usable help system. Notes on input values, access to databases with required factors and information on the effects can be accessed directly at the click of a mouse. Graphical support in the form of sketches and diagrams up to the representation of the 3D model, ensure plausible input. All formulas used in MDESIGN can also be looked up quickly.

Automatic calculation documents
MDESIGN fulfills the documentation requirements, which are prescribed in companies by product liability, quality assurance and also by the EC Machinery Directive.

Traceability and transparency are also indispensable in education and studies. Hence, the professional MDESIGN result documents are configurable in content and can be created quickly. This makes the software the best support for students and lecturers during exams, student research projects and diploma theses.



Extensive knowledge available

With MDESIGN, the student receives extensive and well developed calculation methods and formulas. As a tool for the design, calculation and documentation of machine elements, MDESIGN is based on practical experience and research results of many machine engineering institutes.
The calculation methods are supported by standardization organizations such as DIN, ISO, VDI and EN as well as Eurocode, but are also based on practical textbooks such as Dubbel, Mott and Roloff/Matek. The additional formula collection supports many different application cases.

Without search - convenient access to table values
The selection of suitable components for the design often requires the use of tabular values during the calculation process. MDESIGN provides these values as well.

For example, when selecting the material, the comprehensive database is used to transfer all required characteristic values directly into the calculation. Also geometrical values for the choice of suitable elements such as bolts and performance parameters for bearing selection are provided by MDESIGN with the respective calculation provided.
The long search for and in tables is no longer necessary.

MDESIGN campus 2024

DIGITALIZATION IN RESEARCH AND TEACHING

MDESIGN campus – The advantages at a glance

MDESIGN explorer	**Reference books, information and tables** • Tolerances, fits, moments and approximate values • Geometry, physics, statics and dynamics, manufacturing methods
MDESIGN technology	**Databases and methods** • Material data system and general strength assessment acc. to FKM
MDESIGN mechanical	**Professional calculation of machine elements based on standards** • Shafts, axles, beams as well as shaft-hub connections • Roller bearings - plain bearings - gearings • Bolt connections, welded connections and bonded joints • Elastic springs, bolts & pins, belt & chain drives, couplings
MDESIGN bolt	**Design, test and verify bolted joints** • According to VDI 2230 and Eurocode 3 • Hollow bolts, flange bolts and bolts in inch dimension • Calculation at higher temperatures, Transfer of FE results
MDESIGN multibolt	**Load distribution of multiple-bolted joints** • Individually modelled bolt arrays and attached geometries • Determine forces according to VDI 2230 part 2 • Integrated FE analysis and automatic verification for all screws
MDESIGN shaft	**Calculation and optimization of shafts** • According to DIN 743 and FKM guideline • Consideration of hollow shafts, tapered sections, critical speed values • Import/export of shafts via STEP format
MDESIGN bearing	**Select, calculate and interpret bearings** • Use of catalog data from leading manufacturers • Nominal and modified reference life expectancy
MDESIGN gear	**Professional Calculation of gears** • Plastic gears and ring gears • Verification of gray stain bearing capacity and tooth fracture • Bevel and hypoid gears, crown gears, screw gears
MDESIGN weld	**Extended weld seam calculation** • Additional method according to the FKM guideline and EC3
MDESIGN process	**Flanges and pipes under pressure** • Pressure vessel calculation according to AD guideline/EN 13445 • Flange, seal and pipeline calculations
MDESIGN espresso	**Calculate pressure vessels in accordance with standards** • Pressure vessel calculation according to AD data sheets and EN 13445

Use professional software

BE PREPARED FOR THE FUTURE

To train highly qualified engineers and technicians is one of the priority tasks of innovative universities and academic institutions today. MDESIGN calculation and information software has been the solution for approved knowledge of part design, calculation and optimizing for years.

With MDESIGN, the student receives many advanced calculation methods and formularies, that are subject to continuous development. The applied methods are based on national as well an international standards as DIN, ISO, VDI, Eurocode, FKM guideline and EN, but are also in line with practical textbooks such as Roloff/Matek, Dubbel, Niemann or Mott.

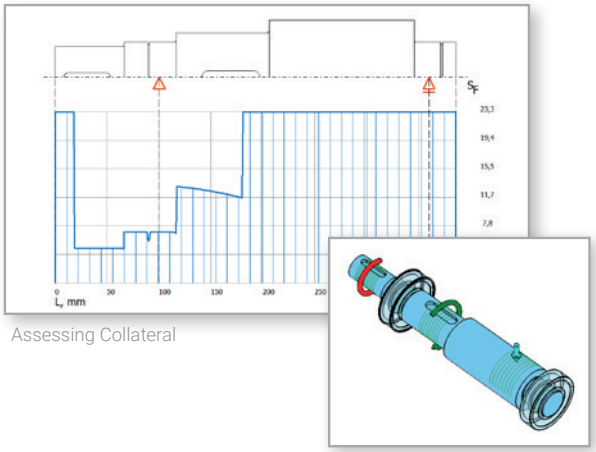
Quality-oriented work with creative goals is individually promoted with the MDESIGN documentation functions.

Head start in the assessment

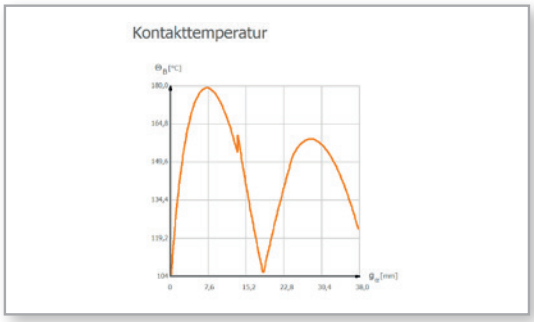
FASTER TO RESULTS – CHOOSE BEST ALTERNATIVE

In studies as well as in professional practice: The further development of existing designs and new developments is an iterative process. Solution approaches result from the assessment of the boundary conditions and evaluation of the resulting results.

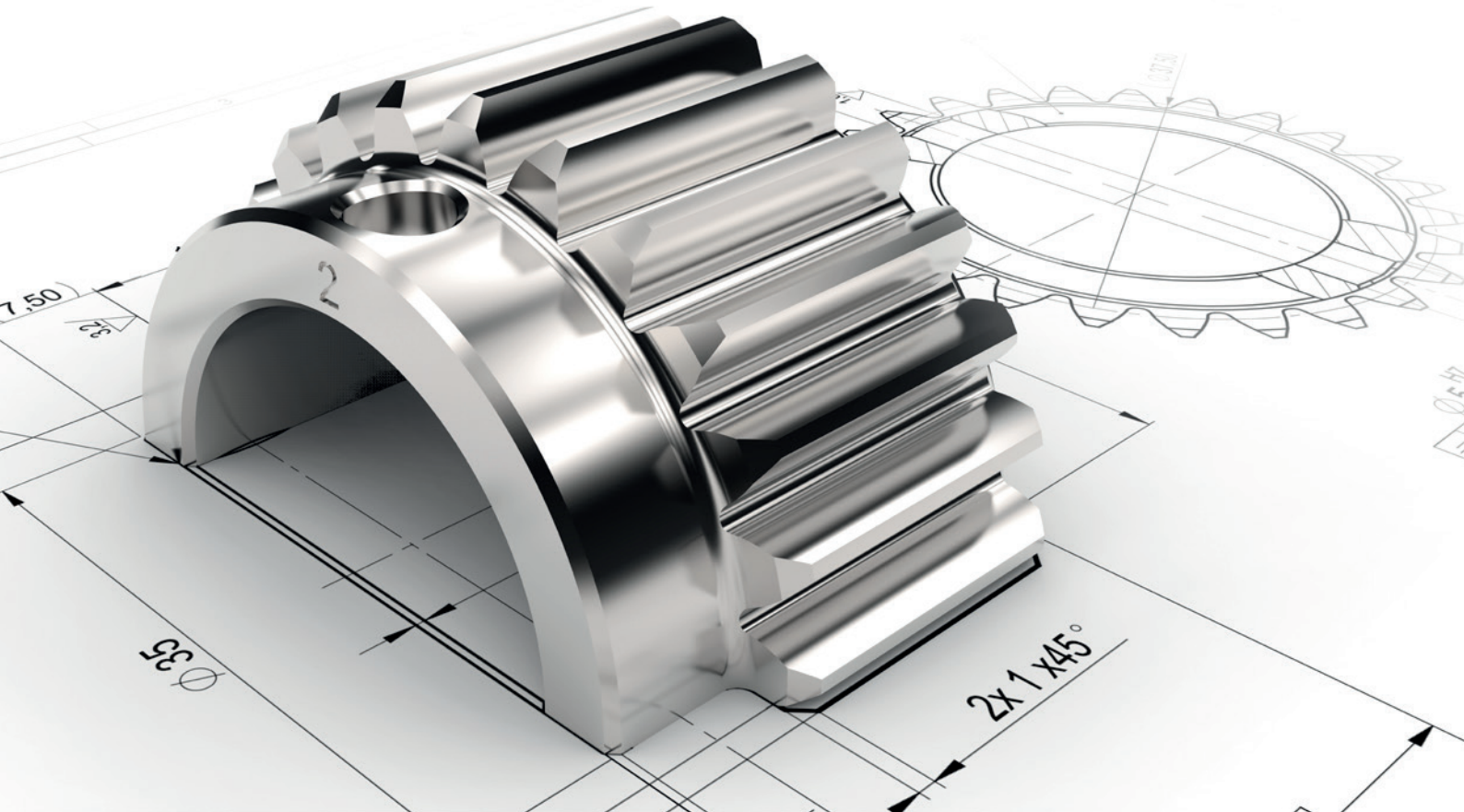
MDESIGN ensures this approach during dimensioning and appropriate selection of machine elements with parameter studies. The automatic MDESIGN calculation with different boundary conditions and the graphical evaluation of the results lead considerably faster to the appropriate solution. Furthermore, MDESIGN additionally provides the necessary evaluation of the influencing variables on the constructions to be calculated. They provide an excellent basis for team discussions and presentation of the decision for the chosen design solution.



Assessing Collateral



Gear evaluation



Order form

MDESIGN CAMPUS 2024

○ MDESIGN campus 2024 – maschine elements

€ 1.490,–

Price incl. VAT

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

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