

## GID CHARACTERISTICS

### USEFUL CAD SYSTEM

- Creation of geometry.
- NURBS handling (freeform, edition, simplification...)
- Import and export CAD data in several formats.
- Several options for repairing and cleaning CAD data.
- Simple assignment of boundary conditions and material properties.
- Definition of analysis parameters.
- Versatile visualization and quality control tools.
- NURBS reconstruction from mesh.

### MESH GENERATION OPTIONS

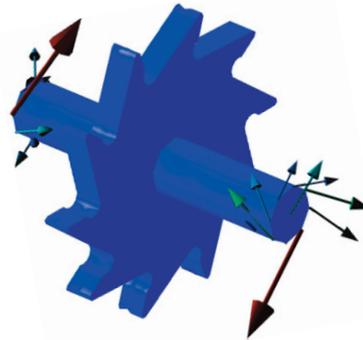
- Structured meshes for linear and quadratic elements including: triangular, quadrilateral, hexahedral, prism and tetrahedral meshes.
- Unstructured meshes are automatically generated based on quality and spacing criteria defined by the user (or using a background mesh). This includes:
  - Triangular, quadrilateral circles, spheres, and tetrahedral meshes (either linear or quadratic elements).
  - Mesh generation is carried out after all data have been assigned to geometrical entities.
- Semi-structured volume meshes (structured in one direction) of hexahedra, prisms or tetrahedra.
- Cartesian meshes.
- Three surface meshers available:
  - RFAST: mesh in the parametrical space (2D).
  - RSURF: mesh in space (3D).
  - RJUMP: mesh in space a group of surfaces skipping their contact lines as specified by the user.
- Boundary Layer Mesh in 2D and 3D.
- GiD allows to generate large meshes in a fast and efficient manner.
- Mesh edition utilities: mesh refinement, edge collapse, smoothing, etc.

### VISUALIZATION OF NUMERICAL RESULTS

- Contour and vector plots, deformed shapes, isosurfaces, surface extrusion using a result and beam diagrams from static and dynamic analysis.
- Visualizable on original and deformed meshes.
- Visualization on several meshes for adaptive solutions.
- Several rendering modes (reflection, transparencies...)
- Animated sequences.
- 3D cuts over all kind of meshes.
- Several graphs types: point, line, boundary.
- Coloured stream lines and ribbons according to any result.
- Import of neutral FEMAP® and Tecplot® results, NASTRAN® and 3dStudio meshes.

## MAIN ADVANTAGES

- A single environment (completely graphical) for both pre and postprocessing
- Conditions applied over geometry or mesh entities
- Intuitive interface (conditions are easy to create and edit)
- All the GiD tools are available



Detail Of The Total Constraint Forces On The Axle Of The Cogwheel

**Free Full Version** for a month can be downloaded at: [www.gidhome.com/gidplus](http://www.gidhome.com/gidplus)

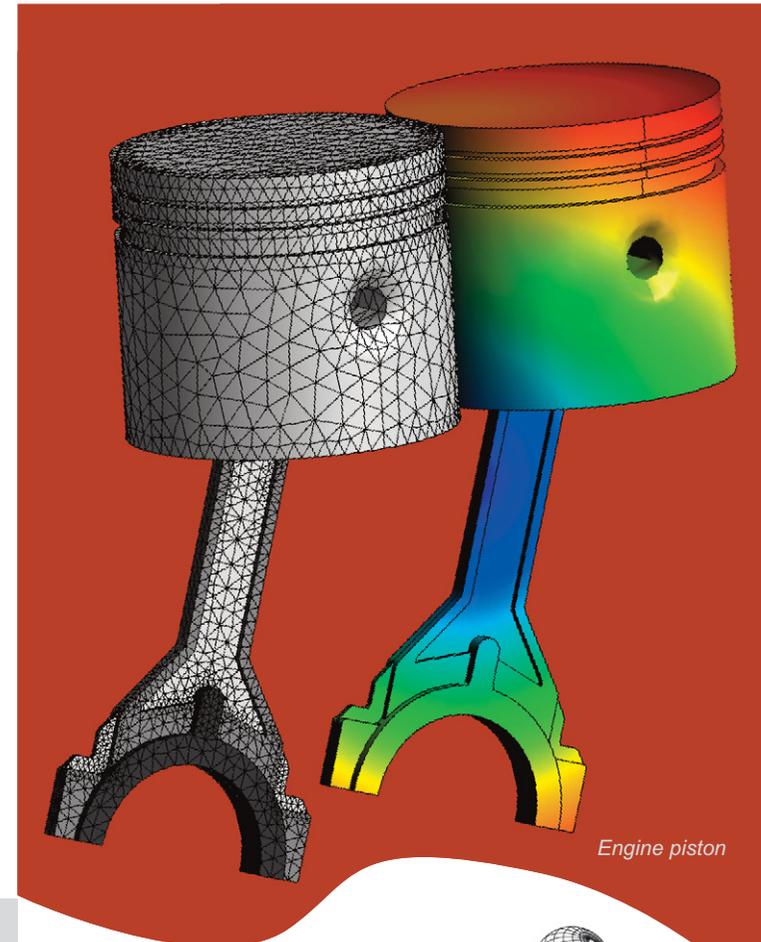
**Best Quality/ Price Ratio:** Interface Price 550 € (+16% IVA if applicable) plus GiD's competitive price makes it affordable for individuals and organizations, check it at: [www.gidhome.com/order](http://www.gidhome.com/order)

**How to Buy It?** For details and orders contact ([gid@cimne.upc.edu](mailto:gid@cimne.upc.edu)) or go to the online shopping center through [www.cimne.com/tiendaCIMNE](http://www.cimne.com/tiendaCIMNE) Resellers, please contact Compass S.A. ([info@compassis.com](mailto:info@compassis.com))

**More Information** available at: [www.gidhome.com](http://www.gidhome.com)

Save time on **NASTRAN** simulations with **GiD**

- The personal pre and post processor -



Engine piston

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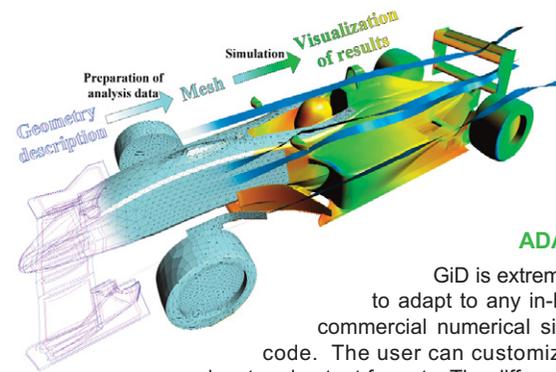


## WHAT'S GiD?

GiD is a pre and postprocessor developed by CIMNE, International Center for Numerical Methods in Engineering, located in Barcelona (Spain). GiD has been designed as a universal, adaptive and user-friendly graphical user interface for geometrical modeling, data input and visualization of results for all types of numerical simulation programs. Typical problems that can be successfully tackled with GiD include most simulations in solid and structural mechanics, fluid dynamics, electromagnetics, heat transfer, geomechanics, etc. using finite element, finite volume, boundary element, finite difference or point based (meshless) numerical procedures.

GiD is ideal to be used in a multi-user environment such as universities, research centers and enterprises for development and applications of different numerical simulation programs.

**UNIVERSAL:** GiD can generate all the information (structured and unstructured meshes, boundary and loading conditions, material types, visualization of results, etc.) required for the analysis of any problem in science and engineering using numerical methods.



### ADAPTIVE:

GiD is extremely easy to adapt to any in-house or commercial numerical simulation code. The user can customize GiD's input and output formats. The different menus can be tailored to fit any specific need. A deep integration of any code with GiD is possible. The analysis process can be also be started monitored and stepped from within GiD.

**USER-FRIENDLY:** The development of GiD has been focused on the user needs and on the simplicity, speed, effectiveness and accuracy required at input data preparation and results visualization levels.

**GiD the universal, adaptative and user friendly pre and post processing system for computer analysis in science and engineering**

## NASTRAN SOLVER

- NASTRAN® is a powerful general purpose finite element analysis (FEA) solution originally developed for NASA® in the late 1960s.
- Includes linear statics, normal modes, buckling, heat transfer, dynamics, frequency response, transient response, random response and response spectrum analysis.
- NASTRAN® can handle any material type from plastic and metal to composites and hyperelastic materials.
- Now NASTRAN® source code is integrated in a number of different commercial packages: MSC Nastran® (developed by MSC Software), NEi Nastran® (Noran Engineering, Inc.) and MI Nastran® (Macro Industries Inc.)

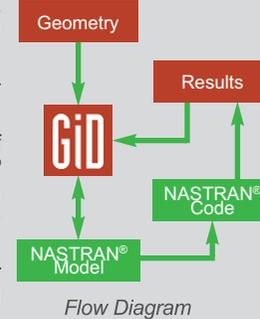
## INTERFACE FLOW

To define a NASTRAN® problem, user can create the geometry with the GiD CAD tools or import it from a common format and repair it.

Conditions can be applied over geometry or mesh entities (i.e. before or after meshing).

The user has also the possibility of importing an already existing NASTRAN® model (geometry, mesh and conditions) in order to modify its parameters with the help of the GiD-NASTRAN interface.

After sending the input file to the solver directly from the interface, the post processing data can be loaded without exiting the program.



## PREPROCESSING CAPABILITIES

- Isotropic, anisotropic, nonlinear, elasto-plastic and thermal materials available.
- User can define several load cases and combine them following a predefined scheme.
- Dynamic Analysis with Transient or Modal formulation.
- Natural frequencies of a structure.
- Different local axes definition techniques.



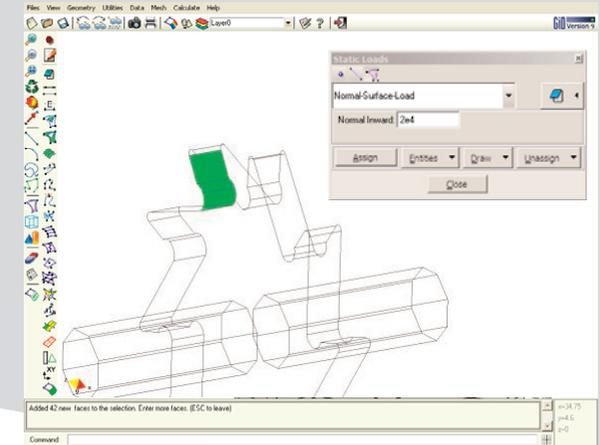
Example Of Property Window

- Beam sections library included
- GiD-NASTRAN interface supports the following elements:

- Bar
- Beam
- Curved Beam
- Tube
- Viscous Damper
- Spring
- DOF Spring
- Shear Panel
- Membrane
- Bending only
- Plate
- Plate strain
- Tetrahedron
- Hexahedron

## GiD NASTRAN GRAPHICAL INTERFACE

- GiD-Nastran interface allows the user to pre and postprocess NASTRAN® problems with the help of a single environment.
- Both Static and Dynamic analysis are available.
- Conditions can be assigned either over geometry or mesh entities.
- Working with beams is very intuitive and automatized (conditions can be applied over the lines).
- Shell and solid elements take advantage of the powerful GiD meshing features.
- Able to generate suitable NASTRAN® input files easier and faster.
- Supports MSC Nastran®, NEi Nastran® and MI Nastran®.
- Available for Windows®, Linux® and UNIX® on 32 and 64 bits and Mac OSX® on 32 bits.



Assigning Static Loads To A Geometry Selection

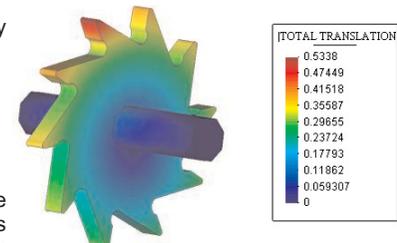
## POSTPROCESSING CAPABILITIES

Results over nodes and elements can be imported using the GiD-NASTRAN interface in order to postprocess them by taking profit of all the GiD capabilities.

The formats supported by the interface are:

- FEMAP® ASCII (.neu)
- FEMAP® binary (.fno)
- NASTRAN® (.pch)

A special option allows the user to smooth the results over shell elements when importing the .pch files.



Contour Fill Of The Total Translation