

GEOMETRIES DATABASE

The geometries database is a convenient way to work with geometrical objects and it can be effectively used to manage different CAD objects (*Fig. 1*).

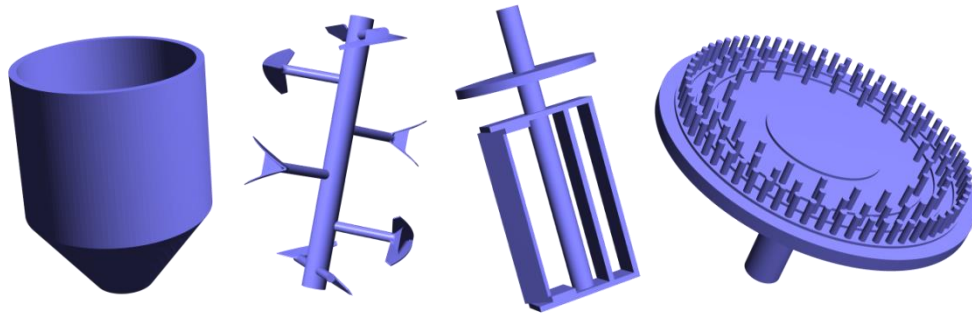


Figure 1. Examples of geometrical objects supported in MUSEN.

Geometries database is saved into a file with extension *.mgdb and can contain one or several objects. Graphical user interface (*Fig. 2*) has 9 different buttons:

- *New* – create new database;
- *Load* – load database from existing file;
- *Save* – save database into currently opened file;
- *Save as* – save database into new file;
- *Up/Down* – allow to change the order of geometries in the current database;
- *Import* – import new geometry from STL file (see description below) into the database;
- *Remove* – remove selected object from the database;
- *Export* – export selected object as binary STL file.

MUSEN supports STL (STereoLithography) file in ASCII and binary representation. New geometries can be created in CAD programs, e.g. FreeCAD (www.freecadweb.org) or MeshLab (www.meshlab.sourceforge.net).

Geometries in the STL format are represented as a set of triangular planes. In the table (*Fig. 2*) the number of triangular planes (faces) is listed. The large number of planes (very complex geometries) can slightly slow down calculations. In the table also the size of the bounding box L x D x H is listed. This allows roughly estimate size of the geometrical object.

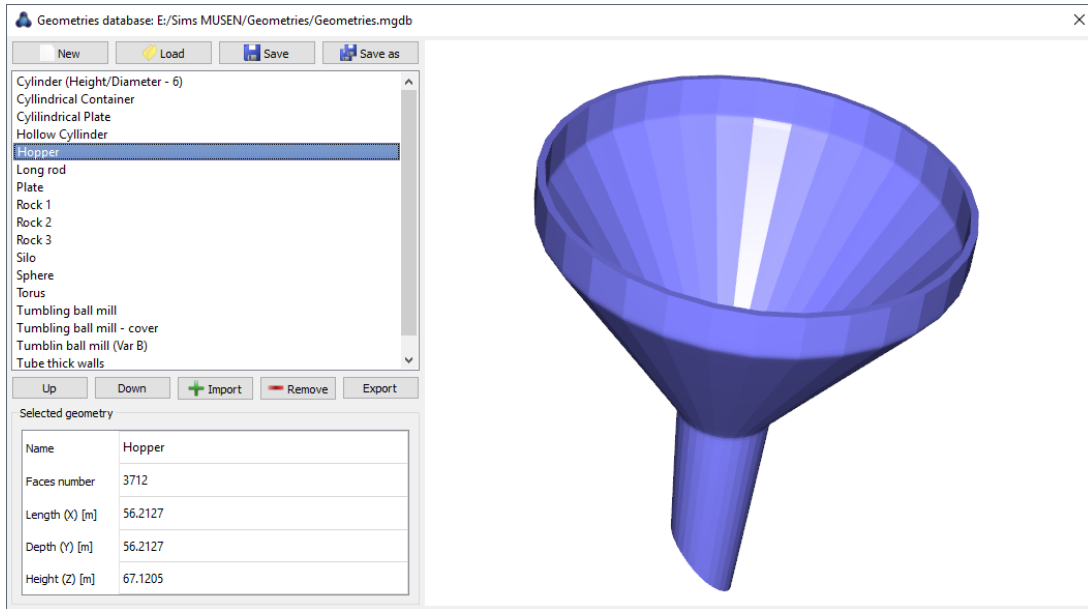


Figure 2. Graphical user interface of Geometries Database.