Materialise Magics²⁴

What’s new
Index

UX/UI Improvements
- General enhancements
- Annotations page
- Performance improvements

Magics RP
- Chamfer
- Editing enhancements
- New algorithms
- Honeycomb structures
- Part comparison

- Other improvements
- STEP geometry workflow

Support Generation (SG)
- Transfer support
- General enhancements
- Check slices distribution

Metal Support Generation (SG+)
- Angled support preview

Sinter Module
- Performance improvements
- Nest by bounding box
- Shape Sorter
- Check slices distribution

Magics Simulation
- Usability improvements
- Technical improvements
UX/UI improvements
General enhancements

Selected parts on the Part List page
Visualize, at once, the number of selected parts compared to the total number of parts present in the scene.

View cube
Quickly recognize the current scene view and easily select the desired 2D or ISO view.

Batch rename
Assign the same prefix or suffix to all the selected parts at once via the Rename Part command.
Annotations page

- Text and drawing annotations are now combined in one page.
- Improved flow for creating and editing your annotations faster.
- Annotations can now be hidden separate from the measurements.
Performance improvements

up to 3x  Faster results in Boolean operation

This also affects other operations including:

- Hollow
- Perforator
- Cut
- Honeycomb Structures
- Supports trimming
Magics RP
Chamfer

Create a bevel on fragile sharp edges of your parts to optimize their design for Additive Manufacturing (AM).

- Select multiple edges or entire contours to create a bevel at once.
- Choose between 3 different methods: equal distances, two distances, or a distance and an angle.
Editing enhancements

Fillet
Select edges from different contours and round them at once.

Lap joint cut
Preview the lap joint cut and adjust the parameters before applying the final cut.
Improved algorithms

**Hollow**
- Improved results accuracy
- Faster operation
- Better results on sharp edges

**Shrink-wrap**
- Improved wrapping of small elements which are now retained.
- Increased accuracy in preserving of part edges.
- Faster operation
Honeycomb structures

- Create a honeycomb structure only for a desired depth
- New “Infill depth” parameter
- Get better results thanks to the integration of improved hollow operation.
- Smoother corners
- Improved mesh and reduced number of triangles on flat surfaces.
Part comparison

Compare two meshes to analyze their shape deviation by using Part Comparison tool (available in the Analyze & Report ribbon).

- Before-and-after versions of the same part when fixing or editing them
- Parts from different design iterations
- Deformed and original parts from simulation data*

*Magics Simulation license is required
Other improvements

**Machine properties**
Lock the position of your quality parts on the scene when performing automatic placement and 3D Nester operations and save the desired behavior in “Default Parts” page in Machine Properties.

**Label: Data Matrix**
Get more control on both pixel height and engraving label depth, to customize the Data Matrix label to your needs.

**Mass label**
Use negative distances between parts to arrange them closer together and create a higher density on the platform.

**3MF Export**
Convert the Magics generated support to mesh when exporting a part and its support.
**STEP geometry workflow***

- Maintain and visualize the original STEP file for easier communication with your designer or CNC Engineer.

- Save time in post-processing by preserving the perfect alignment between STL model for AM and STEP model for CNC.

- Keep your original STEP geometry as a reference part throughout the Magics workflow (from part import to platform export).

*All Import Module license is required
Support Generation (SG)
Transfer support

- Save time by automatically transferring support from one to multiple parts.

- No need to redesign support structures while printing parts from different design iterations or counter-deforming a part based on simulation results*.

- Get immediate feedback on which support structures have been transferred and which ones are newly generated.

*Magics Simulation license is required
General enhancements

**Baseplate**

- Automatically generate a baseplate for all the parts present on the platform for easier part removal after the print.

- Adjust the baseplate properties to your needs from the “Support Generation parameters” page inside the Machine Properties.

**Support Transparency**

- Easily set the visualization of support structures to transparent, to better check the part from all possible viewpoints.

- Command is present by default in the “View modes” composite command.
Check Slices Distribution

Analyze your slices data faster thanks to the new dynamic chart.

- Quickly visualize Z height and slice area values by hovering over the chart with the mouse.
- Scroll and zoom in on the chart for more detailed analysis.
Metal Support Generation (SG+)
Angled support preview

Interactively angle a support and quickly preview the support structure when it exceeds the self-supporting angle.

“Surface angle” parameter is accounted for when assessing self-supporting structure. This parameter is defined on the “Support Generation Parameters” page in “Machine Properties”.

Sinter Module
Performance improvements

up to 30x Faster nesting process of a platform

<table>
<thead>
<tr>
<th>File size</th>
<th># Parts</th>
<th>Magics 23.01</th>
<th>Magics 24 Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 MB</td>
<td>887</td>
<td>5 min 04 s</td>
<td>10 s</td>
</tr>
<tr>
<td>250 MB</td>
<td>372</td>
<td>2 min 35 s</td>
<td>22 s</td>
</tr>
<tr>
<td>500 MB</td>
<td>463</td>
<td>7 min 42 s</td>
<td>45 s</td>
</tr>
</tbody>
</table>
Nest by bounding box

- Nest your platforms by using the bounding box of the parts.
- Benefit from a fast nesting solution when time is the priority.
- Nest all your platforms in just a few seconds or less.
- Adjust the nesting to your needs with a comprehensive set of parameters.
- Perfect solution while nesting a platform with small parts.
Shape Sorter

Improved dialog organization will now allow you to also:

- Enable part rotation, according to the master part orientation.
- Enable part translation, without changing their orientation.
Check Slices Distribution

Analyze your slices data faster thanks to the new dynamic chart.

- Quickly visualize Z height and slice area values by hovering over the chart with the mouse.
- Scroll and zoom in on the chart for more detailed analysis.
Magics Simulation
Usability improvements

Job Manager

- Automatically run all your prepared simulation jobs in a series thanks to the new jobs queue.
- Interactively change the queue order by dragging and dropping.

Results Settings

- Get full control over simulation results visualization.
  - Fix the plot range to minimum and maximum values of all increments.
  - Set the value to 0 in the range center.
Technical improvements

Voxels size prediction

- Get suggestions on the optimal voxel size based on part geometry.
- Edit voxel size in all three directions: X, Y, Z.

Shrinkline visualization

Improved and clearer visualization of shrinklines.
For more information, contact your local Materialise office.

materialise.com/contact-locations