**New features and improvements in VeraCAD 4.0**

In VeraCAD 4.0 the user interface has been completely redeveloped and raised to a state of the art standard.

So far VeraCAD was operated by pop-up windows mostly, in V4.0 nearly all menus and dialogs disappeared. The project explorer is a hierarchical tree view (left side) and furthermore is used for project navigation. The technology parameters are edited in a property sheet (right side). Any modification of parameters instantly results in a recalculation of calibration plan and the associated 2D- and 3D-geometries are updated. Thereby the effects of parameter changes can be verified directly or an alternative scenario is quickly tested.

The project explorer window as well as the parameter property sheet remain visible all the time. Design work is more intuitive, because a selected geometry (cross-section, roller product, mass distribution) is highlighted with color and markers.

Fast calculations and quick response time is obtained in V4.0 by running on all kernels of a modern CPU. Using a 4 pass rolling set the refresh time for the new 3D-geometry is not noticeable.

A first impression of the completely redeveloped user interface in VeraCAD 4.0 gives the comparison of the "view tool segments" in VeraCAD 3.8 versus V4.0


VeraCAD 3.8   VeraCAD 4.0
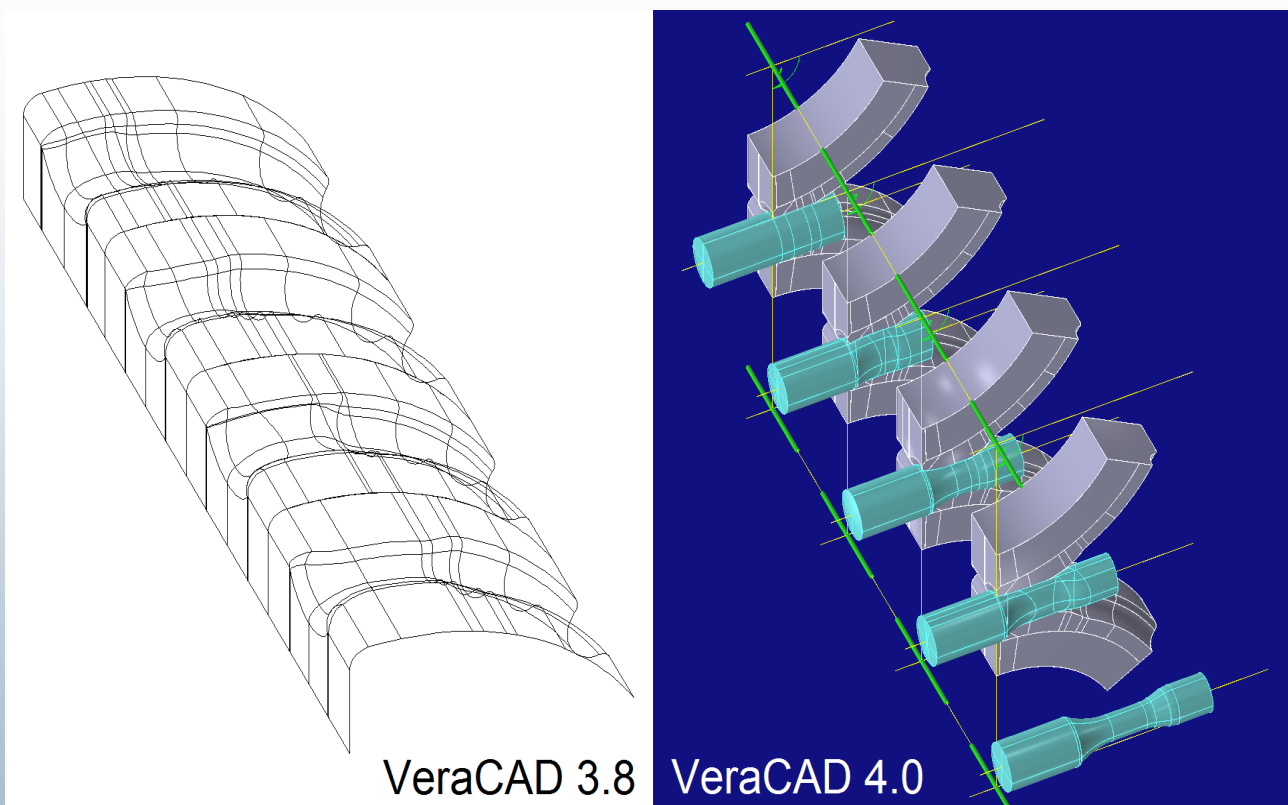
Using less windows, views and dialogs makes project work more intuitive. The 3 basic windows have a functionality as follows:
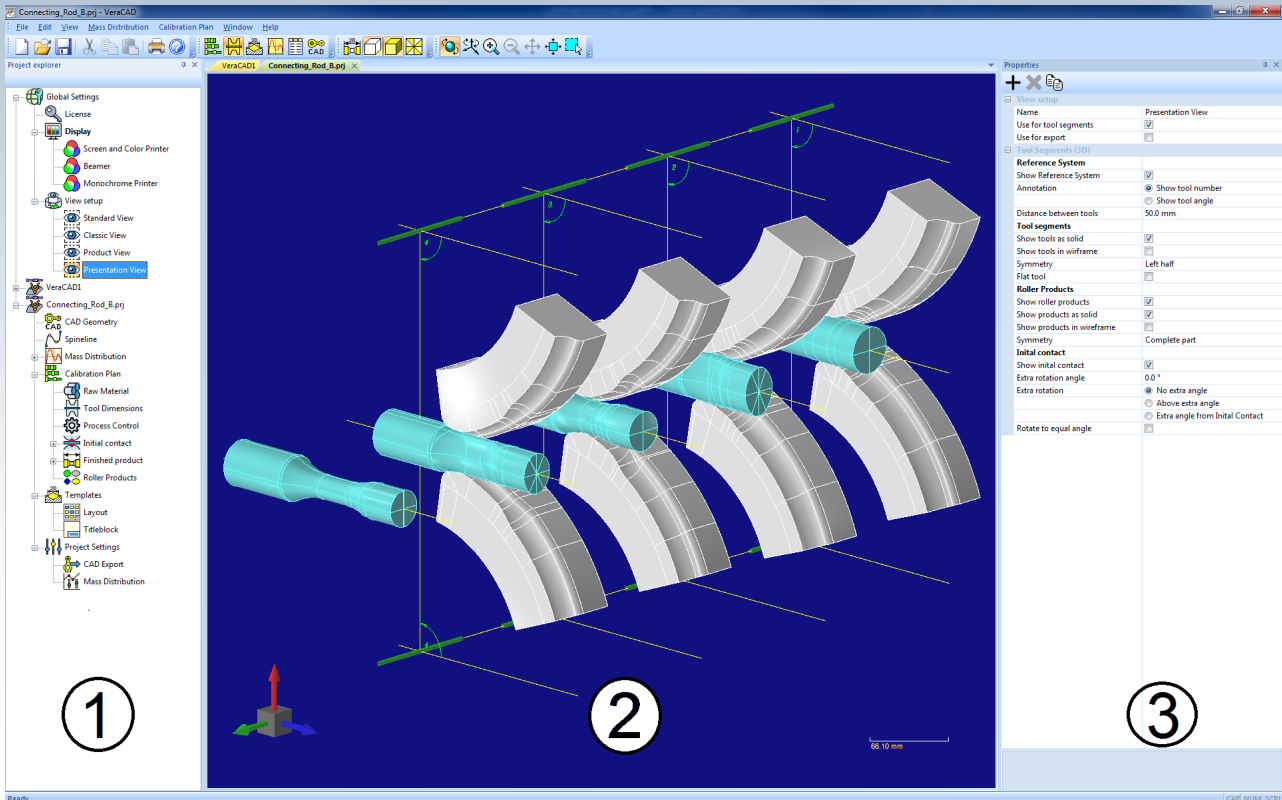
(1) On left side you will find the project explorer. It also serves as project navigation. Typical nodes are, raw material, tool dimensions, mass distribution, finished part or calibration plan. A selection in the tree view opens the parameter property sheet (3)

(2) The main window displays the geometry of roller products, tool segments or CAD-Geometry. Different display options are available (wireframe, shaded or triangulation).

(3) The third window takes technology-parameters for each project detail or design step. A re-markable improvement is, after any modification of parameters, the whole calibration plan is re-calculated immediately, all geometries rebuild and 2D or 3D-view refreshed. The original menu item "Create geometry" is obsolete
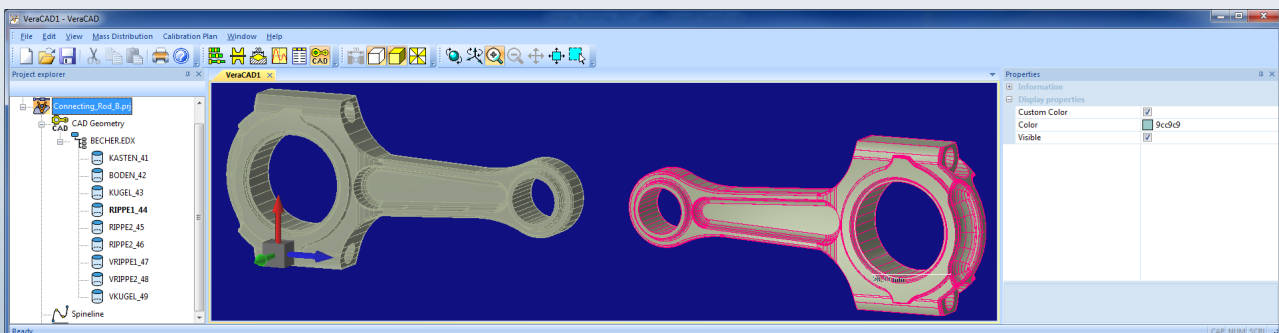
Above: CAD-Import can read any 3D-geometry via standard interface (IGES, VDAFS, STL, EDX).

The graphic window displays the geometry of roller products, tool segments and imported CAD-geometry using different view modes (wireframe, shaded, triangulation, 2D and 3D).
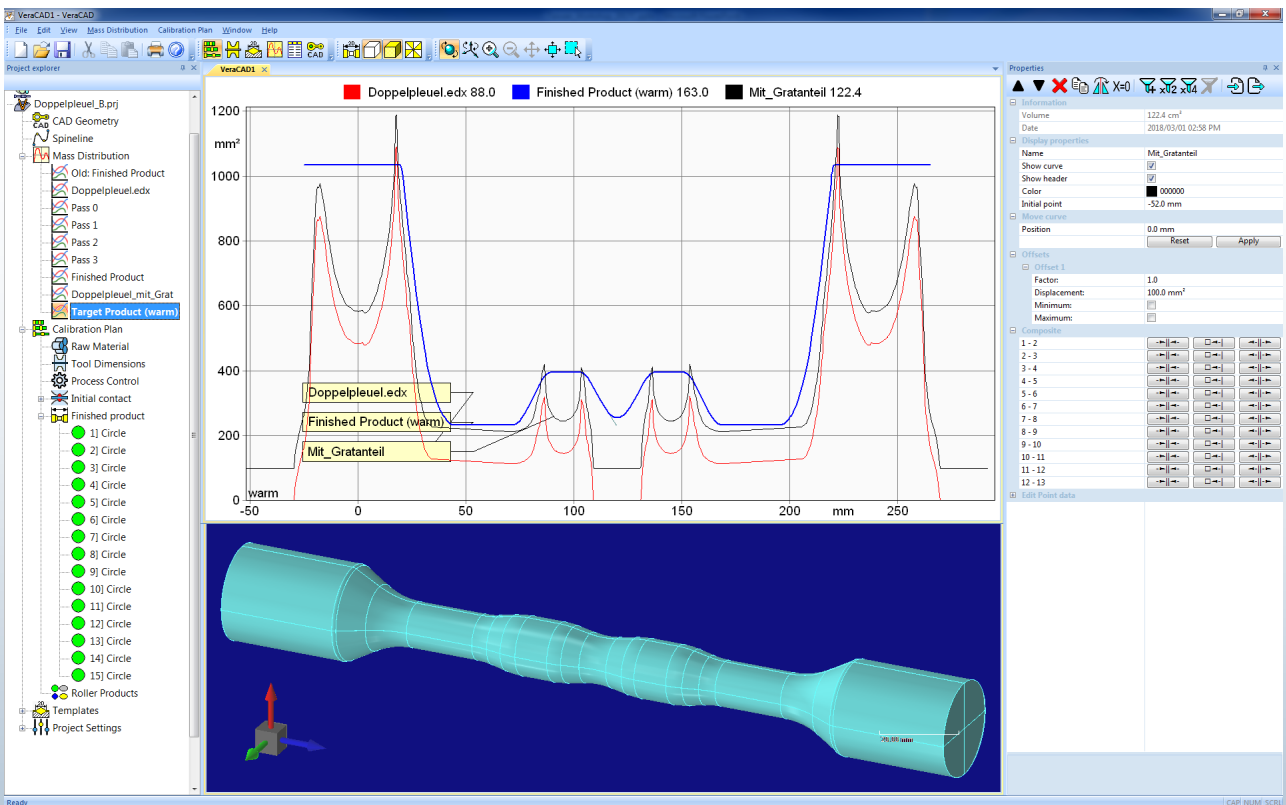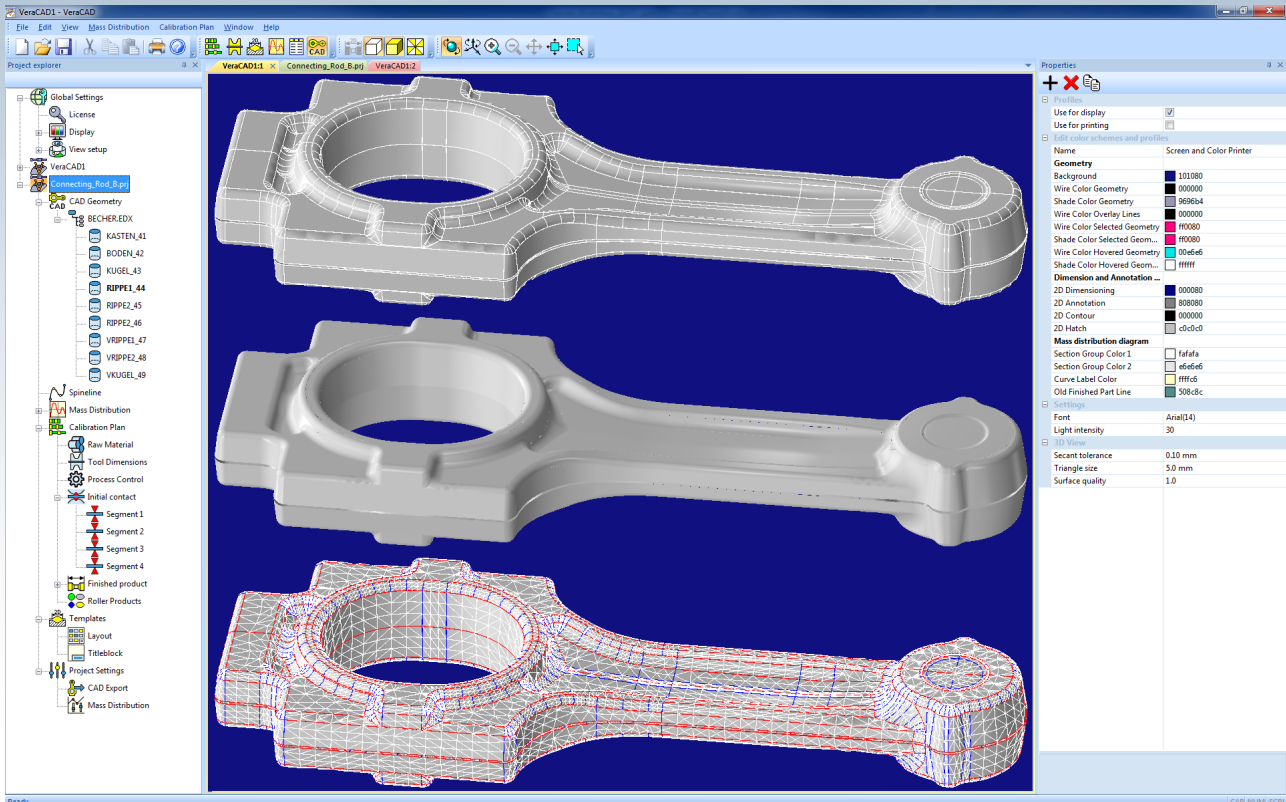

From the 3D-geometry a mass distribution diagram is derived (red line).

A filter function will add extra material for the flash (black line).

The finished part is digitized and created automatically (blue line).

In order to create mass distribution diagram for bend parts, a spine line has to be defined first (yellow line). This can be done by digitizing points along a center line. After this step the mass distribution is calculated, following the bending line. In the mass distribution diagram the bending line appears unwounded on x-axis.

Mass distribution for bend parts
Using "Spine Line" option
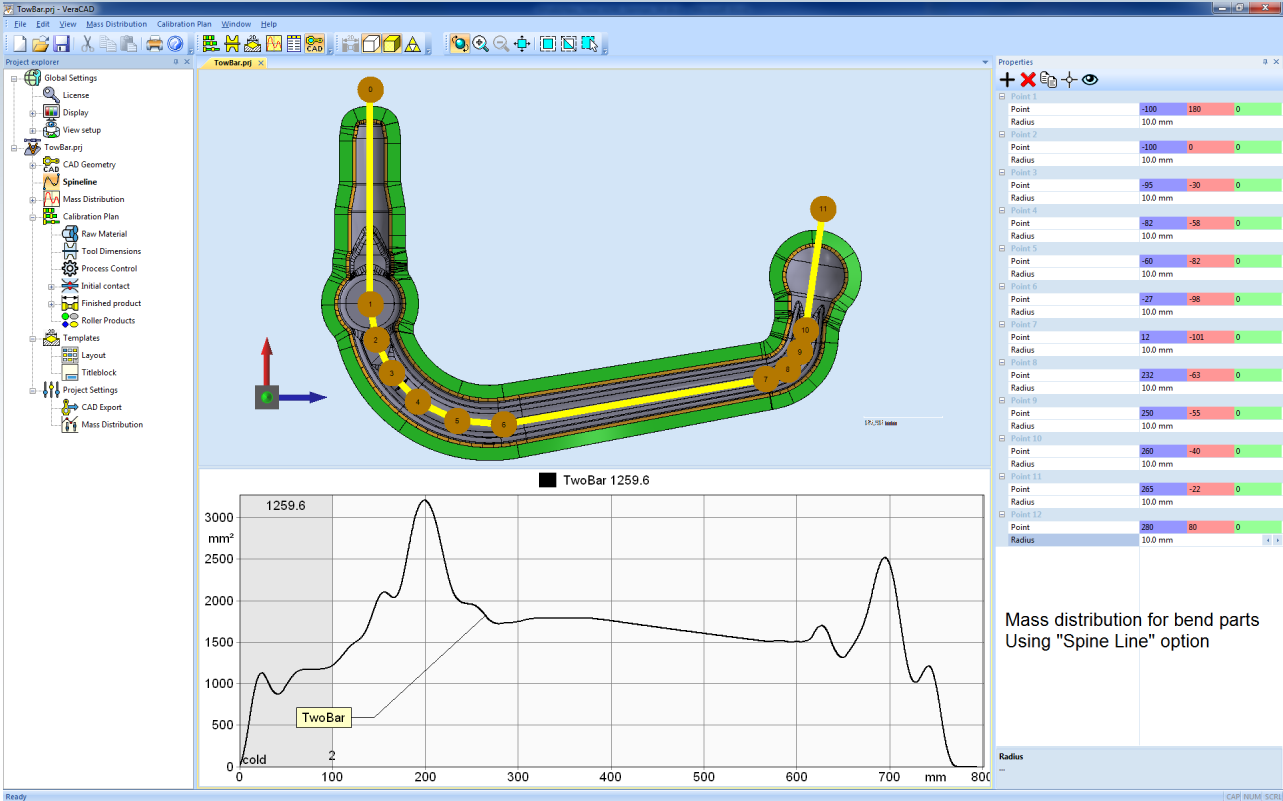
The view "calibration plan" provides a 3D representation (2) as well as a 2D drawing (4) with full dimensioning.   In project explorer you click on a cross-section (1)+(2) an edit its parameters in the property sheet on the right side (3).
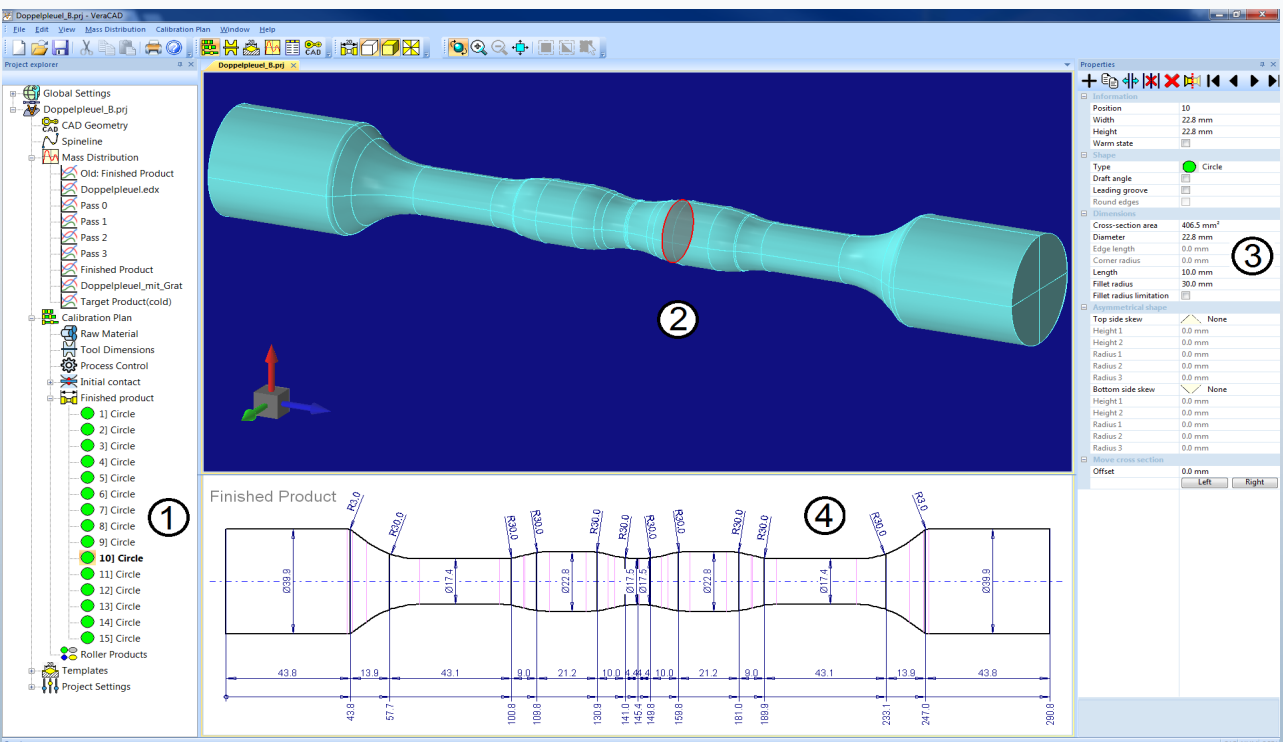
Any change of cross-section, diameter, radius a.s.o. will update the geometry at once. New in VeraCAD 4.0 is asymmetry for all cross-section types.
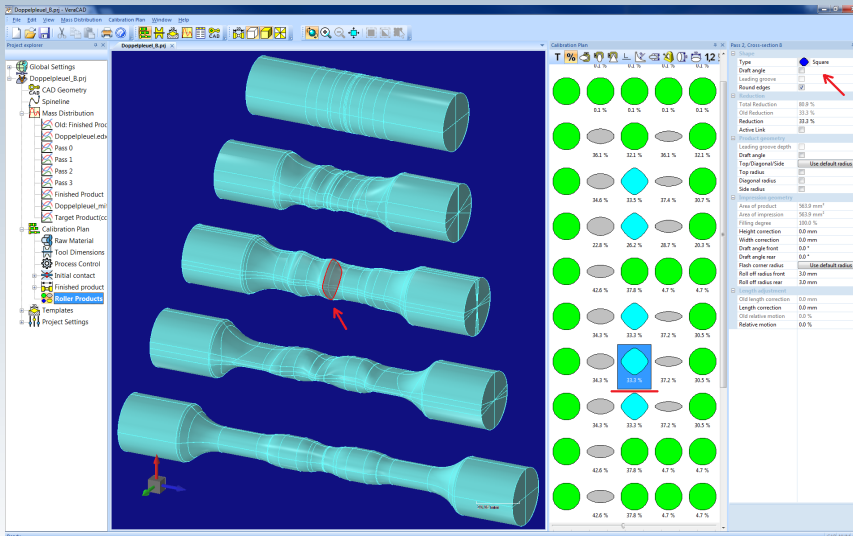

The design step "edit calibration" offers a new navigator window. Selection of any cross-section corresponds with the 3D-graphics. (s. transparent cross-section mark).

The well known toggle between technology-parameters is placed above in the toolbar. Direct access to all technology parameters is provided by the property window on the right. .

Very useful during the design work for any cross-sections, is the concurrent display of a dimensioned 2D sketch and a marker line in the 3D tool segment.

The 2D template can be styled with multiple options. Previous pass contour (red), product contour (blue), impression contour (black). In addition the dimensioning options are us-
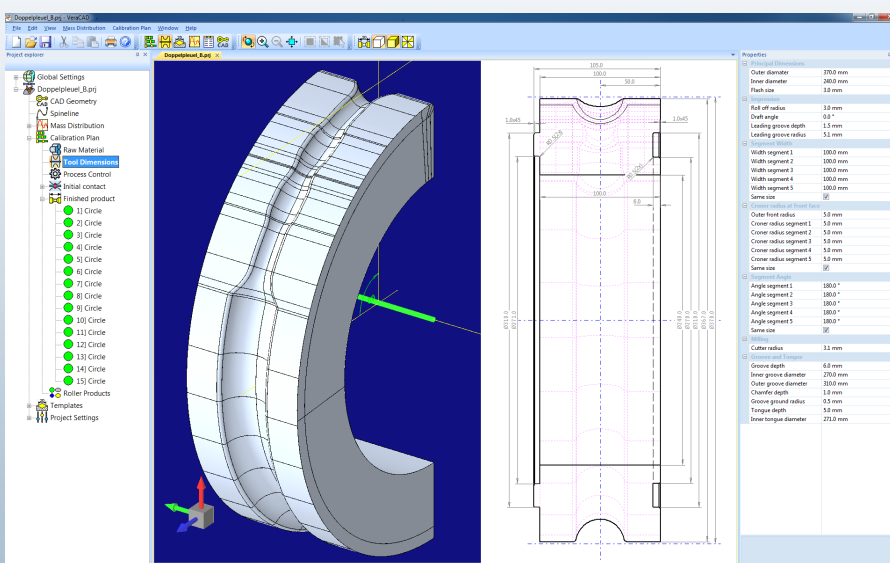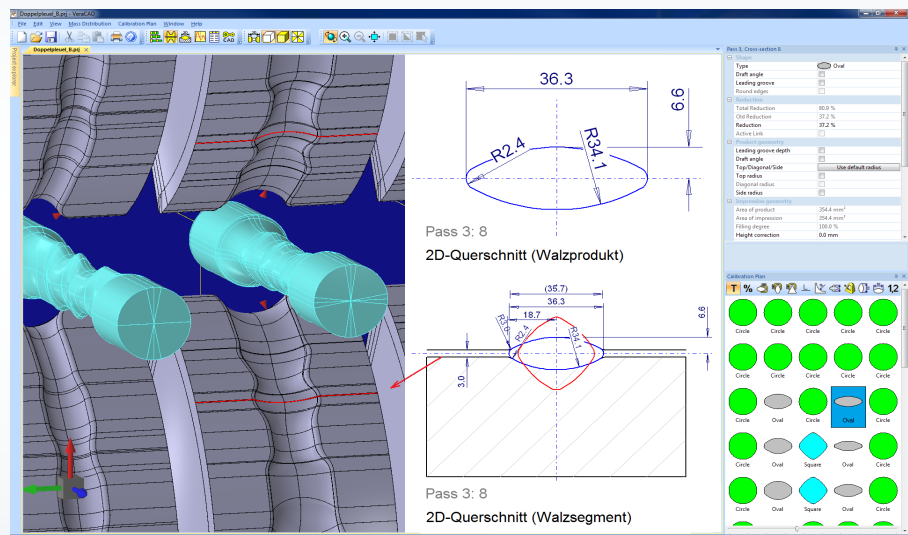

One tool segment is shown as 2D-drawing on the left side. All dimensions are updated automatically after any parameter change. Changing the rolling machine diameter results in a complete recalculation of calibration plan. This is important, because the machine diameter has significant influence to cross-section spreading during reduction. VeraCAD takes these data from the „reducer roll database", which is part of our research work.

The template view offers predefined layouts for 2D drawings. Center cross-section, front-view, side view and cross-sections can be included in the drawing and are automatically positioned.

The predefined layout is available for tool segment, finished part, complete calibration plan (see blue selection on right side).

User options will adjust the drawing style or title block

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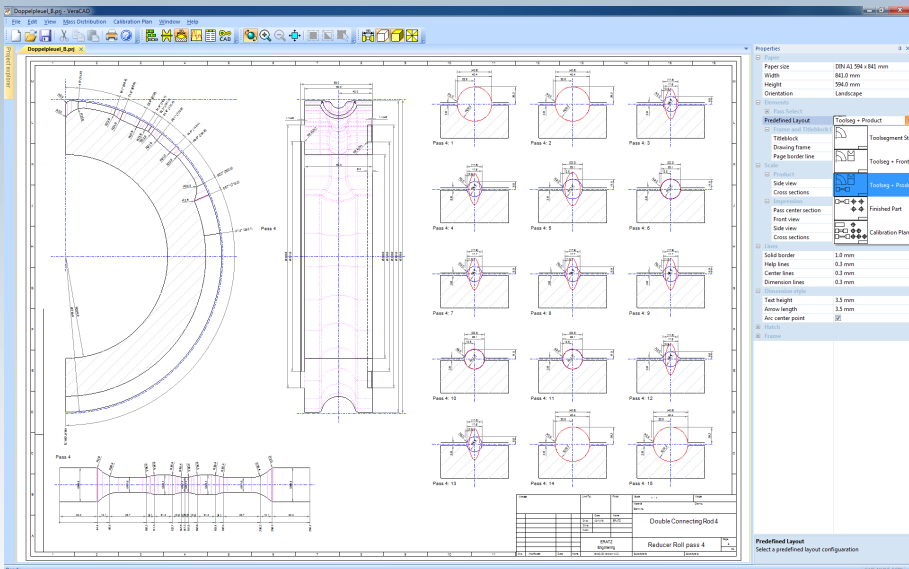
As preparation of a FEM-simulation the correct tool rotation at the moment of initial contact is important (tool rotation angle + workpiece position).

VeraCAD4.0 calculates this initial contact and displays it in the view tool segments together with the roller products (red cone).