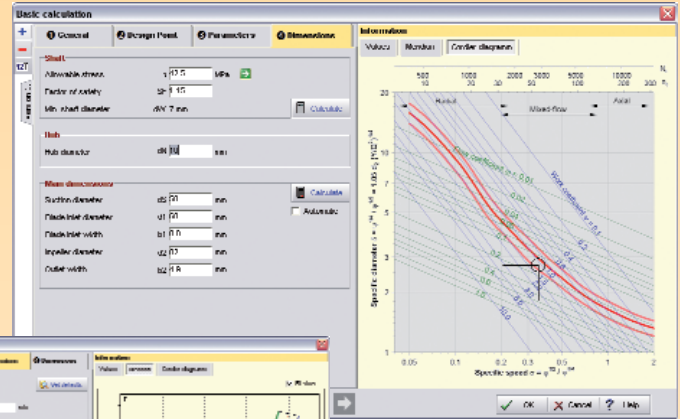
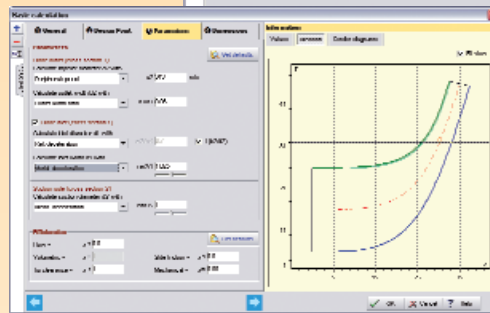
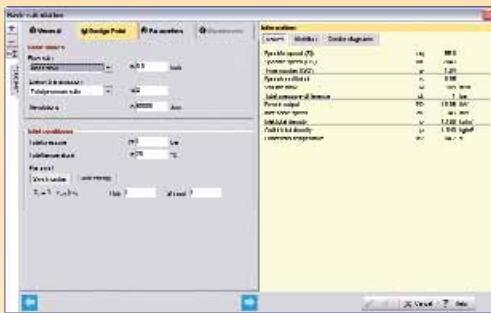


## COMPRESSORS – MAJOR DESIGN STEPS

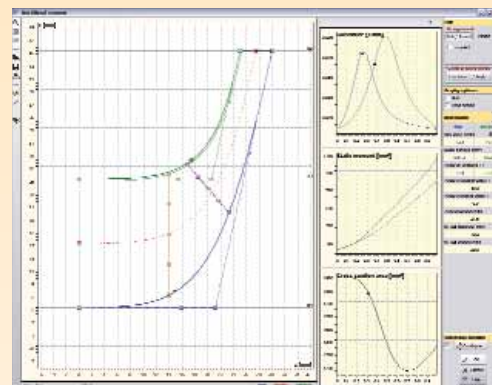
### 1. Main dimensions

- Computation of the compressor impeller main dimensions: hub diameter, suction diameter, impeller diameter, outlet width
- Use of built-in or user-defined approximation functions for determination of compressor parameters



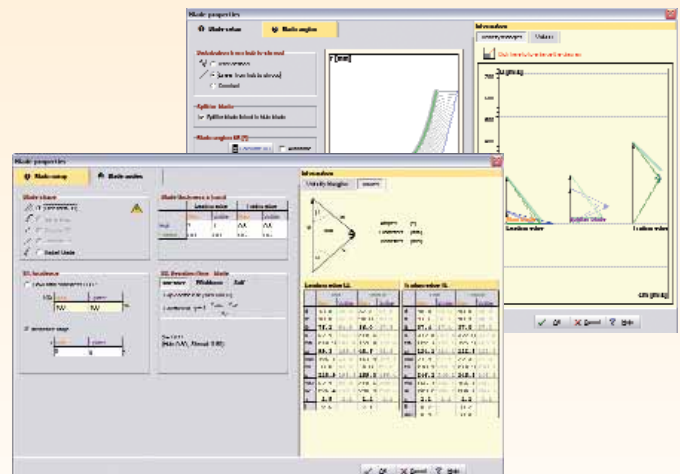
### 2. Meridional contour

- Design of meridional contours by Bezier-splines, arcs and lines or user-defined poly-lines
- Positioning of straight or curved leading edge
- Informational display of important geometric parameters



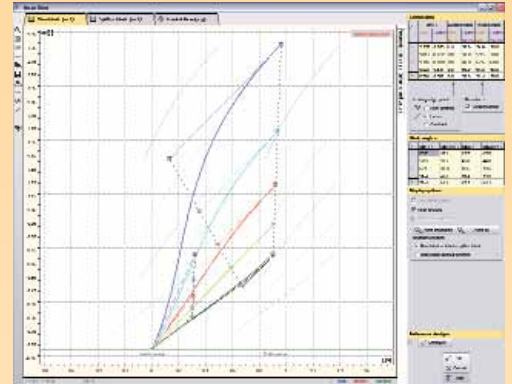
### 3. Blade angles

- Selecting blade shape: Free form 3D, General 2D, Circular 2D, Straight 2D, Ruled surface blades, Radial element blades
- Blade design on 2 to 11 meridional flow sections
- Computation of optimal blade angles considering flow contraction and slip factor
- Presentation of velocity triangles and tabular listing of all velocity components as well as flow angles



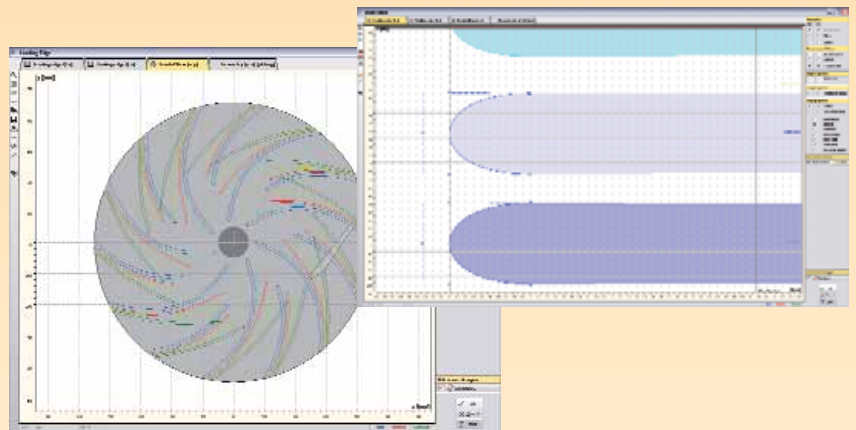
#### 4. Mean lines

- Definition of mean lines by Bezier-splines or user-defined poly-lines
- Coupled or non-coupled manipulation of blade shape
- Free choice to determine the wrap angle
- Presentation of blade angle distributions



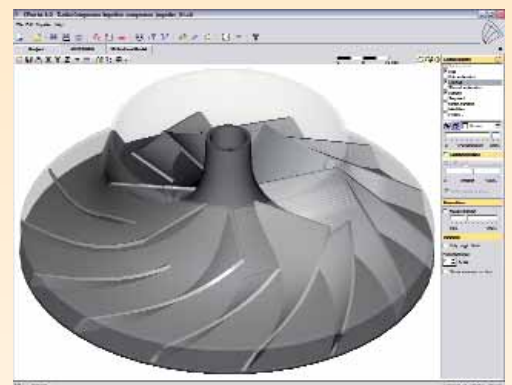
#### 5. Blade profiles, leading edges

- Definition of mean lines by Bezier-splines or user-defined poly-lines
- Coupled or non-coupled manipulation of blade shape
- Free choice to determine the wrap angle
- Presentation of blade angle distributions



#### 6. 3D-views

- Dynamic 3D-representation (rotate, move, zoom)
- Partial views
- Cutting plane
- Assembly view



#### 7. Data export

- Neutral formats like IGES, STEP, DXF
- Export of points, curves and surfaces
- Direct interfaces to major CAD- and CAE/CFD-systems
- Special export formats available on customer request

#### 8. Performance map estimation

- Computation of fundamental losses for compressor impeller and volute by proven empirical relations
- Performance curve display for different speed
- Surge line estimation
- Various possibilities to set-up and to show relevant values on diagram

