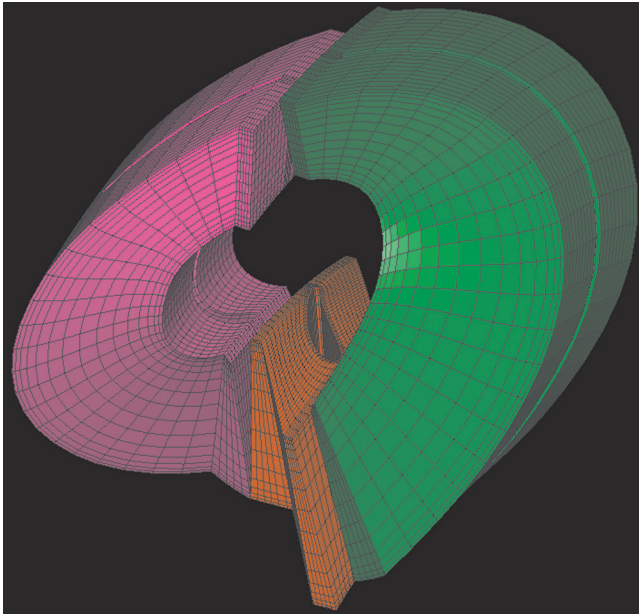


GridgenApp

A Unique Gridgen® Application



AISIN AW Automates Torque Converter Meshing



Automatically meshed pump, stator and turbine from a torque converter.

AISIN AW develops and manufactures automatic transmissions for automobiles. The increasing number and wide variety of car models entering the market today has led to increased demand for new torque converter designs. In order to cope with this situation, AISIN AW wanted to reduce the time needed for carrying out a CFD analysis of each design. We decided to focus on the mesh generation portion of the process, since that was the most time- and labor-consuming of all.

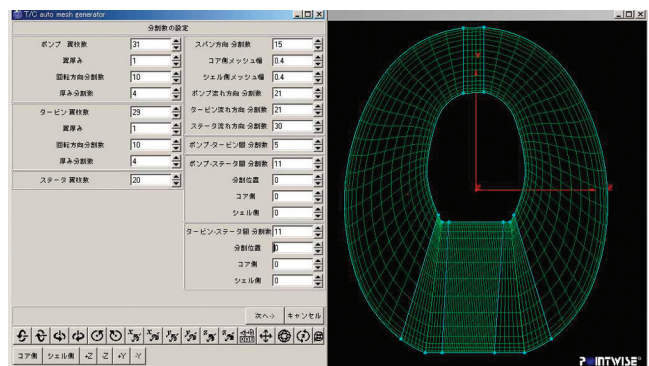
The GridgenGlyph scripting language in Gridgen V14 seemed ideal for this task. With a little help from VINAS Co., Ltd., the Gridgen distributor in Japan, we developed an automatic mesh

generation system for torque converter models. In this system, parameters such as size and number of cells and number of blades in a blade row are input in one window, and a complete CFD-ready mesh with boundary conditions is automatically generated for the turbine, pump and stator of the torque converter.

This system enabled us to reduce the time needed for generating a high-quality mesh for one torque converter to about five minutes. In addition, by using this system, mechanical designers who are not so familiar with CFD meshing can now generate high quality mesh data for CFD analysis. This frees up CFD expert engineers for more demanding analyses.

We now utilize this system throughout our design teams to cope with our increasing number of design projects. The contribution of this system in reducing the time needed for designing torque converters is very important to us.

Courtesy of AISIN AW Co., Ltd./Mr. Ken Yamaguichi, Technical Division.



AISIN AW's torque converter mesher.