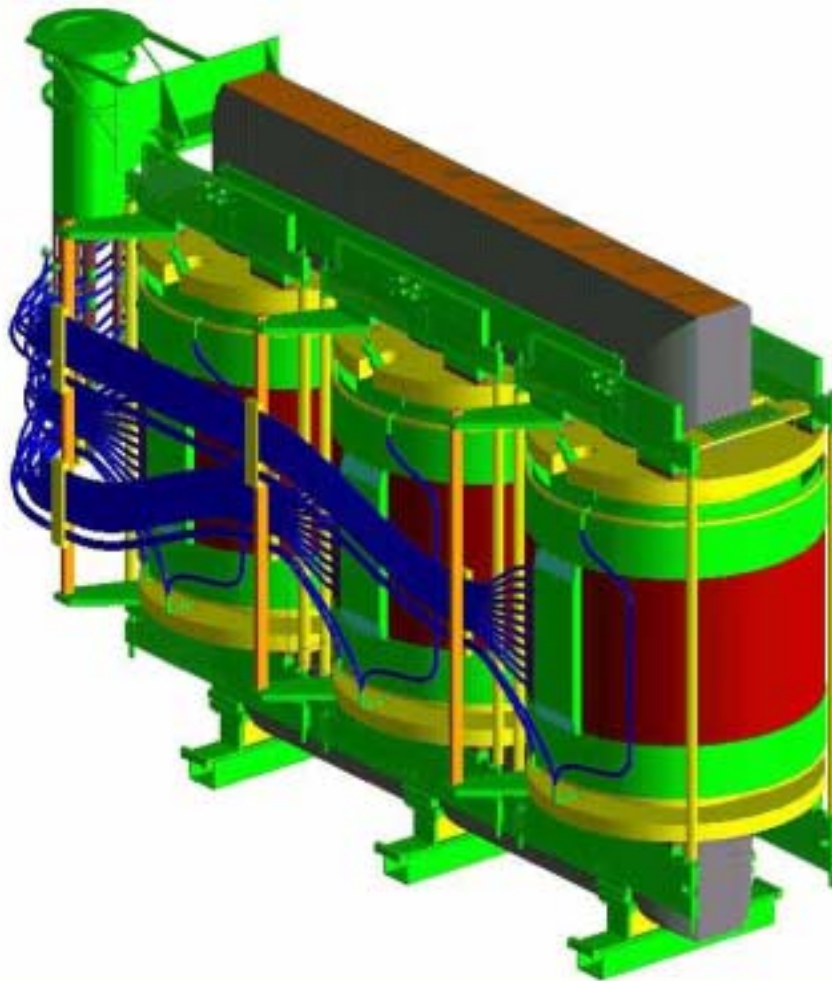


## Design

Smit Transformatoren BV has an ongoing engineering evaluation process for constantly improving and upgrading its design programs.

Recently Smit has introduced an engineering method based on a high end 3D-CAD system for the complete transformer design.



*3D-view of the active part of a transformer 150 MVA / 220 kV*



Almost all engineers now use 3D-CAD stations.  
The introduction of 3D-CAD technology was thoroughly prepared over the past 3 years.  
A team of experts worked fulltime on the required transformer models and dedicated modules.

The great advantages for Smit as well as its customers are:

- constant quality because of modular design
- large reduction of engineering time for standardized transformer designs
- reduced engineering lead time for even the most complicated transformers

## Engineering Practice

Engineering excellence achieved by Smit design engineers include many critical areas of transformer construction.

Some of those critical areas are:

### Tank design

Based on the transportation limitations of weight and dimensions.



*Transformer designed for special rail transport*

### Axial cooling channels

For undisturbed natural oil flow resulting in:

- lower hotspot factors
- a more efficient use of needed space in windings
- smaller volumes



*The use of epoxy bonded transposed cable and the application of axial cooling ducts increases the short circuit strength*

### Mechanical clamping of the windings

with a unique “Independent Coil Clamping Structure” for Large Power Transformers.

The advantages of the independent coil clamping construction are:

- mechanical forces contained in the coil clamping are not transmitted to the core
- the coil clamping can be made stronger, smaller and simpler, due to a modular design
- manufacturing tolerances are easier to achieve and maintained through the assembly process



*Detail of independent coil clamping*

**Starkstrom-Gerätebau GmbH**

Ohmstraße 10  
93055 Regensburg, Germany  
Tel +49 (0)941 7841-0  
Fax +49 (0)941 7172 1  
Email [sgb@sgb-trafo.de](mailto:sgb@sgb-trafo.de)  
[www.sgb-trafo.de](http://www.sgb-trafo.de)

**Sächsisch-Bayerische  
Starkstrom-Gerätebau GmbH**

Ohmstraße 1  
08496 Neumark, Germany  
Tel +49(0)3 76 00 83-0  
Fax +49(0)3 76 00 3414  
Email [sgb@sgb-neumark.de](mailto:sgb@sgb-neumark.de)  
[www.sgb-trafo.de](http://www.sgb-trafo.de)

**Smit Transformatoren BV**

Groenestraat 336, P.O.Box 9107  
6500 HJ Nijmegen, The Netherlands  
Tel +31 (0)24 356 8911  
Fax +31 (0)24 356 8764  
Email [sales@smit-trafo.nl](mailto:sales@smit-trafo.nl)  
[www.smittransformers.com](http://www.smittransformers.com)

**Smit Transformer Sales Inc**

100 Morgan Place Suite A  
Summerville, SC 29485, USA  
Tel 843 871 3434  
Fax 843 871 2604  
Email [info@smitusa.com](mailto:info@smitusa.com)  
[www.smitusa.com](http://www.smitusa.com)