

I - COILS SOFTWARE

GENERAL FEATURES I-COILS

3D PRO is 3D specialized production software for automatic generation of 3D Coil Assembly's, complete production documentation (sheet metal, collector, circutation) as well as CNC programs.

It is customized according to Client's:

- Construction rules;
- Connection type;
- Collector position;
- Material and geometry specification;
- Production technology.

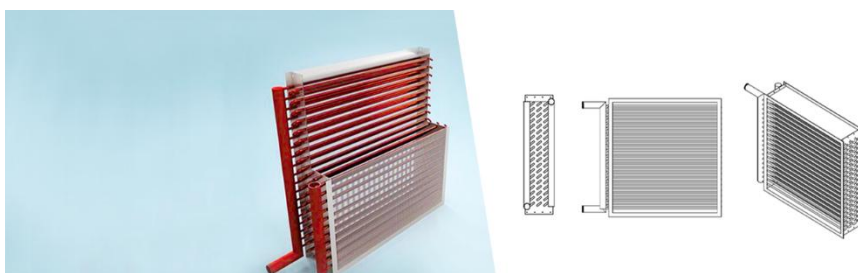
The coils are calculated with **I-COILS WEB** selection software and saved as an offer. That offer is loaded from authorized user inside I-COILS 3DPRO software, where he can choose any position inside that offer in order to start the automatic 3D process.

It is required to have **I-COILS WEB** software, in order to make coil selection according to specific customer requirements (capacity, row number, reserve, geometry, materials, air direction, connection side, coil position, header option, etc.).

All data is stored in a cloud database, and used for precise product price and dimension calculation.

The software is designed to prepare easy production coils, by having in mind Client specific production process. It can be customized in a way that during the calculation process gives solutions for easy coils.

It is able to recognize already made coils, and deliver immediately production documentation.



I-COILS 3DPRO structure is modular designed, which allows easy future updates according to customer product/production changes. Introduction of new part geometries for housing, fins, collectors or specific accessories is possible at any time.



I-COILS WEB

Calculation of finned heat exchangers through an intuitive interface with predefined filtering options and relation between input data (input rules), in order to ensure correct data entry and precise product calculation.

Following filters can be used:

- ✓ Type of Coil: heating, cooling, condensing, evaporating or steam
- ✓ Geometry
- ✓ Fins / Tube / Headers / Frame material type and thickness
- ✓ Duty
- ✓ Rows / Tubes / Circuits number
- ✓ Dimensions
- ✓ Fluid / Refrigerant temperature and flow rate data
- ✓ Air temperature and flow rate data 1.9 Connection side

DATABASE

All data used in the calculation and filter process is stored in a database, and can be updated at any time by authorized users. Because it is a Web Application, all changes (materials prices, specific factors, etc.) are **immediately applied to all users**, so there is no need for any updates on the users devices (laptop, PC, tablet, etc.).

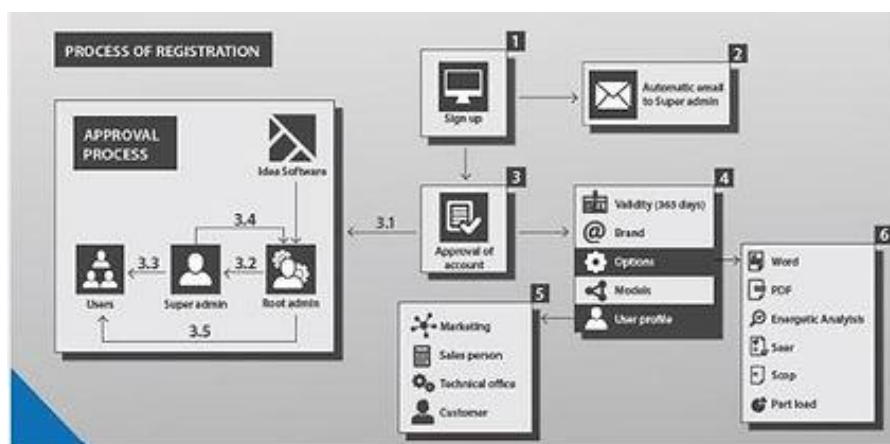
The Client receives an Excel Template to fill all needed data, and enable to set the application according to his customized data. New geometry in terms of rows and tube step and tube diameters can be added.

Price is calculated according to the material and work costs. The work cost procedure can be updated according to the Client technology (machines) and production processes.

USER ACCESS

Our Web User Management can be customized in order to follow the Clients strategy.

Different user access can be made, and at the same time one user account can access to I-COILS and I-COILS 3DPRO software.



His options can further be defined: account duration, data visibility, software functionality, offers access, specific hidden data, which software he can use (Web Selector, 3DPRO or even mobile apps), etc.

The Client Administrator has top level permissions in order to manage all new or existing users.

PRICE CALCULATION

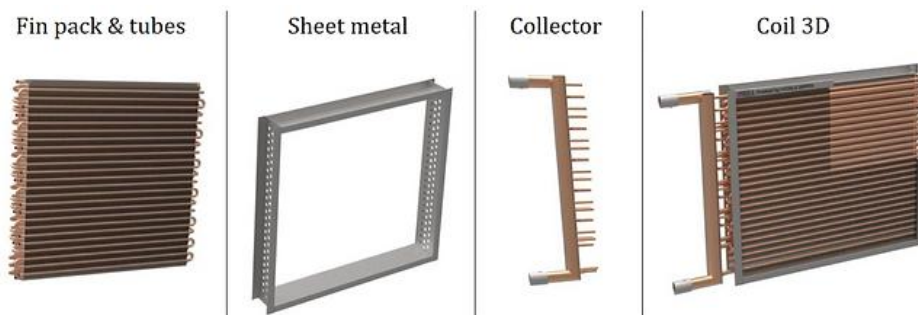
The software calculate the price of the exchanger considering the material and the worker time. A report shows the list of the materials with the description and quantity, referred to the measures unit, and the list of the activities with the minutes and the cost per hour. Worker and material costs can be managed by the administrator.

3D MODEL

I-COILS 3DPRO software covers following types of coils:

- Heating,
- Cooling,
- Steam,
- Condensing and
- Evaporating.

Its main 3D Assembly consists of parts which can be in depended upgraded in the future. Main relations between their geometry properties are made in a way to support those updates.



FIN PACK AND TUBE

Consist of fins, tubes and curves made according to chosen geometry and materials (material thickness, fins spacing, etc.).

This means that everything what will be calculated inside I-COILS Web, can be processed automatically inside I-Coils 3DPRO.

Update of new materials is done just once, inside the database for I-COILS Web software.

The curves can be standardized or calculated according to the geometry.

The length of tubes considers also the customer tube expansion factor (depending on tube: material, thickness, diameter).

SHEET METAL

Same as for fins and tubes, sheet metal material specification is taken from calculated coil. Different construction types can be applied to cover end customer needs (coils dimension and construction standards).

As basic, we offer three types of housing: channel (KAN), air handling unit (KLIM, VZD).

The sheet metal module can be upgraded in order to cover also construction for Dry Coolers (Air Cooled Condensers). This would be done as an upgrade of the basic COILS 3D Module. Additional housing accessories can be applied, such as: support legs, specific covers, channel connections, water drop eliminator, etc.

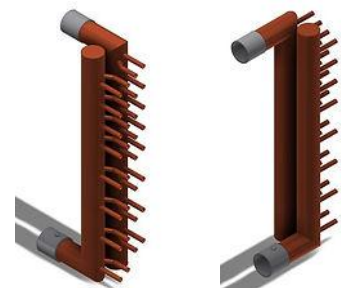
COLLECTOR

The dimensioning of the collector is connected to the circutation, either if the circutation is made automatically, created by the user or opened as a saved one.

The collector consists of: connection, collector tube, nipples.

Different positions can be applied for:

- **connection:** straight,
90° air direction,
-90° opposite to air direction,
bottom,
top;
- **position:** horizontal, vertical
- **air direction:** from left, from right



Additional collector accessories like flange, valves, additional vent tubes can be added.

CIRCUITATION I-COILS

3DPRO has solved the most complex part where engineers are losing time, for the circuitation.

As result our Circuitation module gives the option to automatically generate circuitation drawings or load saved ones from a database filled automatically by all users.

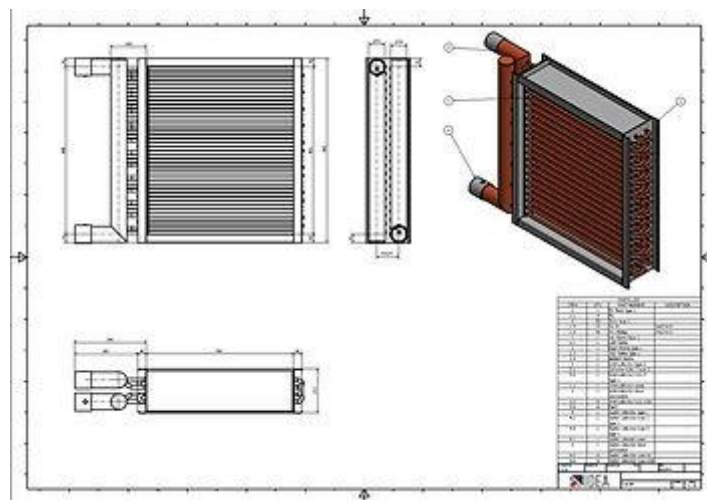
Automatic circuits are generated in function of:

- Coil type (water, condensing, evaporating)
- Connection side
- Air direction (from left, from right)
- Geometry
- Coils position (horizontal, vertical)

DOCUMENTATION

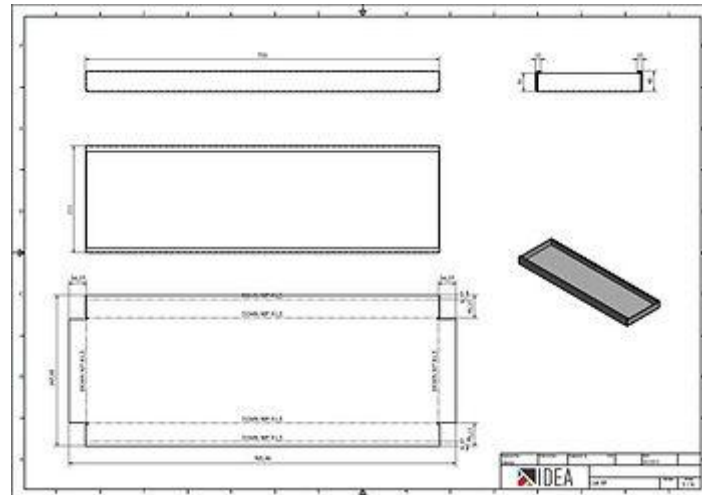
I-COILS 3DPRO offers automatic documentation creation.

It follows the modular design of the coils assembly, which means that with adding any new module also all documentation would be updated.

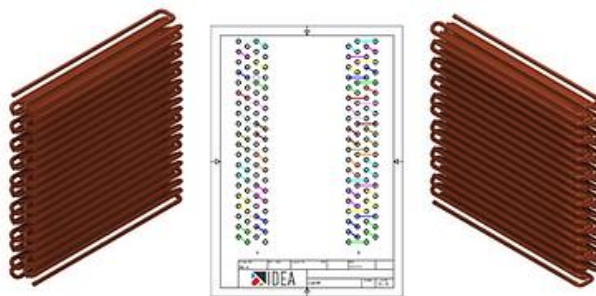


SHEET METAL

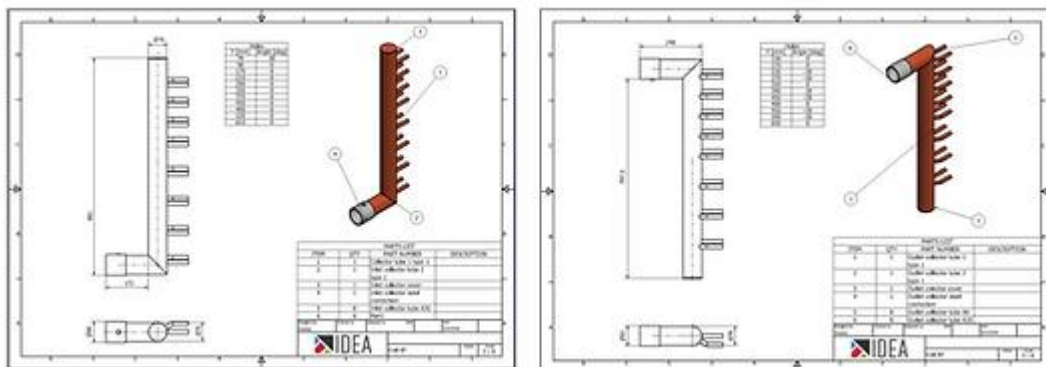
As basic are provided main sheet metal parts: front, back, top, bottom. Other like water drop eliminator, drip tray, housing covers etc. are optional. The picture shows one example of frame bending drawing.



CIRCUITATION



COLLECTOR



CNC

This module can be customized according to the technology used in the production process. Its benefits are direct export of G-codes for the collector drilling machines (can be applied for sheet metal machines). For this module, a meeting with the machine producer has to be arranged.

Additional Options & Integrations

- **Web Services & API Integration**
- **ERP System Compatibility**
- **Business Intelligence Tools**
- **Mobile App Development (I-COILS APP)**