Software consists of the following parts:

1. Equipment selection program, when the equipment characteristics are defined:
   ◆ Selection of fans (ducted, roof) for the general ventilation system;
   ◆ Selection of smoke exhaust system fans (smoke exhaust fans and air pressurization fans).
2. Equipment selection program using main characteristics and working conditions of equipment:
   ◆ Analysis of complex ventilation sets;
   ◆ Analysis of air curtains;
   ◆ Analysis of attachment heating and ventilation sets.
3. Smoke exhaust and air pressurization systems analysis program.

Fan Selection

Fan selection is performed based on set-up characteristics: air flow rate [m³/hour] and air drag [Pa]. Selection is performed for normal conditions (air temperature is 20 °C). Smoke exhaust fans may be selected for required handled medium temperature considering medium parameters.

Analysis of Complex AHU (ABC)

Software allows selecting ventilation system components represented by modules with flanged connection. Connecting dimensions are generally accepted for rectangular ducted fans.

Of all available (in data base) heat exchangers (heating) with open flow area provided speed velocity not exceeding set-up value, selection is made for heat exchanger with a property that design air temperature value at the outlet of heat exchanger exceeds set-up value at the least.

Program is used with fan selection software. Fans characteristics and drag curve position are presented based on the set-up operating point. These characteristics are crossed in the point if actual flow rate and actual pressure.

The result of the program execution is a system block diagram with longitudinal and transversal dimensions of joining modules and the whole unit specification.

Analysis of Air Curtains

Software allows performing calculation and selection of warm air curtains based of the following data: average temperature in the jet tip – t_{CM} [°C] (according to SNiP 41-01-2003); air heat in curtain heat exchanger – t_3 [°C]; outside air temperature t_H [°C] (according to SNiP 23-41-99*); room air temperature t_B [°C]; wind velocity – v [m/s]; heat-carrying agent parameters for curtain with water-to-air heating; gateway height – H [m]; gateway width – B pm].

The calculation is resulted in air curtain nominal size, axis trajectory and jet limits diagram, and average temperature in the jet tip, which allows estimating air curtain properties and compliance with requirements of regulating documents concerning temperature.
Program allows performing calculation for the curtain without heating.

Analysis of HOBA Pod-Mount Heating and Ventilation Units

Software allows performing calculation and selection of pod-mount heating and ventilation units based on the following reference data: outside air temperature – t [°C] (SNiP 23-01-99*), design inside air temperature, heat-carrying agent parameters, set total capacity.
Software allows performing aggregative calculation of heat loss in a building.

Analysis of Smoke Exhaust System

Software is developed based on Sections 7 and 8 of SNiP 41-01-2003 "Heating, Ventilation, and Air-Conditioning". The calculation may be performed in accordance with "Recommendations for Smoke Protection in case of Fire" MDS 41-1.99. Software considers differences in configuration of roof and mail line fans concerning gas emission.

As a result Program defines required smoke exhaust fan parameters: gas temperature before fan, flow rate and required pressure normalized to the reference conditions. Defined parameters allow coming to system selection.

KKTsM-Selection is a CMV Manufacturing Works in-house development used for calculation and selection of central modular air conditioners (ККЦМ) with the capacity of 2,500 to 100,000 m³/hour. (Currently 15 standard versions are produced).

Software is designed for quick and easy selection of a central air-conditioner defining its configuration, dimensions and technical characteristics.

The software allows to calculate facilities with various combinations of sections used in all technological and functional HVAC applications.

Procedure:
1. In the opened window select the type of installation.
2. Fill in the customer and the design data (enter via the head menu).
3. Set installation parameters (enter via the head menu):
  – Design for the purpose intended;
  – Climatic version;
  – Category of location;
  – set installation air handling capacity and its operating side.
4. Select standard size of installation. Recommended air velocity is 3.5 m/sec max.
5. Assemble the installation in accordance with required set of sections.
6. Each unit is calculated automatically when clicking on it. Block parameters required for calculation are set in the dialog mode.
7. Generate the report (use the head menu). A drawing is included into the report automatically.
8. Save the report as ___.pdf (in report window). Close the window.
9. Save the installation selection in the program ___.cco (using head menu).

◆ If by any reason you have not succeed to select equipment using the program, please, contact our specialists and we promptly resolve all issues.

◆ The latest version of software is available to download on the CVM Manufacturing Works website: **www.cvm.ru**