

ETNA®



**etna
select**

Pump Selection Program



Etna Select User Guide

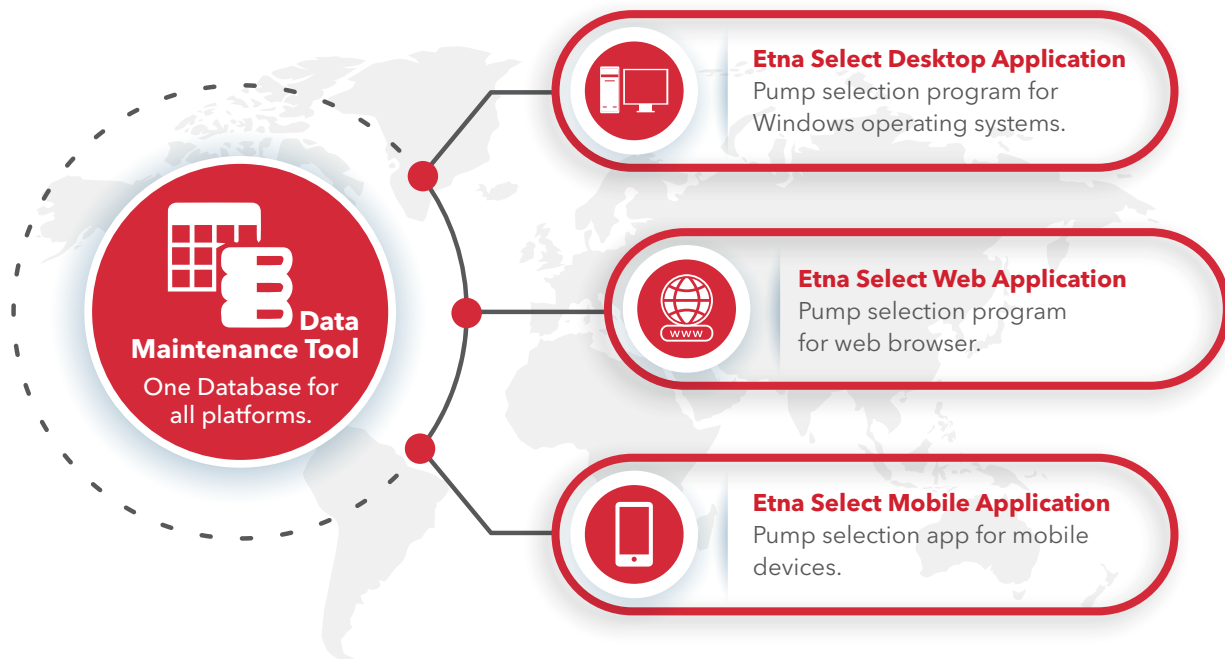


Etna Select is the latest development for the computer supported **selection and configuration of centrifugal pumps** by VSX – VOGEL SOFTWARE. The extensive program, with which almost every design and construction variation can be displayed, reflects the companies nearly 25 years of experience in the implementation of such solutions. The new version particularly shines when it comes to its **intuitive operating concept** as well as the **increased performance** and offers a wide range of additional functionalities. With its integrated price calculation as well as offer and project functionalities, the software serves as a central part of the sales process.

Etna Select has been especially designed to meet the requirements of modern IT environments. **Internet security** and **flexible authorization models** once more played an important role in the development process.

MULTI-PLATFORM DESIGN

When it comes to data access and work on inquiries and offers, the **unique multi-platform design** offers the ideal solution for various situations. The web-based version for internet and intranet services and the desktop-based version for Windows operating systems are supplemented by a version which has been optimized for the use on mobile devices. This concept as a whole is unique on the market.



The application uses the **same database** on all available platforms. Thanks to the intelligent database system, all product-specific data can be visualized and used for the sales process. It is also possible to integrate Etna Select without a personalized interface in web shops and configuration programs, via corresponding interfaces.

MANY WAYS LEAD TO THE RIGHT PUMP

Users can choose between the hydraulic selection, the direct product selection and optionally the search for the article number or the description. New in Etna Select is the **QuickSearch**, right on the main screen, which enables users to find the right pumps faster. The already fast selection process, streamlined by the pump selection and configuration, is even more accelerated.

A few steps without an extensive query dialog lead to a qualified duty point-based pump selection. Your sales specialists will enjoy spending their saved time with their customers just as much as all other users, who simply reach their goal faster.

DETAILED CONFIGURATION WITH MANY EXTENSION POSSIBILITIES

Unique in Etna Select is the **combination of PumpSelector and PumpConfigurator**. As a result, users always have a complete overview of the various options of all pumps that match the operating data, and are able to reach their target faster with fewer steps. The effect of the selected components on the pump curves is immediately visualized, without having to switch between different windows. In the same way, a selection by price or total life cycle costs can be smoothly realized even for configurable products.

The basic program can also be extended by a large range of additional modules in order to enable qualified sizing and configuration of special pump designs, such as magnetic pumps, turbine pumps or side channel pumps.

THE PERFECT TOOL FOR DIFFERENT APPLICATIONS

The software solution can be easily integrated into an existing IT environment by using special interfaces. This allows the application to be embedded in an existing environment in order to link the Etna Select data with customer and sales-specific data.

Due to the extensive functionality of Etna Select, the program is suitable for a wide range of applications. Whether pump manufacturers or operators, the software is a highly efficient tool for both target groups when it comes to handling all sizing and sales tasks.

VARIOUS LICENSE MODELS PROVIDE THE RIGHT SYSTEM FOR EVERY PURPOSE

In order to use the program, it is necessary to purchase a server license for Etna Select Web or a certain number of user licenses for Etna Select Desktop. In addition, it is necessary to license the number of pump records which are supposed to be included in the database.

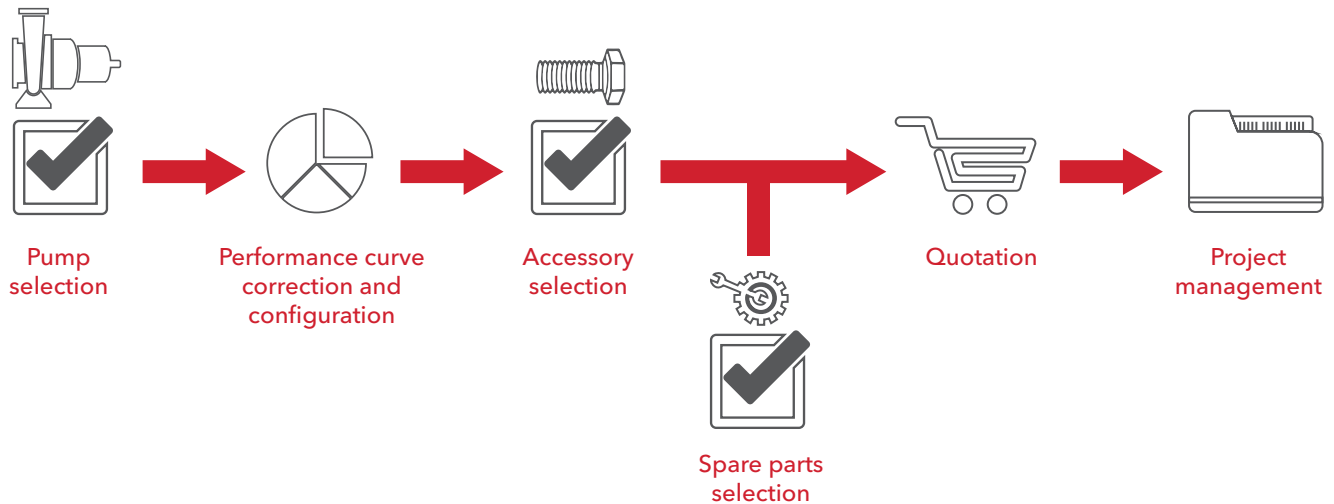
In addition to the standard licensing model for Etna Select, a service-based subscription model (Etna Select as a Service, in short: SaaS) is also available. SaaS gives the customer the opportunity to use the program for a certain amount of time. The service package is the ideal software and service solution including all licenses, software maintenance and support as well as hosting.

AT A GLANCE:

- + New intuitive operating concept
- + One database for all platforms (desktop, web and mobile version, webservice)
- + Same user interface for web and desktop version
- + Complete integration of PumpSelector and PumpConfigurator
- + QuickSearch for an even faster selection via duty point
- + Increased performance
- + Multilingual interface
- + Flexible user rights system
- + Maximum Internet security
- + Efficient interfaces



FROM PUMP SELECTION TO PROJECTS



PUMP SELECTION

The user specific data stored in the database is linked to predefined selection parameters and calculation methods in order to select suitable pumps according to the user's specification.

To select the right pump, the user can choose between various pump selection procedures.

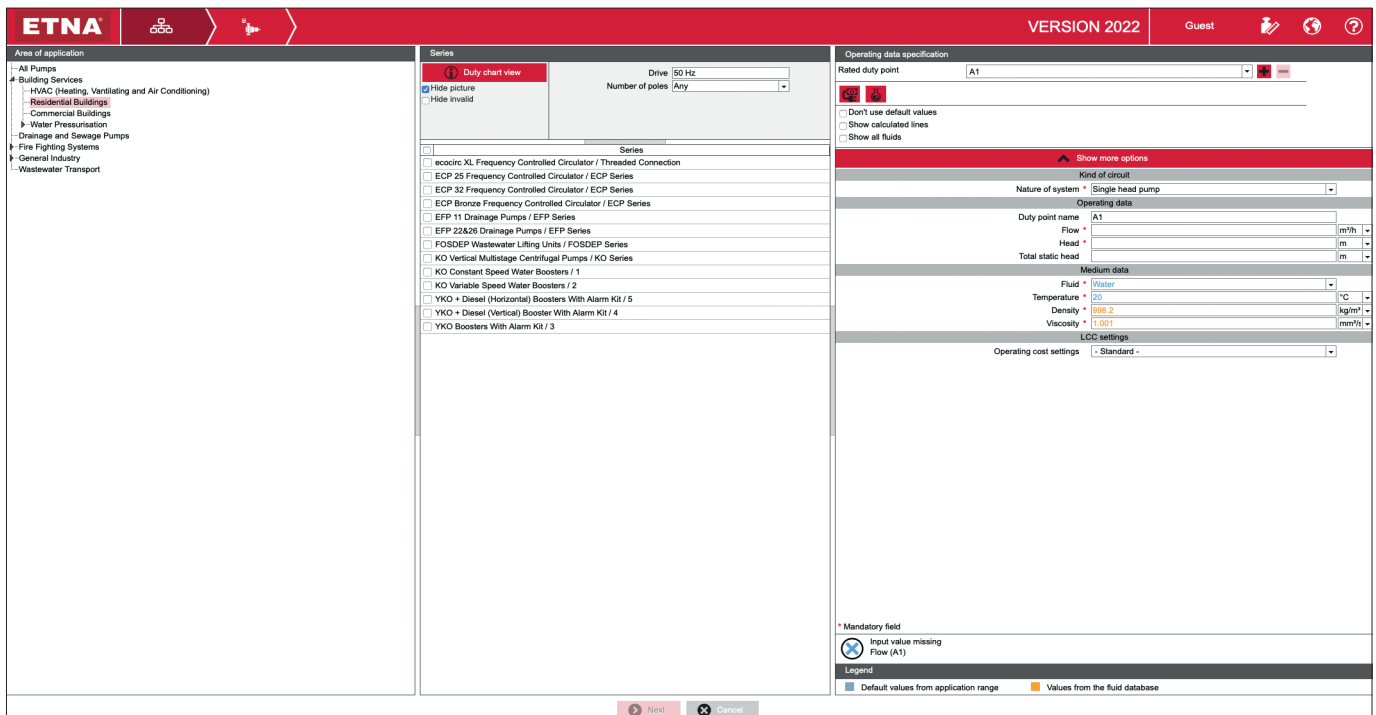
1. Hydraulic selection via duty point
2. Direct product selection via series description (Product Selection Browser)
3. QuickSelector: fast, qualified hydraulic selection directly from the main screen based on Q and H specification
4. Product search by description or item number (additional module)
5. Pump exchange to replace an existing pump (additional module)

NEW

- + Quick search by specifying H and Q on the main screen
- + Additional module for pump comparison

HYDRAULIC SELECTION VIA DUTY POINT

The hydraulic selection allows the sizing and configuration of pumps according to the operating conditions such as area of application, fluid, flow rate, and head. Etna Select also supports the selection of **several duty points**, even for different fluids. The sizing is possible as single pump, as parallel circuit or series connection of several pumps of the same pump type. An additional module enables the sizing of different pumps in parallel circuit.



The screenshot shows the Etna Select software interface for hydraulic selection via duty point. The interface is divided into several sections:

- Area of application:** A tree view on the left showing categories like All Pumps, Building Services, Residential Buildings, Commercial Buildings, Water Pressurisation, Drainage and Sewage Pumps, Fire Fighting Systems, General Industry, and Wastewater Transport.
- Series:** A central panel with a "Duty chart view" tab. It includes a "Drive" dropdown set to "50 Hz" and a "Number of poles" dropdown set to "Any". Below this is a list of pump series with checkboxes, including:
 - ecolic XL Frequency Controlled Circulator / Threaded Connection
 - ECP 25 Frequency Controlled Circulator / ECP Series
 - ECP 32 Frequency Controlled Circulator / ECP Series
 - ECP Bronze Frequency Controlled Circulator / ECP Series
 - EFP 11 Drainage Pumps / EFP Series
 - EFP 22&26 Drainage Pumps / EFP Series
 - FOSDEP Wastewater Lifting Units / FOSDEP Series
 - KO Vertical Multistage Centrifugal Pumps / KO Series
 - KO Constant Speed Water Boosters / 1
 - KO Variable Speed Water Boosters / 2
 - YKO • Diesel (Horizontal) Boosters With Alarm Kit / 5
 - YKO • Diesel (Vertical) Booster With Alarm Kit / 4
 - YKO Boosters With Alarm Kit / 3
- Operating data specification:** A right-hand panel with a "Rated duty point" dropdown set to "A1". It includes checkboxes for "Don't use default values", "Show calculated lines", and "Show all fluids". Below this is a "Show more options" section with a "Kind of circuit" dropdown set to "Single head pump". The "Operating data" section includes:
 - Duty point name: A1
 - Flow: [input field] m³/h
 - Head: [input field] m
 - Total static head: [input field] m
- Medium data:** A section for fluid properties:
 - Fluid: Water
 - Temperature: 20 °C
 - Density: 999.2 kg/m³
 - Viscosity: 1.001 mm²/s
- Operating cost settings:** A dropdown menu set to "Standard".
- Mandatory field:** A warning icon and text: "Input value missing Flow (A1)".
- Legend:** A key for "Default values from application range" (blue square) and "Values from the fluid database" (orange square).

At the bottom of the interface, there are "Next" and "Cancel" buttons.

The definition of application limits and search criteria can be directly compared with the product properties of the individual components. Predefined input masks simplify the sizing of special pumping systems, such as booster sets, borehole pumps or process pumps.

QUICKSEARCH VIA DUTY POINT INPUT

New in Etna Select is the possibility of sizing pumps quick and simple by entering the desired duty point right on the main screen. After entering the Q-H value as well as the rated frequency, the relevant series are already limited and relevant keywords are offered for further filtering. The relevant pump records are displayed without any intermediate steps, with the same functionalities as in the hydraulic selection.

The screenshot displays the Etna Select software interface. At the top, there is a navigation bar with the ETNA logo, the version 'VERSION 2022', and a user profile 'Guest'. The main content area is divided into several sections:

- Top Left:** The 'etna select' logo.
- Top Right:** A 'Quick Search' button with a magnifying glass icon.
- Right Panel:** A search input field with '10' and '50' values and a '50 Hz' dropdown. Below it is a 'Product filters' section and a 'Pump series' list with checkboxes and counts for various pump models.
- Bottom Left:** A graph titled 'Hydraulic selection' showing 'HEAD' on the y-axis and 'FLOW' on the x-axis. The graph illustrates the pump's performance curve, with labels for 'Temperature Rise', 'Minimum Flow, Acceptable Bearing and Seal Life', 'Best Efficiency Point Flow', 'Cavitation, High Vibration', and 'Noisy Operation, Cavitation Surges, High Vibration'.
- Bottom Right:** A 'Product selection browser' section featuring a large image of a pump.

At the bottom center of the interface, there is a logo for 'Vsx'.

DIRECT PRODUCT SELECTION OF PUMP TYPES VIA SERIES DESCRIPTION (PRODUCT SELECTION BROWSER)

Available in the standard package is the direct pump selection via series description and pump type. Precondition is the corresponding product knowledge of the user. After the pump selection, the user has the same functionalities as in the hydraulic selection. Naturally it is also possible to define a duty point later on in order to execute configurations for specific operating conditions.

The screenshot displays the ETNA software interface for pump selection. At the top, the 'Pumps' table lists several models:

Product name	Design	Flow m³/h	Head m	η %	NPSH m	n¹ 1/min	f Hz	P, kW	P, Tot kW	D, mm	H, m
EA 32-20	End Suction & Centrifugal	2900	50			2900	50			216	66.96
EA 32-25	End Suction & Centrifugal	2900	50			2900	50			258	91.08
EA 40-20	End Suction & Centrifugal	2900	50			2900	50			216	66.95
EA 40-26	End Suction & Centrifugal	2900	50			2900	50			259	96.01
EA 50-20	End Suction & Centrifugal	2900	50			2900	50			216	61.01

The main area shows a graph of 'Head (m)' vs 'Flow (m³/h)' for 'EA 32-20: Pump performance curves'. The graph displays multiple performance curves for different flow rates. On the right, the 'Current configuration' panel shows settings for 'Rated duty point', 'Hydraulic selection', 'Duty chart' (2900rpm), 'Performance curve' (Ø 216), 'Motor' (160 M 2 - 11 (11 kW)), 'Make' (EURONORM), 'Main category' (3- motor), 'Motor design' (3 PH DM STD), 'Frequency, poles' (50 Hz - 2 poles), 'Degree of protection' (IP 55), and 'Electrical connection' (400 V).

This screenshot shows the same ETNA software interface as above, but with a dialog box open over the performance curves graph. The dialog box is titled 'ETNA Duty points' and contains the following information:

You are about to move the rated duty point to the following coordinates. This action will trigger a new configuration.

Flow	228.4	m³/h
Head	64.92	m
Total static head	0	m

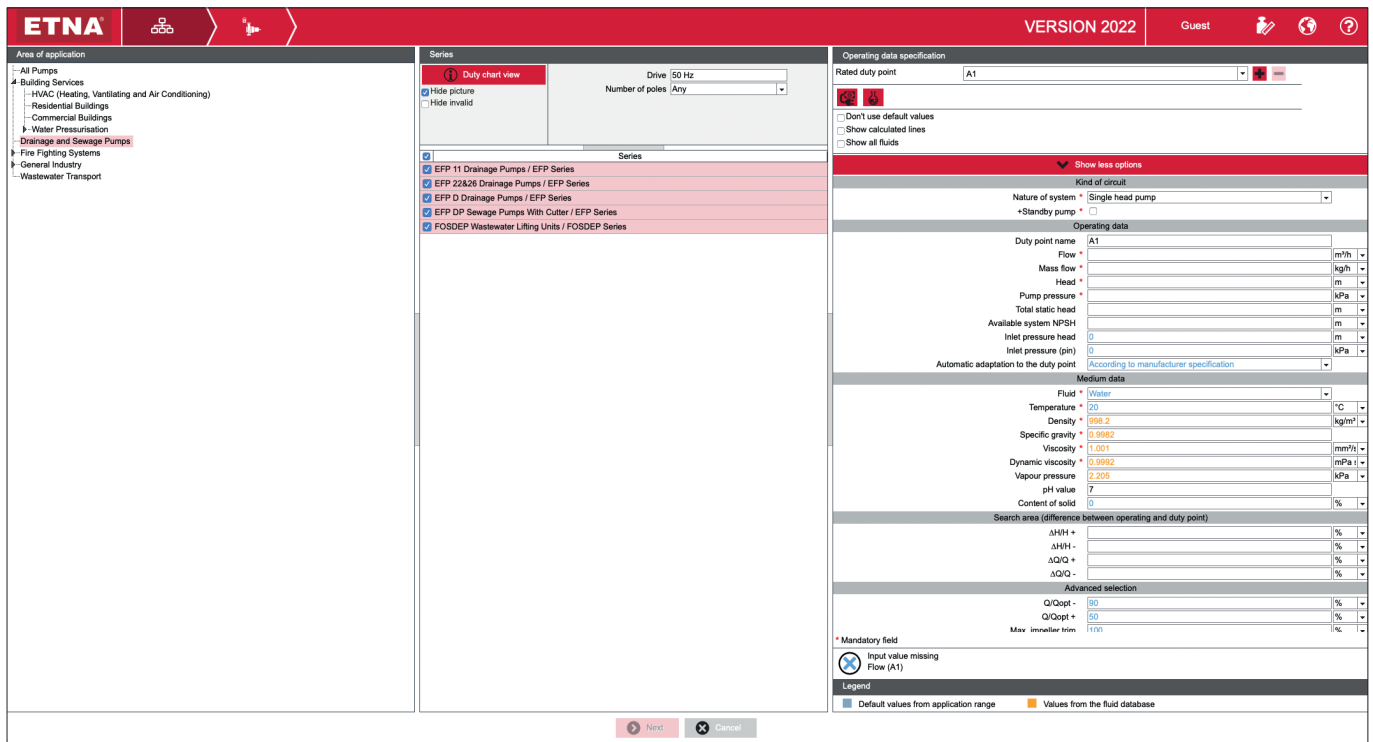
The dialog box has 'OK' and 'Cancel' buttons at the bottom.

PRODUCT SEARCH VIA PRODUCT DESCRIPTION OR ITEM NUMBER (ADDITIONAL MODULE)

If the user knows the product description or item number, this is also a possible search method. The search results are also displayed in a table. After the selection process the user has the same functionalities as in the hydraulic selection.

ALSO INTERESTING: PUMP COMPARISON

In Etna Select it is possible to directly compare the configuration data of different selection processes of a project. For this purpose, the selected pumps are listed in a table, this makes it easy to recognize similarities and differences. Differences can be visually highlighted if favored.



The screenshot displays the ETNA software interface, version 2022. The interface is divided into several sections:

- Area of application:** A tree view on the left showing categories like All Pumps, Building Services, Residential Buildings, Commercial Buildings, Water Pressurisation, Drainage and Sewage Pumps, Fire Fighting Systems, General Industry, and Wastewater Transport.
- Series:** A central panel with a 'Duty chart view' tab. It includes options for 'Hide picture' and 'Hide invalid'. Below, a list of series is shown with checkboxes:
 - EFP 11 Drainage Pumps / EFP Series
 - EFP 22&26 Drainage Pumps / EFP Series
 - EFP D Drainage Pumps / EFP Series
 - EFP DP Sewage Pumps With Cutter / EFP Series
 - FOSDEP Wastewater Lifting Units / FOSDEP Series
- Operating data specification:** A right-hand panel for configuring the selected pump. It includes:
 - Rated duty point:** A1
 - Drive:** 50 Hz
 - Number of poles:** Any
 - Operating data:** Fields for Duty point name (A1), Flow (m³/h), Mass flow (kg/h), Head (m), Pump pressure (kPa), Total static head (m), Available system NPSH (m), Inlet pressure head (m), and Inlet pressure (pin) (kPa).
 - Medium data:** Fields for Fluid (Water), Temperature (20 °C), Density (999.2 kg/m³), Specific gravity (0.9992), Viscosity (1.001 mm²/s), Dynamic viscosity (0.9992 mPa·s), Vapour pressure (2.205 kPa), pH value (7), and Content of solid (0 %).
 - Search area (difference between operating and duty point):** Fields for ΔHH+, ΔHH-, ΔQ/Q+, and ΔQ/Q-.
 - Advanced selection:** Fields for Q/Copt (50 %), Q/Copt+ (50 %), and Max. immetable term (1/m).
- Legend:** A legend at the bottom right indicating that blue squares represent 'Default values from application range' and orange squares represent 'Values from the fluid database'.



CURVE CALCULATION AND CONFIGURATION

Following the selection process, all suitable pumps are listed in a table together with their most important properties. Search results can be refined and individually edited with the **sort and filter function**. The configuration options for the selected pump are being neatly shown next to the information section.

The product configuration supports the user in selecting available options. The program independently checks if the given pump data meets the entered criteria. The order of the configuration work flow within a logical group can be defined by the user. The data is faded out, if an automatic selection of components selected by the program is possible or if the option is not relevant for the pump type. This ensures a clear overview of the available pump components and optimizes the entire process in terms of time.

The pump curves are automatically calculated by the software to match the respective operating conditions. The desired viscosity conversion method can be selected separately for each duty chart in the database and can also be deactivated, if desired.

The following procedures for highly viscous Newtonian fluids are available in Etna Select:

- **Hydraulic Institute (ANSI/HI 9.6.7) of 2010**
- **Hydraulic Institute 14th Edition**
- **Procedure for side-channel pumps** (SIHI publication "Basic Principles for the Design of Centrifugal Pump Installations"; 7th enlarged and revised edition, 2003) (additional module)

The program supports all common procedures for duty point adjustment. The order of the optimization procedures can be adjusted manually. The methods of curve adaptation are also applicable to multi-stage pumps.

NEW

- + Calculation of performance curves for multi-stage pumps with depreciation factor
- + User defined configuration messages according to individually defined conditions
- + Output of configuration warnings on the data sheet via new keyword
- + Selection between different diagram designs

- Impeller trimming, also with special specifications for multi-stage pumps
- Adjustment of speed and calculation of speed performance charts
- Optimization of the blade angle for propeller pumps
- Throttling (via orifice diameter or ζ -coefficient)
- Generic curve calculation using a factor with predefined exponents

A new feature in Etna Select is the calculation of duty charts for multi-stage pumps with depreciation factor. This allows the visualization of the efficiency influence with low stages through the factor, without having to separately include the duty chart.

When it comes to speed correction of performance curves based on the affinity laws, there are **different methods for efficiency depreciation**. These can be specified individually for each hydraulic in the database. In the case of automatic optimization, the preferred adaptation method can also be defined in the database or optionally be specified by the user of the selection program.

All data in the information section can be coordinated and provided via the data maintenance tool and offers the user an enormous added value:

- Pumps and Motor Curves
- Detailed product description
- Dimension (incl. drawing)
- Operating costs (two types of calculation)
- Data sheets (additional information through external PDF documents)
- Websites

The names of external documents or the URL to a website, using Etna Select keywords, can be generated dynamically according to the current configuration and the user settings. In this way, it is for example possible to conveniently integrate an external **drawing or document library** into Etna Select.

ALSO INTERESTING: SIZING OF SPECIAL PUMP TYPES AND COMPONENTS

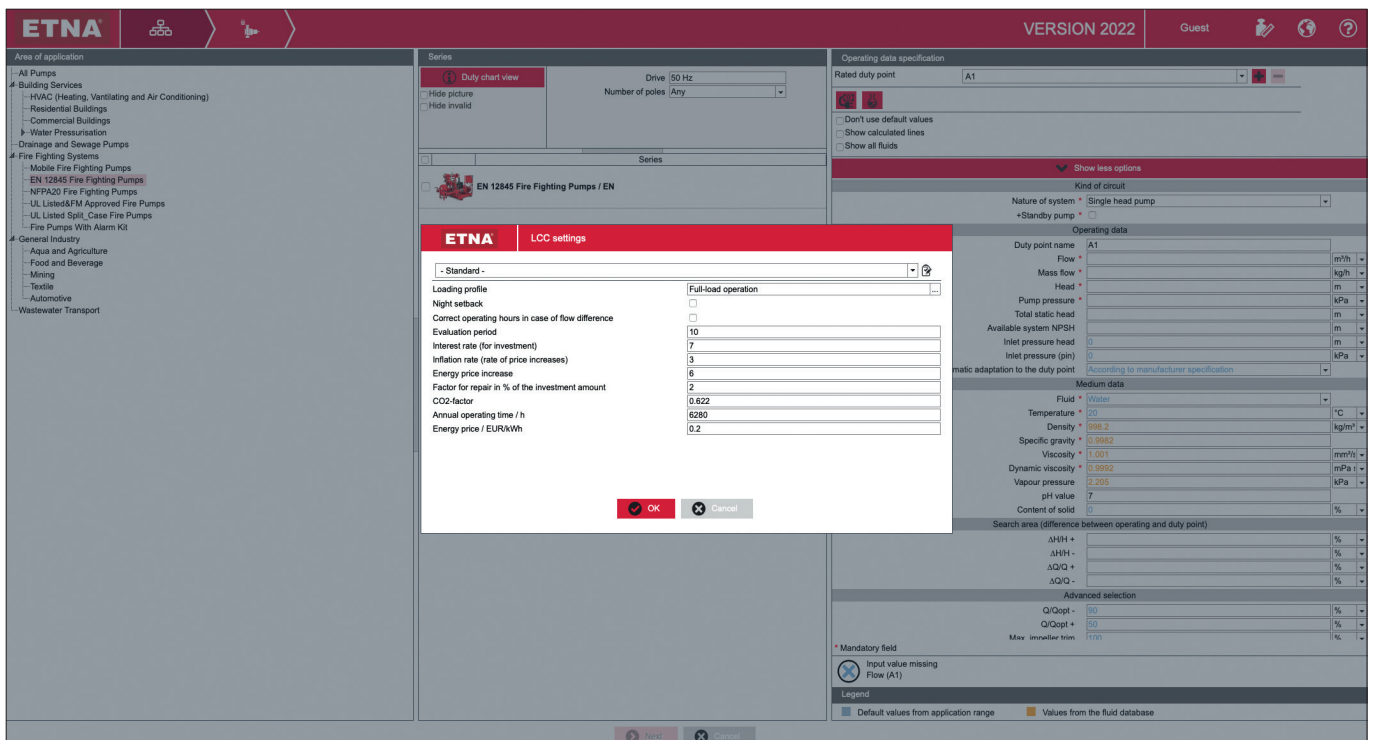
Etna Select offers the user efficient sizing and dimensioning of special pump types, electrical regulated circulators, booster sets, borehole pumps and turbine pumps (additional module). A multitude of predefined components like motors, gears, materials, shaft seals, bearing frames, magnetic drives, frequency converters and coupling guards can be used for the configuration process. The software determines the resulting curve and, if necessary, performs an iterative drive dimensioning (partly additional module).

NEW

- + Sizing of turbine pumps
- + Improvement of motor sizing

ALSO INTERESTING: OPERATING AND LIFE CYCLE COST CALCULATION

Depending on the case, it is possible to use different load profiles, when calculating operating and life cycle cost. The cost comparison of the different solutions is visualized graphically and in tables.



The screenshot displays the ETNA software interface. The main window is titled 'ETNA VERSION 2022' and shows a sidebar with application areas, a central configuration area, and a right-hand panel for 'Operating data specification'. A dialog box titled 'ETNA LCC settings' is open in the foreground, showing various parameters for life cycle cost calculation.

Parameter	Value
Leading profile	Full-load operation
Night setback	<input type="checkbox"/>
Correct operating hours in case of flow difference	<input type="checkbox"/>
Evaluation period	10
Interest rate (for investment)	7
Inflation rate (rate of price increases)	3
Energy price increase	6
Factor for repair in % of the investment amount	2
CO2-factor	0.622
Annual operating time / h	6280
Energy price / EUR/kWh	0.2

The 'Operating data specification' panel on the right includes sections for 'Rated duty point', 'Kind of circuit', 'Operating data', and 'Medium data'. The 'Operating data' section shows parameters like Flow (m³/h), Mass flow (kg/h), Head (m), Pump pressure (kPa), Total static head (m), Available system NPSH (m), Inlet pressure (m), Inlet pressure (Pi) (kPa), and Medium data (Fluid, Temperature, Density, Specific gravity, Viscosity, Dynamic viscosity, Vapour pressure, pH value, Content of solid).

Furthermore, the calculation of **the Energy Efficiency Index (EEI) and the Minimum Efficiency Index (MEI)**, according to the latest EU regulations, is integrated.

In addition, the LCC data of several pumps can be used for comparison, whereby optimum values are also visually emphasized. This gives your sales staff valuable arguments, when it comes to communicating the benefits of pumps with higher purchase costs to the customers.

DATA SHEETS

The data sheets can, with an integrated editor in the data maintenance program, be designed according to the customer's requirements. For each project the language, units and currency can be defined independently from the program settings.

The program also contains standard data sheets for offers, technical data, performance curves and dimensions. By adding external documents such as terms of delivery, the offer package can be enhanced.

NEW

- + Assignment of different diagram designs to data sheet templates

PROJECT DATA EXCHANGE

A considerable amount of time can be saved by sending the created offer including all documents directly by email. Additionally, PDF files can be exported without additional software.

Share projects gives the user the opportunity to share their projects with other people, who are also permitted to edit these projects.

Special interfaces (additional modules) allow the user to integrate project data into third party programs like ERP or CRM systems, which for example enable statistical evaluations.

NEW

- + Etna Select CrmConnector for integration with Microsoft Dynamics CRM (desktop version only)
- + Configurable project export for statistical evaluations

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