CONCEPTS NREC

Agile Engineering Design System®

Complete engineering process integrated through a complementary suite of CAE and CAM tools

Advanced Technology Tools Encompass and Integrate the Engineering Process

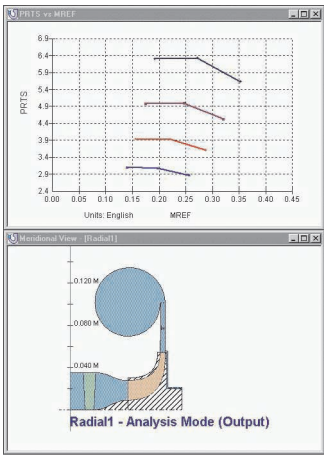
Concepts NREC advanced technology tools play a key role in achieving innovative solutions for many leading technical companies worldwide who strive to produce more efficient designs and reduce manufacturing costs. This specialized system combines experience, test data, and theoretical concepts to aid in the design, analysis, and manufacturing of pumps, compressors, turbines, turbochargers, combustors, and heat exchangers.

The Agile Engineering Design System® is the only commercially available turbomachinery design system that encompasses the complete engineering process. Integrated elements of the system include preliminary design, detail design and sophisticated analysis tools, including rapid CFD, FEA and rotor dynamics. The system also offers best-in-class specialized five-axis machining software and a smooth transfer of data to CAD packages.

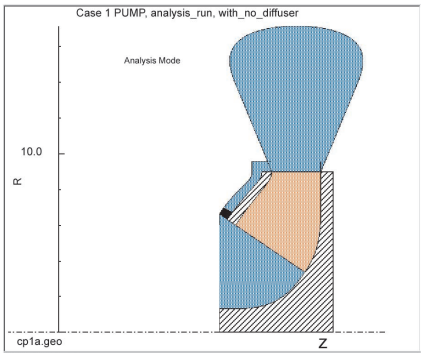
These sophisticated software tools empower designers and product development teams to apply a cost-effective concurrent development approach while balancing issues of performance, reliability, operating life, and low-cost manufacturability. Concepts NREC design systems are maintained and refined through a rigorous development process that continually incorporates the most recent test data and the latest theoretical advances.

MEANLINE ANALYSIS

COMPAL®/PREDIG™ allows you to perform meanline analysis for centrifugal or mixed flow compressors.

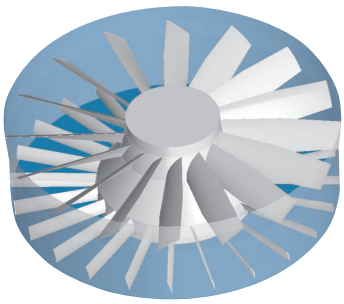


PUMPAL®/PERFIG™ allows you to perform meanline analysis for centrifugal or mixed-flow pumps.

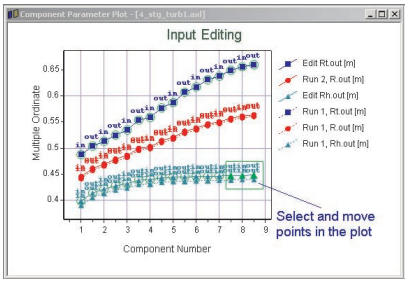


RITAL™/RITDAP™ provides one-dimensional analysis of the performance of radial and mixed-inflow turbine stages.

FANPAL™ allows you to perform meanline development and analysis for fans and blowers.

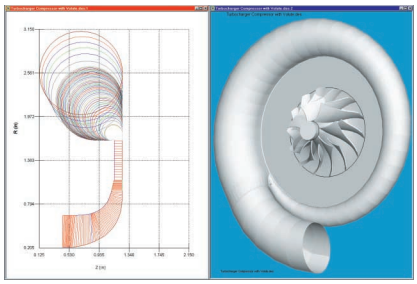


AXIAL™ is a design-point and off-design meanline application for designing single and multistage axial fans, compressors, turbines, and pumps.



BLADING

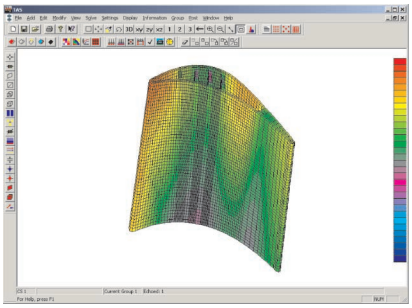
CCAD®/COMIG® allows you to design and analyze complete three-dimensional stage geometries for compressors, pumps, fans, and turbines.



AXCAD™ is a blade analysis program for single and multistage axial turbines, compressors and pumps, providing blade shaping, stacking, through flow, and blade-to-blade analysis.

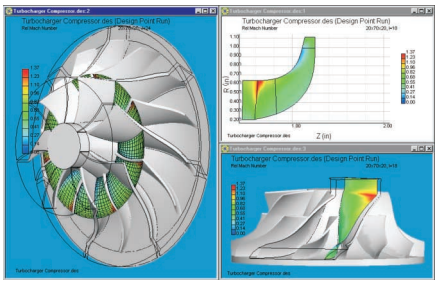
COOLING ANALYSIS

CTAADS™ is a fully integrated suite of independent software modules that support the rapid generation of airfoil cooling-passage geometry and perform a complete 3D thermal analysis.



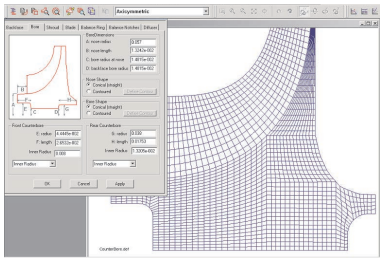
COMPUTATIONAL FLUID DYNAMICS

Pushbutton CFD® is efficient full Navier-Stokes CFD for agile turbomachinery design.

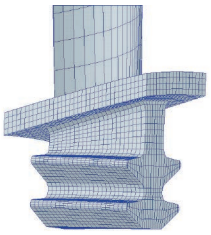


STRESS ANALYSIS

STRESSPREP™ provides stress analysis pre-processing and flexible parametric modeling of radial and mixed-flow compressor and pump impellers and radial turbine wheels.

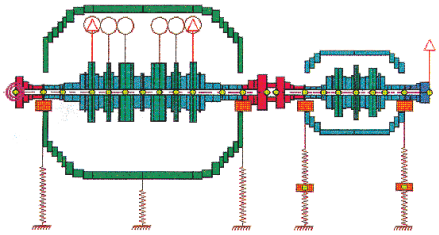


AXISTRESS™ allows you to quickly produce full 3D finite element models of axial flow turbines, compressors and pumps.

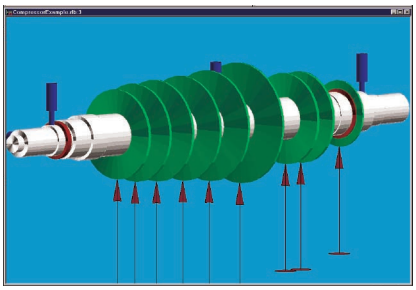


ROTORDYNAMICS

DyRoBeS™ is a powerful and sophisticated software tool for rotor dynamics including comprehensive bearing analysis.

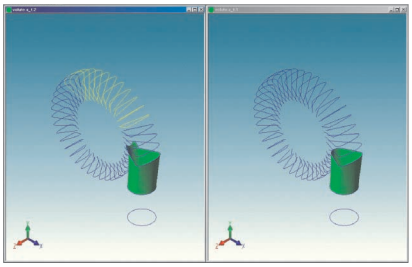


RotorLab™ is the ideal environment for agile modeling of rotor systems, bearings, and seals.



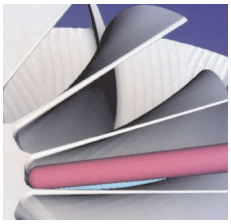
COMPUTER-AIDED DRAFTING

Concepts NREC design software is compatible with all commercial CAD packages.

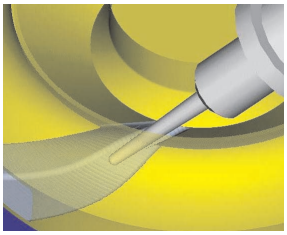


COMPUTER-AIDED MANUFACTURING

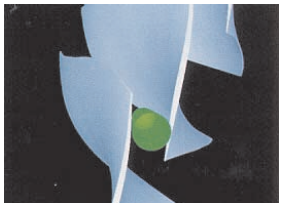
MAX-5™ is an interactive CAM system to create 5-axis NC machining instructions for flank milling of ruled-surface turbomachinery components.



MAX-SI™ is an advanced computing system that generates 5-axis NC instructions for milling integrally-shrouded turbomachinery components, such as expanders, pumps, process compressors, turbines, and turbine nozzles.



MAX-AB™ is an interactive CAM system to create 5-axis NC machining instructions for point milling of arbitrary- or ruled-surface turbomachinery components.



AGILE ENGINEERING DESIGN SYSTEM APPLICATIONS

		MEANLINE ANALYSIS					BLADING		CFD	COOLING ANALYSIS	STRESS ANALYSIS		ROTOR-DYNAMICS		CAD	CAM		
		COMPAL/ PREDIG	PUMPAL/ PERFIG	RITAL/ RITDAP	FANPAL	AXIAL	CCAD/ COMIG	AXCAD	Pushbutton CFD	CTAADS	STRESSPREP	AXISTRESS	RotorLab	DyRoBeS	*All CAD Packages*	MAX-5	MAX-SI	MAX-AB
CENTRIFUGAL & MIXED-FLOW	Compressors	●					●		●		●		●	●	●	●	●	●
	Pumps		●				●		●		●		●	●	●	●	●	●
	Fans & Blowers				●		●		●		●		●	●	●	●	●	●
	Turbines & Expanders			●			●		●		●		●	●	●	●	●	●
AXIAL	Compressors					●	●	●	●			●	●	●	●	●	●	●
	Pumps		●			●	●	●	●			●	●	●	●	●	●	●
	Fans & Blowers					●	●	●	●			●	●	●	●	●	●	●
	Turbines					●	●	●	●	●		●	●	●	●	●	●	●

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