



COMPANY OVERVIEW

CST is a design engineering and consulting company, created by a group of engineers with multi-decade experience, focused on rotating equipment (compressors, pumps, steam & gas turbines) installed in plants of the Oil&Gas/Energy sector (gas production, treatment and transportation, refineries, chemical, petrochemical, power generation, and similar).

Our clients are Manufacturers (OEMs), System Integrators (Packagers), Main contractors (EPCs), End Users and Maintenance providers.

For OEMs, we provide support for concept and detail design of main parts as well as complete new units. We also provide aftersale support either for troubleshooting and upgrade.

For System integrators, we provide complete solutions for packaged units, including machine selection, system engineering, pulsation-vibration and torsional analysis, pressure vessel design, instruments & control systems, support for HAZOP/SIL assessment and testing. The design can be tailored for the most stringent global engineering specifications. Also field support at erection, commissioning and startup is part of our standard offer.

For Main contractors we provide assistance to their rotating equipment departments both during the tendering and project development stages.

For End users, our activity consists in multi-disciplinary technical consultancy for operation, optimization, upgrade and diagnostics of existing units and guidance for the relevant maintenance activities, as well as in the evaluation and solution of recurrent problems or, when it is necessary, tune-up or upgrade the machines to fit new operating conditions that can vary over time.



The mission we have set ourselves is to maximize the legacy we have inherited with our engineering work and technological research and to continue being a reliable partner for our clients, providing global solutions with ever increasing added value.



C.S.T. is a design and maintenance engineering consultant, established by a group of Companies and experienced professional engineers, to support:

- ✓ OEMs
- ✓ Packagers
- ✓ Main Contractors
- ✓ Service Companies
- ✓ End Users

to design, assemble and service compression equipment.

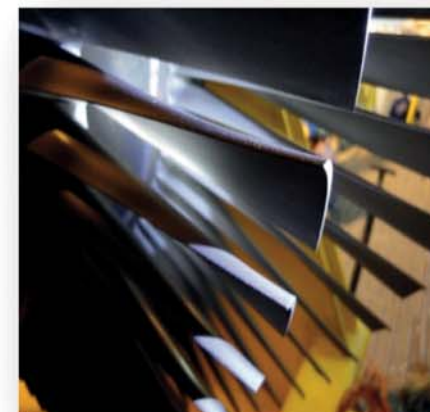
- ✓ Half a century of experience at the top of technology
- ✓ 360° know how (marketing, design, manufacturing, service, organization)
- ✓ Mix of experience and innovation
- ✓ Links to technology Centres of Excellence
 - Technical Universities
 - High Performance Computing Centres
 - International Regulatory Bodies



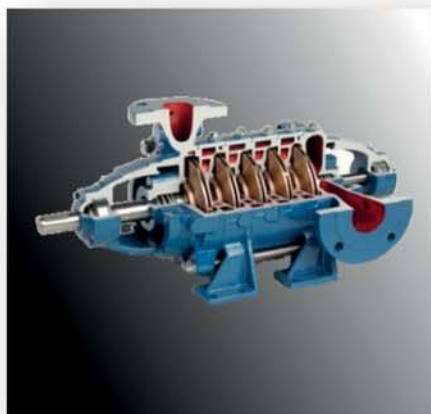
RECIPROCATING COMPRESSORS



CENTRIFUGAL COMPRESSORS



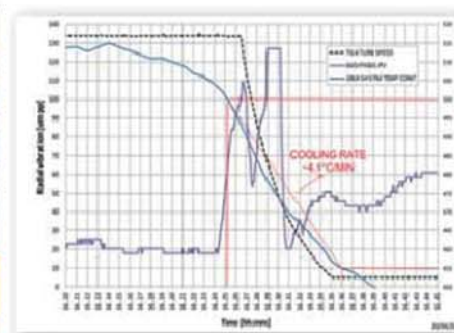
STEAM TURBINES



PROCESS PUMPS



DIAGNOSTIC SYSTEMS





UP & MIDSTREAM

- Gas treatment
- Gas gathering
- Gas lift
- Associated gas reinjection
- Fuel gas boosting
- Pipeline
- Underground storage
- Boil off gas
- other



DOWN STREAM

REFINERY

- Hydrocracking
- HDS
- Cat. reforming
- Lube Oil
- Ethylene

PETROCHEMICAL

- L/HDPE, LAB, EVA
- Ammonia
- Nitric acid
- Urea
- Fertilizers



SPECIAL PURPOSE

CLEAN FUELS

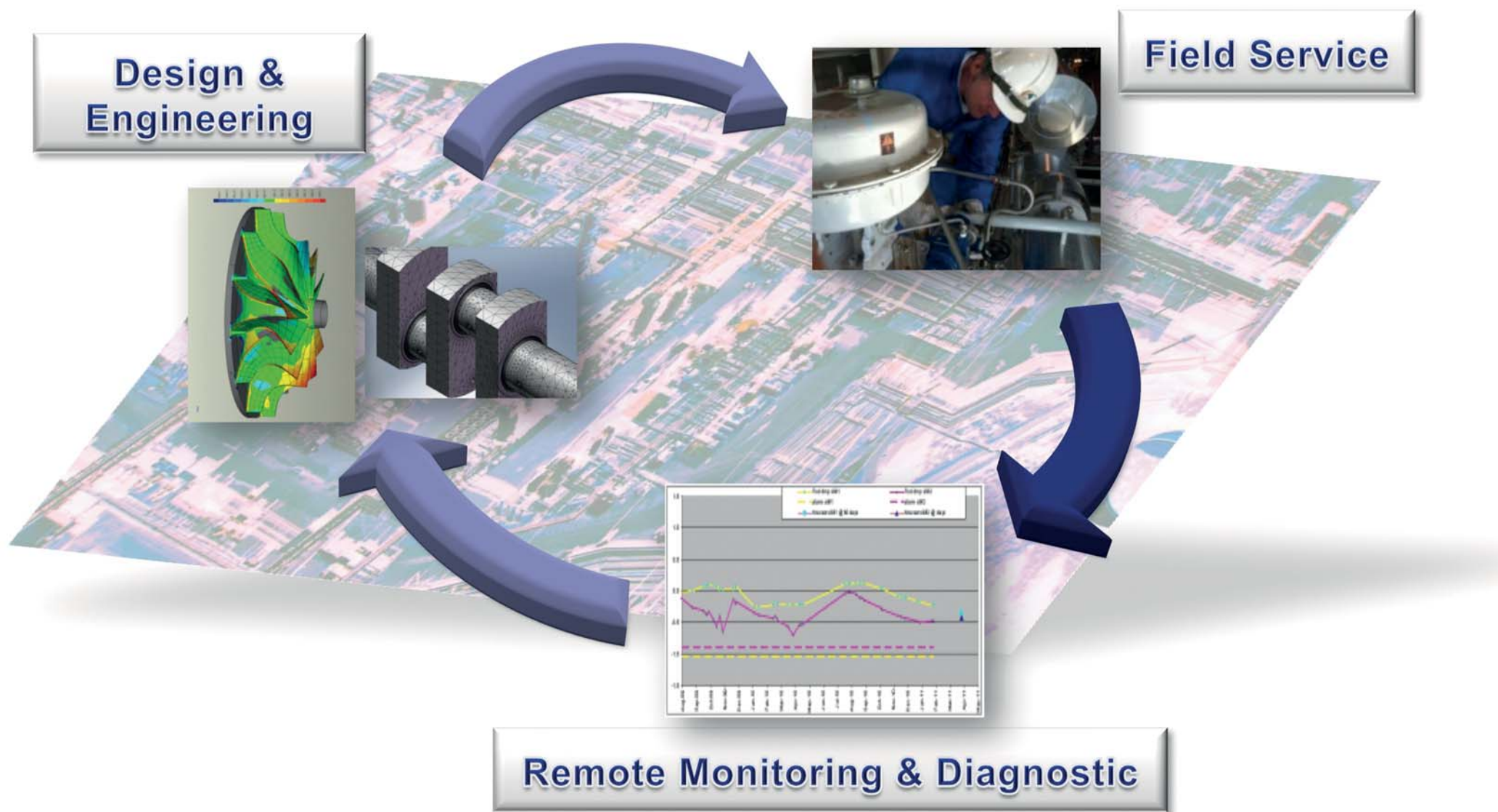
- CNG
- Micro & Nano LNG

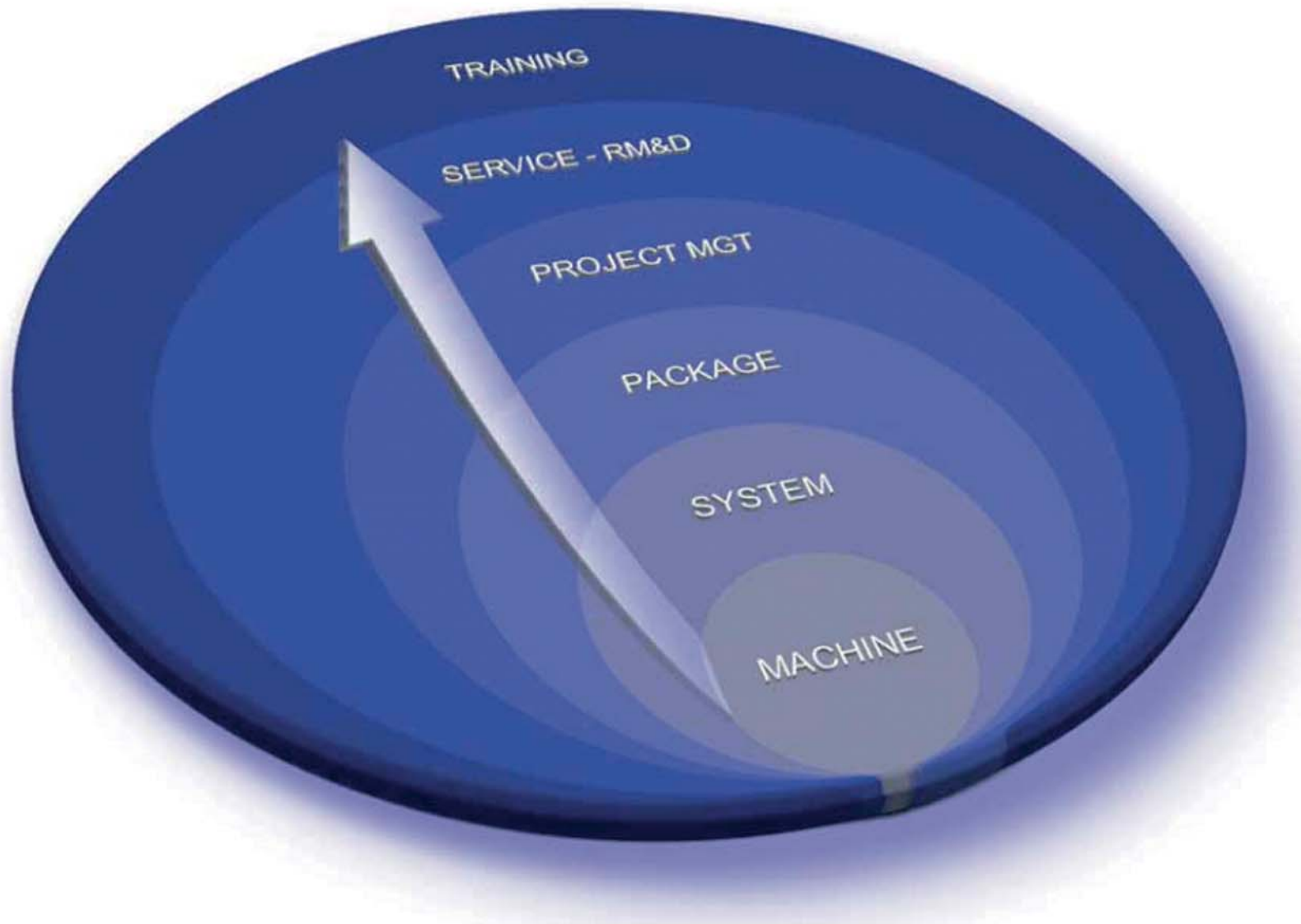
AIR COMPRESSION

- Combustion
- Process
- Services

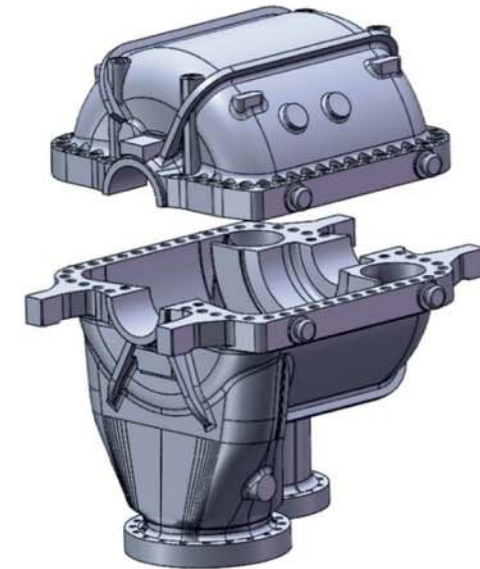
INDUSTRIAL GASES

- Hydrogen
- Nitrogen
- Oxygen
- Air Separation

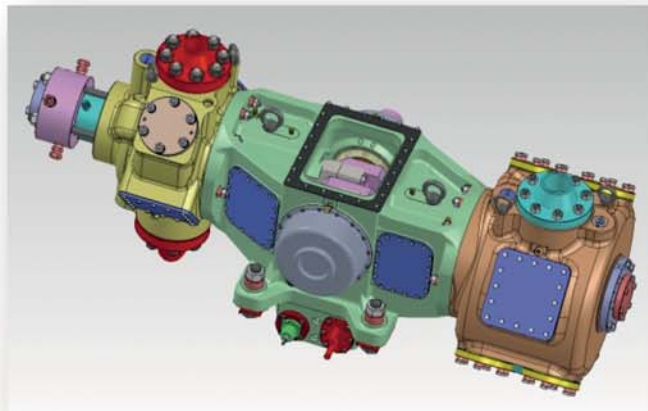




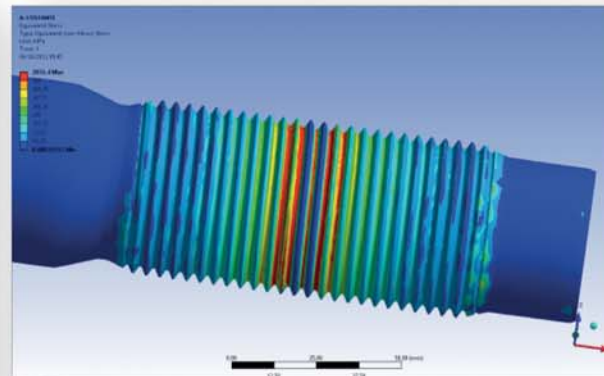
- ✓ From concept to detailed design
- ✓ Complete machine or single components
- ✓ Virtual prototyping
- ✓ FEA, CFD, FSI, Rotor-dynamics (Torsional, Lateral, Modal & Stability analyses)
- ✓ Failure Mode Analysis



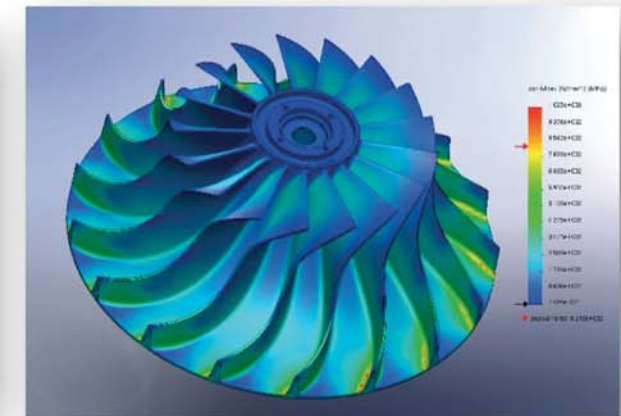
HORIZONTALLY SPLIT
COMPRESSOR CASING



COMPLETE VIRTUAL MODEL



PISTON ROD FEA



IMPELLER FEA

SYSTEM & PACKAGE DESIGN

- ✓ Design of complete packages
- ✓ Piping acoustical and structural study
- ✓ Instrumentation and control
- ✓ Material requisition & procurement specification
- ✓ Bill of materials & Balance Of Plant
- ✓ Testing specification and supervision
- ✓ Field supervision
- ✓ Project management



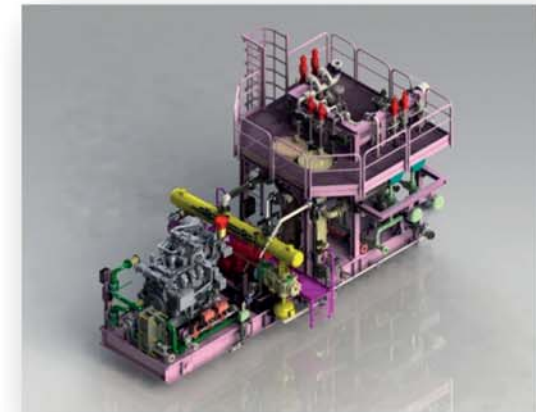
HYDROGEN COMPRESSOR



UNDERGROUND STORAGE COMPRESSOR



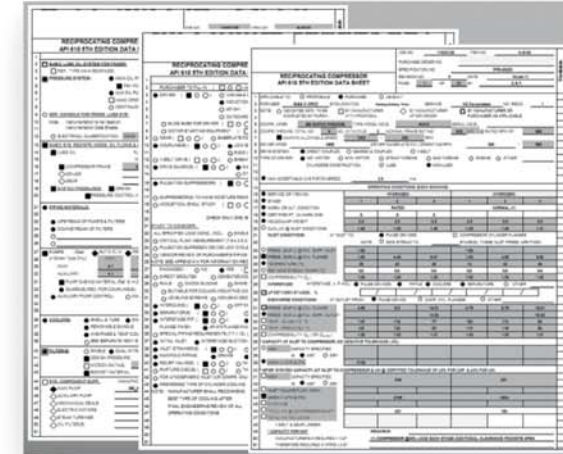
SYNGAS COMPRESSOR



WELLHEAD GAS COMPRESSOR

SUPPORT TO EPC CONTRACTORS

- ✓ Equipment datasheets for inquiry
- ✓ Material requisition & tender documents
- ✓ Line-up of Vendors' proposals
- ✓ Technical bid evaluation
- ✓ Project follow-up
- ✓ Vendor documents review
- ✓ Shop inspections



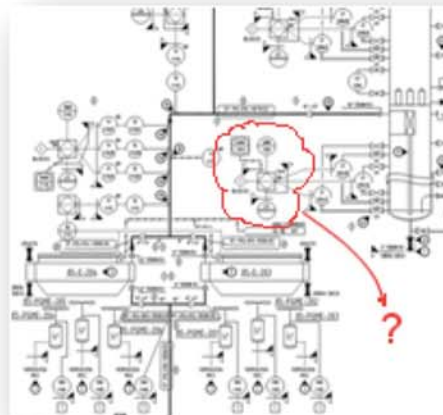
A detailed equipment datasheet form with multiple sections for technical specifications, material requirements, and vendor information. It includes fields for equipment name, model, manufacturer, and various technical parameters.

EQUIPMENT DATASHEETS



Item No.	Item Description	Quantity	Unit	Price	Remarks
1	Compressor	1	EA		
2	Motor	1	EA		
3	Drive Shaft	1	EA		
4	Compressor Housing	1	EA		
5	Motor Housing	1	EA		
6	Drive Shaft Housing	1	EA		
7	Compressor Housing	1	EA		
8	Motor Housing	1	EA		
9	Drive Shaft Housing	1	EA		
10	Compressor Housing	1	EA		
11	Motor Housing	1	EA		
12	Drive Shaft Housing	1	EA		
13	Compressor Housing	1	EA		
14	Motor Housing	1	EA		
15	Drive Shaft Housing	1	EA		
16	Compressor Housing	1	EA		
17	Motor Housing	1	EA		
18	Drive Shaft Housing	1	EA		
19	Compressor Housing	1	EA		
20	Motor Housing	1	EA		
21	Drive Shaft Housing	1	EA		
22	Compressor Housing	1	EA		
23	Motor Housing	1	EA		
24	Drive Shaft Housing	1	EA		
25	Compressor Housing	1	EA		
26	Motor Housing	1	EA		
27	Drive Shaft Housing	1	EA		
28	Compressor Housing	1	EA		
29	Motor Housing	1	EA		
30	Drive Shaft Housing	1	EA		

BID CLARIFICATION FORM

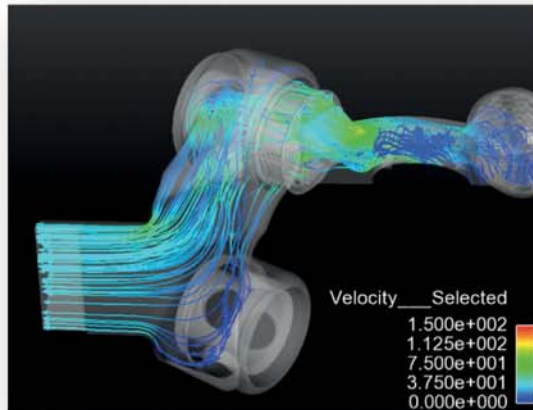


VENDOR'S DOCUMENT REVIEW

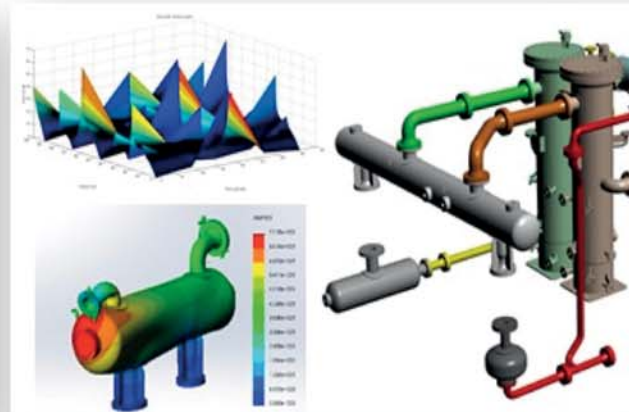


SHOP INSPECTION

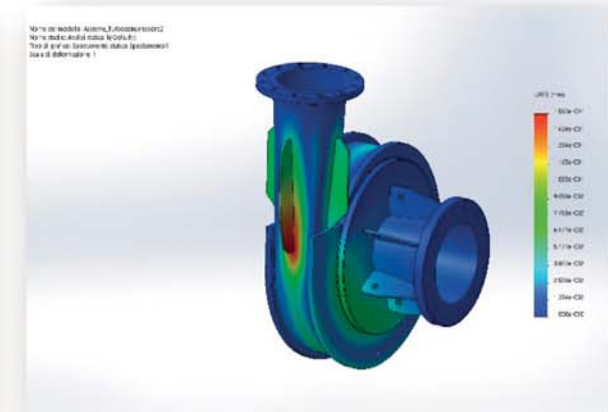
SPECIAL ANALYSES



CFD STUDY



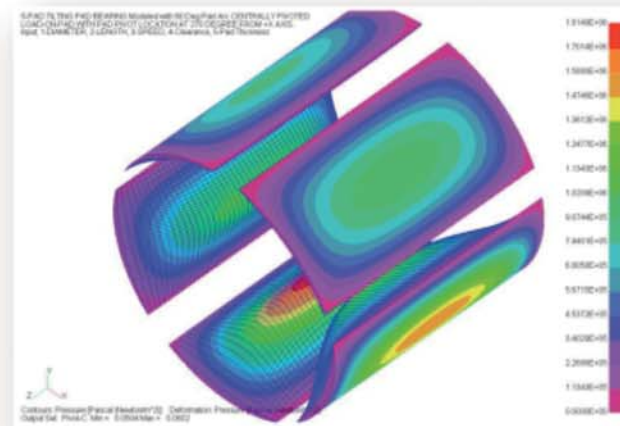
ACOUSTIC STUDY



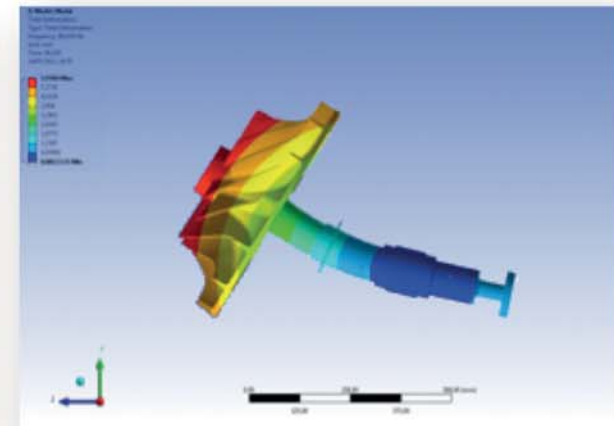
FINITE ELEMENTS ANALYSIS



MECHANICAL RESPONSE



BEARING STRESS STUDY

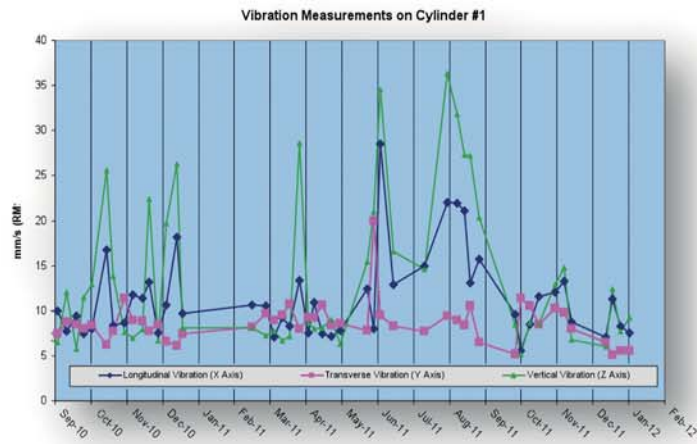


ROTORDYNAMICS STUDY

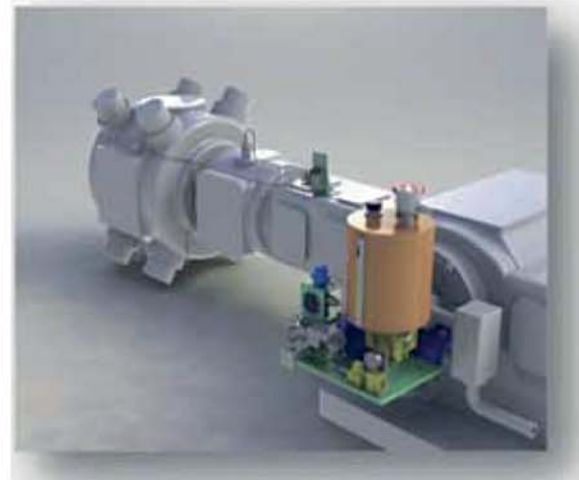
- ✓ RCA & Troubleshooting
- ✓ Remote Monitoring & Diagnostics
- ✓ Machine revamping & conversion
- ✓ Systems & Sub-systems upgrade
- ✓ Asset lifecycle management
- ✓ Performance improvement
- ✓ Site services and field supervision



FAILURE ANALYSIS



REMOTE MONITORING & DIAGNOSTICS

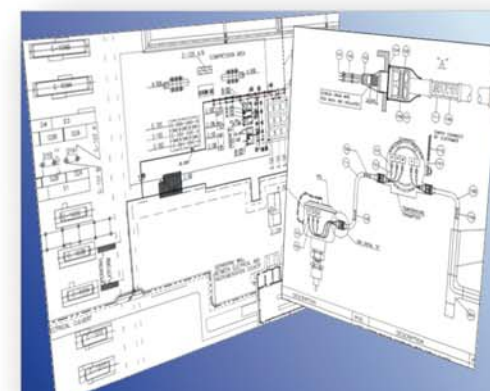
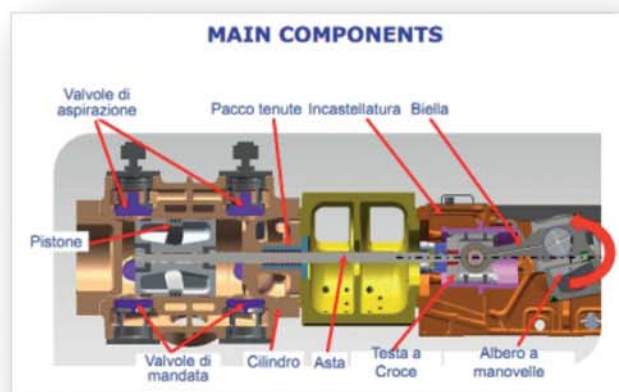


LUBRICATION SYSTEM UPGRADE



SITE SURVEY

- ✓ Training Programs available for:
 - **Reciprocating compressors**
 - **Centrifugal compressors**
 - **Steam turbines**
 - **Process pumps**
- ✓ Basic & Advanced level
- ✓ For Operation & Maintenance personnel
- ✓ For Engineering & Procurement personnel
- ✓ Customizable to specific needs
- ✓ In-house or at client's site



Competence at work for Service and Innovation



www.cstfirenze.com