



RITEC

Company Profile

13, Road 286, New Maadi, Cairo 11435, Egypt
Tel. +20-(0)2-2753-7447 - Fax. 2516-6918
E-mail: ritec@ritec-eg.com
www.ritec-eg.com



Contents:

Company Background

Introduction3
 RITEC Policy3
 RITEC Vision3
 RITEC Mission4
 RITEC Resources5
 RITEC Services6

Technical Services

Introduction5
 Contracts assigned to RITEC in Egypt6
 Contracts assigned to RITEC in the Gulf Area13
 Samples of Technical Jobs carried out by RITEC in Egypt14
 Samples of Technical Jobs carried out by RITEC in the Gulf Area35
 Rotordynamic Analysis Services37
 System Integration-Condition Monitoring37
 Instrumentation available to RITEC38

Training Services

Introduction39
 RITEC & Vibration Institute39
 Training courses in Egypt40
 Training Courses in the Gulf Area40
 Samples of In-House courses provided in Egypt & the Gulf41
 Specialized Practical Training44
 Certification Exams45
 Vibration Institute Membership46
 Corporate Membership46
 Individual Membership47

Supplying Vibration, Balancing & Laser Alignment Equipment

DLI Engineering Products48
 Azima Products48
 LORD Corporation Products48
 Connection Technology Center (CTC) products48
 Hamar Laser Inc. Products49

Company Products

RITEC Alignment Kit50
 RIMAP® Rotordynamic Analysis Software50

Customer List51

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



COMPANY BACKGROUND

Introduction

We would like to introduce our company (RITEC) as a leading company in Condition Monitoring Services and applications of Predictive Maintenance. We have developed unique experiences in this area that we feel your company can utilize. In addition we are the sole representative of the Vibration Institute in the Middle East.

RITEC is the largest condition monitoring Service Company in Egypt and the Middle East and provides complete services including Condition Monitoring and Vibration Analysis, Machinery Alignment, Thermographic Analysis, Maintenance Services, Training, as well as Industrial Software Development.

Vibration as the main field of RITEC's activities, has traditionally been associated with trouble in machines-wear, malfunction, noise, and structural damage. In more recent years, however, vibration has been used to save industry millions of dollars in machine downtime. Evaluation changes in levels of machine vibration has become an important part of most maintenance programs. Similar evaluations are used to solve design problems as well as to establish the cause of chronic malfunctions and failures.

RITEC Policy

Our policy is to provide the highest quality standard of services available anywhere. Complete customer satisfaction is our objective.

RITEC Vision

To be at the forefront of Industrial and Technical Development of the Middle East through World Class Technology and Quality.

RITEC Mission

- To provide Operation and Maintenance Services of high quality and aimed at profitability.
- To provide Industrial Management Services aiming at improving efficiency, reliability, quality and profitability.
- To develop World-Class Industrial Software.
- To provide unique Condition Monitoring Services.
- To provide unmatched Technical Training Programs.

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



RITEC Resources

- Up-to-date computer hardware and software.
- State-of-the-art tools and instrumentation.
- Highly qualified and talented human resources including engineers, technicians, software developers, technical experts and management experts. The company boasts a number of Ph.D. and M.Sc. degree holders.
- A Unique Technical Library with direct links to the US.
- Strong financial backing.

RITEC Services

- Troubleshooting of machines with excessive vibration.
- Vibration surveys of field machinery.
- Engineering studies to remedy vibration problems.
- Engineering studies to modify plant design, overcome commissioning problems and verify any new design proposals.
- Setup and implementation of condition monitoring programs.
- Providing technical training and on-site backup to build up the experience of field plant engineers.
- Optimization of performance of existing plant machinery.
- Balancing of machines and machine trains.
- Machinery and structural testing, including acceptance testing of new machines.
- Machinery vibration control and isolation.
- Machinery condition evaluation.
- Advise on maintenance management, including policies, systems, organization and technologies.
- Training and Certification Services
- Supplying Condition Monitoring equipment
- Rotordynamic Analysis Services
- System Integration-Condition Monitoring

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



TECHNICAL SERVICES

Introduction

The technique of condition monitoring of machinery, using vibration measurement and analysis, provides vital information on the condition of plant machinery that are used, through a predictive maintenance program, to enhance the understanding of the condition of company assets, and further to plan maintenance actions to improve both the availability and reliability of machines. This is one of the areas of RITEC's core business, and RITEC provides integrated solutions for maintenance management, in this very important field for the success of Egyptian and Middle Eastern Industry.

The consulting services of RITEC in the fields of Industrial Management, Machinery Vibration Analysis, Machinery Condition Monitoring and Maintenance Services provide a basic and comprehensive understanding of the Egyptian and Middle Eastern Companies to support their industrial needs. Such high exposure, both in training and consulting, as attested by our Customer List, indicate a deep understanding of the requirements of the Egyptian and Middle Eastern Industry in the chosen core businesses of Industrial Software Development, Training, Vibration Analysis, Condition Monitoring and Maintenance Services.

RITEC provides an additional field service to its customer, which is the alignment service. In this area, RITEC provided both dial indicator alignment and laser alignment techniques based on the machinery requirement and customer request. RITEC represents HAMAR laser company in Egypt and uses its S-650 wireless system in providing the service in the field. In addition, RITEC developed an Alignment Kit both hardware and software to enhance the dial indicator alignment.

Most of our customers are repeat customers, i.e. they return for more services, consulting and/or more training. This is due to the wide experience we have gained, and the quality of service RITEC provides. These are the advantages that are gained by dealing with a specialized company.

In addition, the experience of RITEC personnel is an important factor in this large customer list and repeat business. RITEC personnel consist of a highly qualified, highly educated group of professionals, with wide industry experiences. These experiences, which are gained by working in the oil, cement, steel and general process industries, are used effectively by RITEC to enlarge its customer base, and enhance its consulting and training services. All our personnel are certified vibration analysts categories II, III and IV. We are the only company in Egypt whose personnel are all certified starting from the Chairman to the technicians. Moreover, RITEC team includes a number of M.Sc. and Ph.D. holders

Our policy is to provide the highest quality standard of services available anywhere. Complete customer satisfaction is our objective.

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



Samples of Contracts assigned to RITEC in Egypt

United gas Derivatives Co. (UGDC)

Ongoing

A monthly condition monitoring visits to monitor the performance of about 200 machines in Damietta and Port Said Propane and LNG plants.

الشركة المتحدة لمشتقات الغاز

مازال سارياً

عقد سنوى لعمل زيارات شهرية لمتابعة حالة الماكينات وقياس وتحليل الاهتزازات لحوالى ٢٠٠ معدة بموقعى الشركة ببور سعيد ودمياط

Kandil Steel Complex

Kama For Manufacturing

Kama for Coating & Manufacturing

Kama Glass Factory

On-going

The contract has been expanded to include other plants and their production lines. Such new lines include the New Galvanizing Line and the New Rolling Line.

مجمع قنديل للصلب

مصنع كاما لتشغيل المعادن

مصنع كاما لطلاء وتشغيل المعادن

مصنع كاما للزجاج

مازال سارياً

تم تطوير العقد الخاص بصناعات قنديل ليشمل العديد من المصانع الأخرى وخطوط الإنتاج الخاصة بها مثل خط الجلفنة الجديد وخط الدرفلة الجديد .

Al-Ezz Dekheila Steel-Alexandria

On going-2006

Contract for conducting balancing for Booster Fans, ID Fans, Collapse Fans and Steam Exhaust Fans at Steel Plant No. (1).

شركة العز الدخيلة للصلب - الإسكندرية

٢٠٠٦- ما زال سارياً

عقد خاص بأعمال إتزان لمراوح مصنع الصلب رقم (١) بالإسكندرية. وتشمل هذه المراوح مراوح Booster Fans ومراوح ID Fans ومراوح Collapse Fans ومراوح طرد الأبخرة.

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



Al-Bardi Paper Mill
Al-Sindyan Paper Mill
Ongoing

شركة البردى لصناعة الورق
مصنع السنديان للورق
مازال سارياً

The contract covers the implementation of the condition monitoring program for major equipment including the Yankee machine, rolls, gearboxes, pumps and blowers. The measurements are being conducted every two months.

عقد قياس وتحليل الاهتزازات لمعدات المصنعين ويشمل ذلك ماكينة اليانكي و الدرافل وصناديق التروس والمضخات والبلاورات. يتم القياس كل شهرين على المعدات الخاصة بالمصنعين.

Ezz Steel Mills Co.
2006-2008

شركة مصانع العز للصلب
٢٠٠٦-٢٠٠٨

Engineering Consultation for the Monthly Review for Machinery Database and Reports for the condition Monitoring Program. This includes Setup & review for machinery database. Reviewing analysis reports, including recommendations, conclusions and the required actions.

عقد تقديم استشارات هندسية لمتابعة برنامج مراقبة حالة الماكينات. وتشمل هذه الإستشارات، تشغيل ومراجعة قواعد البيانات الخاصة بالماكينات وكذلك مراجعة التقارير وتقديم التوصيات النهائية.

Hassan Allam Sons
2007

شركة أبناء حسن علام
٢٠٠٧

Contract for performing laser alignment on 40 equipment for the Arabian Cement Plant (under construction). This included Crackers and Belt Pulley rotation units.

عقد عمل محاذاة بالليزر لعدد ٤٠ معدة بمصنع الشركة العربية للأسمنت (تحت الإنشاء) وتشمل وحدات إدارة الكسارات ووحدات إدارة السيور.



Torah Portland Cement Co.

2003-2004

2004-2005

2005-2006

شركة أسمنت طره

٢٠٠٤-٢٠٠٣

٢٠٠٥-٢٠٠٤

٢٠٠٦-٢٠٠٥

The contract has been renewed for consecutive years. The contract includes monthly vibration measurement and analysis for 50 machines in Furnaces 7, 8 and 9. This comprises furnace units, raw mills, cement mills, fans and crackers. Several problems were identified and radically solved.

تم تجديد العقد لسنوات متتالية تشمل عدد ٥٠ معدة تقاس شهرياً في أفران ٩،٨،٧ شاملة وحدات إدارة الأفران وطواحين الخام وطواحين الأسمنت والمراوح والكسارات، وقد تم تحديد العديد من المشاكل وحلها حلاً نهائياً.

Kandil Steel Complex

Kama For Manufacturing

Kama for Coating & Manufacturing

Kama Glass Factory

2005-2006

جمع قنديل للصلب

كاما للتصنيع

مصنع أرك تاتش

مصنع كاما للزجاج

٢٠٠٦-٢٠٠٥

The contract has been expanded to include other plants and their production lines. Such new lines include the New Galvanizing Line and the New Rolling Line.

تم تطوير العقد الخاص بصناعات قنديل ليشمل العديد من المصانع الأخرى وخطوط الإنتاج الخاصة بها مثل خط الجلفنة الجديد وخط الدرفلة الجديد.

Kandil Industries

Kandil Steel Complex

2003-2004

2004-2005

صناعات قنديل

مجمع قنديل للصلب

٢٠٠٤-٢٠٠٣

٢٠٠٥-٢٠٠٤

Contract for Vibration Measurement and analysis for the equipment in the production Lines. These Lines are the Rolling Line, Pickling Line, Galvanizing Line, Piping Line and Skin Pass Line.

عقد قياس وتحليل الاهتزازات لمعدات المصنع الخاصة بخطوط الإنتاج المختلفة ومنها خط الدرفلة وخط التخليل وخط الجلفنة ثم تم إضافة خطى الأنابيب وخط ال Skin Pass لهذا التعاقد.

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



Washington International Inc.
Luxor Waste Water Project
2003

شركة واشنطن الدولية
مشروع معالجة الصرف الصحي بمدينة الأقصر
٢٠٠٣

Contract for acceptance testing of pumps in the lifting station for wastewater at El Karnak pump station in Luxor. Measurements on 3 vertical non-clog pumps and motors were conducted. Installation problems were identified. Technical reports were prepared for each pump.

عقد استلام لمحطة رفع مياه الصرف الصحي بمحطة الكرنك بمدينة الأقصر. تم قياس الإهتزازات على عدد ٣ طلمبات بمحركاتها و بيان مشاكل التركيب لكل منها. وتم إعداد تقرير فني عنها.

Khalda Petroleum Company
2003

شركة خالدة للبتروول
٢٠٠٣

Contract for Vibration measurement and analysis for equipment in the oil and Gas plants in western desert field. This includes Turbines, compressors, pumps and cooler fans. Several problems were identified, one of which was a resonance problem in the cooler fans of the turbines.

عقد قياس و تحليل الإهتزازات لمعدات حقول الغاز والزيوت في الصحراء الغربية شاملة التوربينات والضواغط والطلمبات ومراوح تبريد الزيت، وقد تم إعداد تقرير فني عنها وتحديد العديد من المشاكل منها: وجود مشكلة رنين في هياكل مراوح تبريد الزيوت الخاصة بالتوربينات.

Tourah Cement Company
2002-2003

شركة أسمنت طره
٢٠٠٢-٢٠٠٣

The contract has been expanded to include 50 machines to be measured monthly for furnaces 7, 8, and 9. This includes raw mills, cement mills, fans and crackers. Several problems were identified such as a broken teeth problem in the gearboxes and other problems in cement mills support structure.

تم تطوير العقد ليشمل عدد ٥٠ معدة تقاس شهرياً في أفران ٩،٨،٧ شاملة وحدات إدارة الأفران وطواحين الخام وطواحين الأسمنت والمراوح والكسارات، وقد تم تحديد العديد من المشاكل منها: وجود أسنان مكسورة في صناديق التروس ووجود هبوط في قواعد طواحين الأسمنت.



Suez Cement Company
2003

شركة السويس للأسمنت
٢٠٠٣

Monthly Vibration measurement and analysis for 13 machines in Katameya plant. These include, kiln main drives, raw mills, cement mills and fans. Several problems were detected such as the Kiln I.D.F. unbalance problem.

عقد شهري لقياس وتحليل الاهتزازات لعدد ١٣ معدة في مصنع القطامية وتقديم تقرير شهري عنها وتشمل المعدات، وحدات إدارة الأفران وطواحين الخام وطواحين الأسمنت والمراوح. وقد تم تحديد العديد من المشاكل منها: مشاكل عدم الاتزان في مراوح سحب الأفران.

Ezz Flat Steel Company
2003

شركة العز لصناعة الصلب المسطح
٢٠٠٣

Contract for baseline vibration survey for EZZ flat steel plant-Ain Sukhna. This includes the equipment of the rolling line, 50 pumps in addition to a number of fans. Some problems were detected, some of which were problems in the finishing stands gearboxes.

عقد لأخذ بصمة الاهتزازات الأولى لمعدات مصنع الصلب المسطح الجديد بطريق العين السخنة وتشمل معدات خط الدرفلة على الساخن وحوالي ٥٠ طلمبة بالإضافة إلى عدد من المراوح. وقد تم تحديد عدد من المشاكل منها مشاكل في صناديق تروس قوائم الدرفلة النهائية.

Morrison-knudsen Company
2002

شركة موريسون كندسون
٢٠٠٢

Contract for acceptance testing for potable water and sewage water plant at Aswan City. Measurements on 13 pumps and motors were conducted. Installation and balancing problems were identified. Several motors were changed based on our recommendations. Alignment, bearing and balancing problems were solved, including operating problems such as Cavitation.

عقد استلام لمحطات تنقية مياه الشرب ومعالجة الصرف الصحي بمدينة أسوان. تم قياس الإهتزازات على ١٣ طلمبة بمحركاتها وبيان مشاكل التركيب و الإتران لكل منها. تم تغيير عدة محركات كهربائية و ضبط الإتران والمحاور وتغيير البلى كما تلافي عدد من مشكلات التشغيل وخاصة مشاكل Cavitation وذلك بناءً على توصياتنا.



Procter & Gamble

2001-2003

شركة بروكتر و جامبل

٢٠٠٣-٢٠٠١

Monthly vibration measurement and analysis contract in Always department, including line and fans. Several problems were identified including bearing and alignment problems.

عقد قياس و تحليل الإهتزازات شهريا لخط انتاج الفوط الصحية و يشمل الخط و المراوح . تم خلالها الكشف عن العديد من المشكلات الموجودة نتيجة للإهتزازات العالية و تشمل مشاكل البلى و ضبط المحاور.

Procter & Gamble

1999-2000

2000-2001

2001-2003

شركة بروكتر و جامبل

٢٠٠٠-١٩٩٩

٢٠٠١-٢٠٠٠

٢٠٠٣-٢٠٠١

Monthly Vibration measurement and analysis contract for Pampers line, including measurements on two lines and 17 fans. Several problems were solved including those of fans, bearings and alignment. Contract renewed and still on-going.

عقد قياس و تحليل الإهتزازات شهريا لخط البامبرز و يشمل خطى إنتاج وكذلك مراوح الخططين البالغ عددها ١٧ مروحة. تم حل العديد من المشكلات وخاصة مشاكل المراوح و البلى و ضبط المحاور.

Tourah Cement Company

2000-2001

2001-2002

شركة أسمنت طره

٢٠٠١-٢٠٠٠

٢٠٠٢-٢٠٠١

Monthly Vibration measurement and analysis for fans of kilns (6) and (7). Several problems were identified including bearing and alignment problems.

عقد قياس و تحليل الإهتزازات شهرياً لمراوح فرنى (٦) و (٧). تم خلال العقد الكشف عن العديد من المشكلات نتيجة للإهتزازات العالية و تشمل مشاكل البلى و ضبط المحاور.

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



Belavim Petroleum Company
(PETROBEL)

2000-2001
2001-2002

شركة بتروول بلاعيم (بتروبل)

٢٠٠١-٢٠٠٠
٢٠٠٢-٢٠٠١

Monthly vibration measurement and analysis on all field machinery at the Abu Rudeis field. Volume of work necessitates the continuous presence of RITEC team. Several problems were identified including bearing and alignment problems. Contract still on-going.

عقد قياس و تحليل الإهتزازات شهرياً على كل معدات الموقع في حقول الشركة بأبو رديس. حجم العمل يتطلب التواجد المستمر لفريق شركة رايتك. تم خلال العقد الكشف عن العديد من المشكلات نتيجة للإهتزازات العالية وتشمل مشاكل البلى وضبط المحاور. العقد ما زال سارياً.

Procter & Gamble

1999-2000
2000-2001

شركة بروكتر وجامبل

٢٠٠٠-١٩٩٩
٢٠٠١-٢٠٠٠

Monthly vibration measurement and analysis contract in Utilities department, including pumps, compressors and diesel generators. Several problems were identified including bearing and alignment problems. Contract renewed and still on-going.

عقد قياس و تحليل الإهتزازات شهرياً بإدارة المرافق ويشمل الطلمبات والضواغط وماكينات الديزل و المولدات. تم خلالها الكشف عن العديد من المشكلات الموجودة نتيجة للإهتزازات العالية و تشمل مشاكل البلى وضبط المحاور. العقد تم تجديده وما زال سارياً.

Morrison-Knudsen Company

1999

شركة موريسون كندسون

١٩٩٩

Contract for acceptance testing of pumps in lifting stations for wastewater at Port Said and Ismailia Cities. Measurements on 16 pumps and motors were conducted. Installation and balancing problems were identified. Several motors were overhauled based on our recommendations. Alignment, bearing and balancing problems were solved, including operating problems such as Cavitation.

عقد استلام لمحطات الرفع للصحة بمدينة بورسعيد والإسماعيلية. تم قياس الإهتزازات على ١٦ طلمبة بمحركاتها و بيان مشاكل التركيب و الإيزان لكل منها. تم تعميم عدة محركات كهربائية بناءً على توصياتنا و ضبط الإيزان و المحاور و تغيير البلى كما تلافى عدد من مشكلات التشغيل و خاصة مشاكل Cavitation

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



Samples of Contracts assigned to RITEC in the Gulf

Khafji Joint Operations (KJO) ongoing

عمليات الخفجى المشتركة

٢٠٠٦-مستمر

Periodical Condition Monitoring of KJO critical rotating equipment: Gas Turbine driven Generators, Gas Turbine driven Compressors, Gas Reciprocating Compressors, Centrifugal pumps...etc. This included on site survey for data collection and system design, set-up of equipment baselines, Supply of condition monitoring equipment and software, system commissioning, analyzing/diagnostics of data and defining root causes for all job requirements, condition monitoring training, software and hardware operation and maintenance training, periodical system audits to verify the success of the system. Yearly maintenance contract inclusive of software/hardware updates is also included.

عقد عمل مراقبة دورية لحالة الماكينات الدوارة الحرجة لدى الشركة ويتضمن ذلك توريد أجهزة قياس الاهتزازات والبرامج الخاصة بها وعمل زيارات لجمع البيانات ووضع قواعد البيانات لجميع المعدات وتصميم البرامج الخاصة بالمراقبة ومتابعة تفعيل النظام وعمل تدريب لمهندسى وفنيى الشركة على استخدام أجهزة قياس وتحليل الاهتزازات ومتابعة حالة الماكينات وعمل مراجعة دورية لمتابعة النظام والتحقق من فعاليته. كما يشمل العقد أيضاً عقد صيانة سنوى لجميع المعدات والبرامج.

Samples of Technical Jobs carried out by RITEC in Egypt

ElectroJet September 2008

Vibration Measurement & Analysis for horizontal pumps located at Port Said plant. The condition of the pumps was evaluated and a technical report with the maintenance actions required was issued for the unacceptable machines.

شركة إلكتروجت

سبتمبر ٢٠٠٨

قياس وتحليل الاهتزازات للمضخات الأفقية بموقع بورسعيد. وقد تم تقييم حالة المضخات وتم تقديم تقرير فني بالإقتراحات المطلوبة لصيانة الماكينات غير المقبولة من حيث زيادة نسبة الاهتزازات بها.

Nestle Egypt June 2008

Vibration measurements and analysis for the Ammonia plant screw compressors. Several problems were identified including misalignment, bearing faults and screw element wear.

شركة نستله مصر

يونيو ٢٠٠٨

قياس وتحليل الاهتزازات لضواغط مصنع الأمونيا وقد تم تحديد عدد من المشكلات بهذه الضواغط منها اللامحاذاة وبعض الأعطال بكراسى التحميل.

Middle Delta Electricity Production Co. Talkha Power Station May 2008

Vibration measurement and analysis for the Feed Pump No. 1 of Unit 1. The pump was experiencing a sub-harmonic high amplitude vibration resulting from internal parts rubbing and the motor was experiencing an electrical problem in the stator and a bent shaft problem. These problems were identified and reported to the power station maintenance team.

شركة وسط الدلتا لإنتاج الكهرباء

محطة كهرباء طلخا

مايو ٢٠٠٨

قياس وتحليل الاهتزازات لظلمبة التغذية رقم ١ الوحدة الأولى. وقد كانت الظلمبة تعاني من اهتزازات عالية بسبب احتكاك الأجزاء الداخلية وكان هناك مشاكل كهربائية بالموتور وكذلك وجود شروخ بالعضو الدوار الخاص بالعمود لهذا الموتور. وقد تم تحديد جميع هذه المشاكل وإبلاغها إلى قسم الصيانة بالمحطة.



Italcementi Group-Egypt
Quattamia Factory
August 2008

مجموعة إيتالسيمنتى العالمية
مصنع القطامية للأسمنت
أغسطس ٢٠٠٨

Laser alignment for the main fans including the raw mills, ID fans and cooler fans in the Quattamia factory during the furnace overhaul.

ضبط المحاور بالليزر للمراوح الرئيسية ومنها مراوح طحن الخام، ومراوح التبريد بمصنع السويس للأسمنت خلال فترة العمرة الخاصة بالأفران.

Italcementi Group-Egypt
Suez Factory
February 2008

مجموعة إيتالسيمنتى العالمية
مصنع السويس للأسمنت
فبراير ٢٠٠٨

Laser alignment for the main fans including the raw mills, ID fans and cooler fans in the Suez factory during the furnace overhaul.

ضبط المحاور بالليزر للمراوح الرئيسية ومنها مراوح طحن الخام، ومراوح التبريد بمصنع السويس للأسمنت خلال فترة العمرة الخاصة بالأفران.

Hanover Egypt
September 2007

هانوفر مصر
سبتمبر ٢٠٠٧

Vibration Measurement and analysis for Gas cooler. The recommendation was to check the impeller to check its conformity with the system.

تم عمل قياس وتحليل الاهتزازات لمبرد الغازات وتمت التوصية بعمل فحص للدفاعة المروحية للتأكد من توافقتها مع المواصفات المطلوبة.



Taghleef Industries
June 2007

تغلبى للصناعات
يونيو ٢٠٠٧

Laser alignment for factory machines they have misalignment problems. The Laser alignment was performed using Hamar Laser S-650 coupling alignment system

تم عمل ضبط المحاذاة بالليزر لمعدات المصنع والتي كانت تعاني بعض المشاكل نتيجة اللامحاذاة . وقد تم استخدام أحدث أجهزة الليزر Hamar Laser S-650 فى عملية ضبط المحاذاة

Leoni Wiring Systems
May 2007

شركة ليونى
مايو ٢٠٠٧

A vibration survey was conducted for the main equipment in the factory as a partial fulfillment of the qualifying procedure to receive the quality assurance certificate.

عمل مسح شامل للمعدات الرئيسية بالمصنع من حيث قياس الاهتزازات عليها كإجراء تكميلى لحصول المصنع على شهادة إتمام الجودة.

Italcementi Group plants in Egypt
Suez Group
May 2007

مجموعة السويس للأسمنت
مجموعة إنتالشيمنتى العالمية
مايو ٢٠٠٧

Thermographic surveys for the equipment of the suez group five plants (Suez cement, Kattameyya cement, Helwan cement, Tourah cement and Menia cement. By the thermography survey some machinery faults were detected.

تم عمل قياسات التصوير الحرارى لمعدات مصانع المجموعة (مصنع السويسن مصنع القطامية، مصنع حلوان، مصنع المنيا، مصنع طره) حيث ثبت كفاءة التصوير الحرارى فى تشخيص بعض أعطال المعدات



Suez Cement Company
April 2006

شركة السويس للأسمنت
إبريل ٢٠٠٦

Vibration measurement and analysis for Raw mill fan no. (1) in Kattameya Plant. The problem was identified as an electrical fault in the thyristor as well as line harmonics.

إجراء قياس وتحليل الاهتزازات لمروحة طاحونة الخام رقم ١ بمصنع القطامية. وقد تم تحديد المشكلة في وجود عيب كهربى فى الثيرستور ووجود Line Harmonics.

Al-Bardi Paper Mill (Fine)
April 2006

شركة البردى لصناعة الورق (فاين)
إبريل ٢٠٠٦

Vibration measurement and analysis for the main rolls, blowers and pumps in Al-Sindian Line. Also Vibration measurement and analysis for Yankee line gearbox. Several problems were detected. The most important of which is a problem in the Yankee gearbox which is the main gearbox in the line. Gears have been changed by the manufacturing company to solve the problem.

إجراء قياس وتحليل الاهتزازات للدرافيل الأساسية والبلورات والطمبات فى خط السندان وكذلك تحليل الاهتزازات للجيربوكس الخاص بخط اليانكى. وقد تم إكتشاف عدة مشاكل أهمها مشكلة فى جير بوكس اليانكى وهو الجير بوكس الرئيسى فى الخط. وقد قامت الشركة المصنعة بتغيير التروس لحل المشكلة.

Amreyah Cement Company
(Cimpor Group)
March 2006

شركة أسمنت سيمبور العامرية
مارس ٢٠٠٦

Vibration measurement and analysis for Kiln Fan EP. Balancing has been performed to solve the problem.

قياس وتحليل الاهتزازات وعمل إتزان لمروحة IEP الخاصة بالفرن .



Ecco Associates
December 2005

شركة اكو أسوشيتيس
ديسمبر ٢٠٠٥

Vibration measurements and analysis as well as balancing for Kiln 9 fans in Torah Portland Cement Co. site during the overhaul.

إجراء قياس وتحليل الاهتزازات وعمل إتران لمراوح فرن ٩ بشركة أسمنت بورتلاند طره أثناء عمرة الفرن.

Beni Suef Cement Co. (Lafarge)
October 2005

شركة أسمنت بنى سويف (لافارج)
أكتوبر ٢٠٠٥

Vibration measurement and analysis for a waste fan. The fan shaft was changed during the overhaul and the vibration measurement was necessary. Vibration analysis showed that the fan was working properly

قياس وتحليل الاهتزازات لمروحة الطرد بعد تغيير العمود أثناء العمرة. وثبت أن المروحة تعمل بكفاءة جيدة.

Blue Circle Egypt
September 2005

شركة بلوسيركل مصر
سبتمبر ٢٠٠٥

Thermographic Survey for the mechanical, electrical and production equipment at the plant in Alexandria.

عمل مسح بكاميرات الأشعة تحت الحمراء (ثيرموجرافي) للمعدات الكهربائية والميكانيكية ومعدات الإنتاج للمصنع بالإسكندرية.



Badr Petroleum Co.
November 2005

شركة بدر الدين للبترول
نوفمبر ٢٠٠٥

Vibration survey of Obaiyed field lean solution pumps. These pumps were having a problem of repeated sudden shaft breakdown. Two main reasons were determined: the first one was that the pumps were working under improper operating conditions. The second reason was a defect in one of the control valves and this resulted in impacts. It was agreed with the manufacturer to change the control valve

قياس وتحليل الاهتزازات بموقع الأبيض لطللمبات Lean Solution Pumps والتي كانت تعاني من تكرار كسر أعمدة الطلمبات المفاجئ بدون مقدمات، وقد تم تحديد سببين رئيسيين للمشكلة. أولهما أن الطلمبة كانت تعمل عند ظروف تشغيل ضغط وسرعة تدفق غير ملائمة. وثانيهما وجود عيب في أحد صمامات التحكم مما نتج عنه تولد Impacts. وقد تم التنسيق مع الشركة المصنعة لتغيير صمام التحكم.

General Electric International Inc.
May 2005

شركة جنرال إلكتريك
مايو ٢٠٠٥

Vibration measurement for the skid of turbine unit 9F-A. The measurements were performed to ensure that the skid is not faulty. The measurements were performed according to the International ISO Standards.

قياس وتحليل الاهتزازات للتوربيننة 9F-A بمحطة الكهرباء وذلك للتأكد من سلامة القاعدة الخرسانية. وتم إجراء القياسات طبقاً للمواصفات القياسية العالمية.

Alexandria National Iron & Steel Co.
May 2005

شركة الإسكندرية الوطنية للحديد والصلب
مايو ٢٠٠٥

Vibration measurement and analysis as well as balancing for the fume exhaust fan at ANSDK site. The measurements and balancing were performed according to the international ISO Standards.

قياس وتحليل الاهتزازات وعمل إيزان لمروحة سحب الأبخرة بالمصنع بالإسكندرية طبقاً للمواصفات القياسية العالمية.



Danieli Egypt LTD.
January 2005

شركة دانيلى
يناير ٢٠٠٥

Vibration analysis for air compressor motor in Ezz Flat Steel Plant. It was found out that the problem is due to misalignment between the motor and the compressor.

قياس وتحليل الاهتزازات لموتور كمبريسور الهواء بمصنع العز للصلب المسطح. وقد تم تحديد سبب المشكلة فى وجود عدم محاذاة بين الموتور والكمبريسور.

Badr Petroleum Co.
December 2004

شركة بدر الدين للبترول
ديسمبر ٢٠٠٤

Vibration Measurement and analysis for Gas compressors at the Obayied field. It was determined that the problem is a fault in the blading angle adjustment control and this causes a resonance problem.

قياس وتحليل الاهتزازات بموقع الأبيض لضواغط الغاز أ، ب. وقد تم تحديد سبب المشكلة وهو وجود عطل فى أجهزة التحكم الخاصة بضبط زوايا ريش المروحة مما يتوقع عنه حدوث مشكلة رنين.

Mitsubishi Co.
Tomen Corporation Site
November 2004

شركة ميتسوبيشى
نوفمبر ٢٠٠٤

Vibration measurement and analysis for control valves of 2 turbine units. The measurement goal was to evaluate vibration ratios on these valves to comply with those of the manufacturing Company.

قياس وتحليل الاهتزازات لصمامات التحكم لعدد ٢ توربينة وذلك لتقييم نسب الاهتزازات الموجودة على هذه الصمامات طبقاً لمواصفات الشركة المصنعة.



Morganti Group INC.
November 2004

شركة مورجانتى جروب
نوفمبر ٢٠٠٤

Vibration survey for 11 pumps at the lifting station for wastewater at El-Mansoura as a starting procedure before being delivered to the wastewater authority. Some problems were detected such as misalignment and improper operating conditions.

تحليل الاهتزازات ١١ مضخة بمحطة رفع الصرف الصحى بالمنصورة وذلك تمهيداً لتسليمهم للهيئة. وقد تم تحديد عدة مشاكل منها عدم المحاذاة ومشاكل متعلقة بظروف التشغيل.

Babcock & Wilcox
Suez Oil Processing Site
June 2004

شركة Babcock & Wilcox
Suez Oil Processing Site.
يونيو ٢٠٠٤

Vibration Survey for the Forced Draft Fan – Baltogar of the boiler at Suez Oil Processing Site. Balancing was performed to solve the problem.

إجراء قياس وتحليل الاهتزازات للمروحة Baltogar الخاصة بالغلاية فى موقع شركة السويس لتصنيع البترول. وتم عمل إتران لحل المشكلة.

Washington International
May 2004

شركة واشنطن إنترناشيونال
مايو ٢٠٠٤

Acceptance tests for 3 vertical non-clog pumps at Al-Karnal Pump Station. These are acceptance tests before handing over the pumps to the responsible authority.

عمل إختبارات قبول لعدد ثلاث طلببات رفع بمحطة الكرنك بالأقصر. وتعتبر هذه الإختبارات بمثابة إختبارات قبول للمعدات قبل تسليمهم للهيئة.



Ezz Flat Steel Co.
April 2004

شركة العز لصناعة الصلب المسطح
إبريل ٢٠٠٤

Vibration measurement for 3 compressors at the utility plant. One of the compressors was suffering severe misalignment problem. The problem was solved and vibration levels reduced to acceptable levels.

إجراء قياس وتحليل الاهتزازات لعدد ثلاث ضواغط Ingersoll Rand وكان أحدهم يعاني من مشكلة عدم محاذاة شديدة وقد تم حل المشكلة والوصول بقيم الاهتزازات إلى المستوى المسموح.

East Delta Electricity Production Co.
Attaka Power Station
February 2004

شركة شرق الدلتا لإنتاج الكهرباء
محطة توليد كهرباء عتاقة
فبراير ٢٠٠٤

Balancing for 4 shafts of Air and gas fans at Attaka Power Station during the overhaul. In April of the same year vibration analysis and Balancing were conducted on one of the fans at the power station.

إجراء عملية إيزان لعدد ٤ عمود مروحة الهواء وإعادة الغازات للوحدتين الأولى والثانية بمحطة توليد كهرباء عتاقة أثناء العمرة. وفي شهر إبريل من نفس العام تم عمل قياس وتحليل اهتزازات وإجراء إيزان لأحد المراوح بمحطة كهرباء عتاقة.

Torah Portland Cement Co.
January 2004

شركة أسمنت بورتلاند طره المصرية
يناير ٢٠٠٤

Site balancing for a number of fans in kilns 7,8,9. These fans are Gravel Fans, Exhaust Fans and Jo1 Fans. Balancing was performed according to ISO International Standards.

عمل إيزان في الموقع لعدد من المراوح بأفران ٧ و٨ و٩ ومنها مراوح Gravel Fan، ومروحة الأبخرة Exhaust Fan ومروحة Jo1. وتم عمل الإيزان طبقاً لمواصفات الأيزو العالمية.



Upper Egypt Electricity Production Co.
Kureimat Power Station
January 2004

شركة الوجه القبلى لإنتاج الكهرباء
محطة توليد كهرباء الكريمت
يناير ٢٠٠٤

Vibration measurement and analysis for a turbine driven boiler feed pump. The pump was suffering from repeated high vibration levels. The problem was solved and vibration levels reduced to the acceptable levels.

تم عمل قياس وتحليل الاهتزازات لطلبة التغذية التوربينية . والتي كانت تعاني من مشكلة إرتفاع الاهتزازات بصورة متكررة وتم حل المشكلة وتخفيض الاهتزازات إلى المستوى المسموح به.

Industrial Gases Co.
December 2003

شركة الغازات الصناعية
ديسمبر ٢٠٠٣

Vibration measurement and analysis for a shaft on an air compressor stage#4. The shaft was experiencing repeated problem with each shut down and restarting. The cause of the problem was a defect in one of the seals of stage#4. The problem was solved radically after changing the seal and the shaft has been working properly for 3 years.

تم عمل قياس وتحليل الاهتزازات لعمود مرحلة رابعة لكباس الهواء. والذي كان يعاني من مشاكل متكررة مع كل إيقاف وإعادة تشغيل وقد تم تحديد المشكلة في وجود عيب بأحد ال seals الخاصة بالمرحلة الرابعة وبعد تغييره تم حل المشكلة جذرياً والمعدة تعمل منذ حوالي ٣ أعوام بدون مشاكل.

Babcock & Wilcox
Ayoun Moussa Power Plant
September 2003

شركة Babcock & Wilcox
محطة كهرباء عيون موسى
سبتمبر ٢٠٠٣

Vibration testing for a forced draft fan at Ayoun Moussa power Plant. Balancing was performed after carrying out other recommendations. The vibration levels were reduced to the acceptable level.

تم عمل إختبار وقياس اهتزازات لمروحة FD Fan بمحطة كهرباء عيون موسى لتحديد سبب الاهتزازات وقد تم عمل إتزان للمروحة بعد تنفيذ التوصيات الأخرى، وتم الوصول بالمروحة إلى مستويات اهتزازات منخفضة.



East Delta Electricity Production Co.
Attaka Power Station
July 2003

شركة شرق الدلتا لإنتاج الكهرباء
محطة توليد كهرباء عتاقة
يونيو ٢٠٠٣

Vibration analysis and measurement for a boiler fan to investigate the high vibrations. Balancing was made for the fan and vibration reduced to the acceptable level.

تم عمل قياس وتحليل الاهتزازات لمروحة الغلاية لتحديد سبب الاهتزازات العالية الموجودة بها وقد تم عمل إيزان للمروحة وتخفيض الاهتزازات للحد المسموح به.

Upper Egypt Electricity Production Co.
Assuit Thermal Power Plant
April 2003

شركة الوجه القبلي لإنتاج الكهرباء
محطة توليد كهرباء أسبوط الجديدة
إبريل ٢٠٠٣

Vibration analysis and measurement for the Gases fan, after the overhaul. The fan was in a good condition and working properly.

تم عمل قياس وتحليل الاهتزازات لمروحة الغازات بعد العمرة، وتبين أن المروحة سليمة وتعمل جيداً.

Water King Egypt
April 2003

شركة ووتر كينج مصر
إبريل ٢٠٠٣

Vibration measurement and analysis for the injection pumps in Ras Gara-South Sinai. The problem was identified as impeller wear resulted from the existence of dirt and salt in the water.

قامت الشركة بتحليل الاهتزازات لطللمبات حقن المياه والموجودة بمحطة رأس جاره بجنوب سيناء وتم تحديد المشكلة في وجود تآكل في الدفاعات المروحية نتيجة وجود شوائب وأملاح في المياه.



Fuller Middle East, Ltd
Misr Beni Suef Cement Project.
February 2003

شركة فوللر الشرق الأوسط
شركة أسمنت مصر-بنى سويف
فبراير ٢٠٠٣

Vibration measurement and analysis for 3 fans in Misr-Beni Suef cement plant. A full survey was conducted for a fan support structure, the problem was in the vibration isolators on which the fan base is mounted. The problem of the isolators was rectified and solved.

تم عمل قياس وتحليل الاهتزازات لعدد ٣ مراوح فى مصنع مصر-بنى سويف وتم عمل دراسة كاملة لقاعدة إحدى المراوح وتم تحديد مشكلة فى عوازل الاهتزازات المثبت عليها قاعدة المروحة وتم ضبطها لحل المشكلة.

Suez Cement Company
November 2002

شركة السويس للأسمنت
نوفمبر ٢٠٠٢

The company conducted vibration measurement and analysis to detect a high vibration problem in one of the cement mills in the Katameya plant. The problem was identified as a problem of resonance in the pinion gear teeth that coincides with gearmesh frequency between the pinion & girthgear. Recommendations were to change gear design to overcome the problem.

قامت الشركة بعمل قياس وتحليل اهتزازات لتحديد مشكلة الاهتزازات العالية فى إحدى طواحين الأسمنت بمصنع القطامية وتم تحديد المشكلة فى وجود رنين لأسنان تروس البنيون متطابق مع تردد تعشيق التروس بين البنيون والجيرث جير. وتمت التوصية بتغيير تصميم التروس للتغلب على هذه المشكلة.

Alexandria Petroleum Co.
May 2002

شركة الإسكندرية للبتروول
مايو ٢٠٠٢

Vibration measurement and analysis for a thin film evaporator. The problem was identified as a problem in the supports and it was recommended that re-designing them is important to solve the problem.

تم عمل قياس وتحليل لمبخر الزيوت الموجود بوحدة الزيوت المرتجعة وتم تحديد المشكلة فى دعائم تثبيت المعدة وتمت التوصية بإعادة تصميمها لحل المشكلة.



East Delta Electricity Production Co.
May 2002

شركة شرق الدلتا لإنتاج الكهرباء
مايو ٢٠٠٢

Vibration measurement and analysis for the fan of unit 3 in Attaka Power Station-Suez, the fan was suffering from a chronic high vibration problem. An alignment was done for the fan bearing, balancing was conducted and vibration values were reduced to the acceptable level.

تم عمل قياس وتحليل الاهتزازات لمروحة الهواء للوحدة رقم ٣ بمحطة كهرباء عتاقة - السويس والتي كانت تعاني من وجود مشكلة اهتزازات عالية مزمنة وقد تم عمل محازاة لكراسي المروحة وعمل إتران وتم تخفيض قيم الاهتزازات لتصبح في حدود المسموح به.

Al Bardi Paper Mill
2002

شركة البردى لصناعة الورق
٢٠٠٢

Tri-monthly visit to the plant to conduct vibration analysis and measurement to investigate the problems of the rolls, pumps and fans. Several problems were identified, one of which is a resonance problem in the supports of one of the rolls.

يتم عمل زيارة كل ثلاثة أشهر لقياس وتحليل الاهتزازات لعدد من المعدات يشمل الدرافيل، والظلمبات والمراوح لتحديد حالتها وما بها من مشاكل وقد تم تحديد العديد من المشاكل منها مشكلة رنين في دعائم أحد الدرافيل.

Belayim Petroleum Company
Port Fouad Plant
November 2001

شركة بتترول بلاعيم
حقول بور فؤاد
نوفمبر ٢٠٠١

12 Vertical air coolers for gas turbines were experiencing repeated shaft failures. Spectral analysis indicated excitation at blade pass frequency. An operating deflection shape analysis indicated a support deflection problem. Recommendations to stiffen the support.

كان هناك أعطال في كراسي التحميل ل ١٢ مبرد هواء رأسى للتوربينات الغازية. وقد أظهر تحليل الطيف إثارة عند تردد عبور الريش كما أوضح تحليل انحراف الأشكال مشكلة انحراف في الدعائم وأوصت الشركة بعمل تقوية للدعائم.



Industrial Gas Company
Hawamdia
September 2001

شركة الغازات الصناعية
الحوامدية
سبتمبر ٢٠٠١

Investigation of high vibration on 19000 rpm four-stage gas compressor. Looseness in the bearing after overhaul, and axial clearance problems were identified. Problem solved.

قامت شركة رايتك بدراسة مشكلة اهتزازات عالية لضغط غازات ذو سرعة ١٩٠٠٠ لفة/دقيقة أربع أطوار. وتم تحديد مشاكل تفكك في كرسى التحميل بعد اجراء العمرة وكذلك مشاكل خلوصات محورية، وتم حل المشكلة.

Alstom
June 2001

شركة ألتوم
يونية ٢٠٠١

The Company measured vibrations on the Diesel Generators of the Alag plant. Deterioration of Cylinder 12, as well as the Turbocharger balancing problem were identified.

قامت الشركة بقياس الإهتزازات لأحد محركات الديزل بمحطة التوليد بالألج و ظهر من القياسات العيوب الفنية بأحد السلندرات و الإحتياج الى إتزان الشاحن.

Suez Cement Co.
Suez Factory
May 2001

شركة السويس للأسمنت
مصنع السويس
مايو ٢٠٠١

The company measured the vibration on the Run-In motor of the G131 mill to investigate the problem of high vibration and temperature of the motor. Complete amplitude/phase measurements were conducted on the motor and also a bump test was conducted to determine the shaft natural frequency. Recommendations were issued to check the straightness and eccentricity of the shaft.

قامت الشركة بقياس وتحليل الإهتزازات للمحرك الكهربي G131 الطاحونة رقم ٢ وذلك للتحقق من مشكلة الإهتزازات والحرارة العالية على الموتور. تم القيام بقياسات كاملة للسعة / زاوية الطور وأيضاً تم إجراء إختبار لتحديد الرنين للمحرك. وتم التوصية بقياس استقامة العمود وقياس وجود ميول عليه.

Belayim Petroleum Company
Abu Madi Plant
April 2001

شركة بترويل بلاعيم
حقول بورفؤاد
أبريل ٢٠٠١

Investigation of an eleven stage liquid gas pump, with recurring vibration problem, indicated a serious problem. Operating deflection shape as well as spectrum analysis were used. A skid resonance problem, as well as foundation tilting were identified, as causes of the problem.

قامت الشركة بدراسة مشكلة كبيرة لاهتزازات متكررة الحدوث لطللمبة غازات سائلة ذات ١١ طور. وتم استخدام تحليل انحراف الأشكال وتحليل الطيف في دراسة هذه المشكلة. وقد تم تحديد أسباب هذه المشكلة وهما الرنين وميول القاعدة.

Proctor & Gamble
October 2000

شركة بروكتر وجامبل
أكتوبر ٢٠٠٠

Balancing of two Fans in Pampers Line. Vibration measurement and analysis revealed problems in locally manufactured pulleys. Balancing and adjustment completed satisfactorily.

تم عمل إتزان لمروحتين بخط البامبرز. قياس وتحليل الإهتزازات أظهر وجود مشاكل بالطارات المصنعة محلياً وتم عمل الإتزان وضبط المحاور.

Ameriyah Cement Company
April 2000

شركة أسمنت العامرية
أبريل ٢٠٠٠

High vibration problem in Mill Girth Gear. Recommendations after vibration measurements were to align mill on its axis, to align pinion on its bearing axis, to check clearances in Girth Gear. Also a recommendation for conducting a torsional vibration study.

ظهرت مشكلة إهتزازات عالية بالجيرث جير في إحدى طواحين الخام. وبقياس الإهتزازات تمت التوصية بضبط المحاور وإستقامة الطاحونة على محورها وإستقامة كراسى البنيون على محورها وضبط الخلوصات بالجيرث جير وكذلك القيام بدراسة إهتزازات اللي.

Tourah Cement Company
March 2000

شركة أسمنت طره
مارس ٢٠٠٠

Balancing of two fans for kiln 6. Vibration measurement and analysis revealed misalignment on one of the fans, and gearbox wear problems in the other. Vibration levels were reduced to the international standards of 3mm/s.

تم عمل إتران مروحتين لفرن ٦. قياس وتحليل الإهتزازات أظهر عدم ضبط محاور إحدى المراوح كما ظهرت مشاكل ناكل بالجيربوكس فى المروحة الأخرى. وتم النزول بالإهتزازات الى المعدلات العالمية ٣مم/ث أو أقل.

Nasr Fertilizer Company
March 2000

شركة النصر للأسمدة
مارس ٢٠٠٠

A 600 KW electric motor was experiencing bearing failures every 2 weeks. Vibration measurement and analysis revealed the problem to be unbalance in the blower, causing impact at gearbox and axial motion is transmitted to motor. This problem was solved and the machine is working properly.

مشكلة محرك كهرباء ٢٠٠ ك.وات ينكسر البلى به كل أسبوعين. تم دراسة المشكلة وقياس الإهتزازات و ظهر أن المشكلة فى البلاور الذى به عدم إتران مما ينتج عنه تصادم بالجيربوكس وتنقل كحركة أكسية للمحرك. وتم علاج المشكلة وتعمل المعدة بانتظام.

Alexandria Petroleum Company
February 2000

شركة الإسكندرية للبتروول
فبراير ٢٠٠٠

Vibration measurement on a 900 KW motor with a resonance problem. Analysis of the measured vibration indicated a tilting in the motor-pump foundation base from the ODS (Operating Deflection Shape). Civil Department measured the tilting of 1mm/m. Problem was solved by alignment and horizontality of motor and pump.

تم قياس الإهتزازات بمحرك كهربائى ٩٠٠ ك.وات به مشكلة رنين و تم تحليل الإهتزازات و ظهر من الاختبار الخاص بأشكال الإهتزازات وجود ميول بقاعدة المحرك و الظلمبة. قامت الإدارة المدنية بقياس هذه الميول البالغة امم/م. و تم تلافى المشكلة بضبط الأفقية لمحاور المحرك و الظلمبة.



Tourah Cement Company
July 1999

شركة أسمنت طره
يوليو ١٩٩٩

Balancing of Kiln Fan 7, weighing 10.5 Tons. High vibration levels on this fan prevented it operating above 80% of its speed. Balancing was conducted using 6.1kg, and vibration was reduced from 50 mm/s to 2.7 mm/s. Fan is now operated at any speed. Resulting in a large increase in Kiln production.

تم عمل إتران لمروحة فرن ٧ البالغ وزنها ١٠,٥ طن. وهذه المروحة كان بها إهتزاز عالي يمنع إستخدامها عند أكثر من ٨٠٪ من سرعتها القصوى. وقد تم وزن المروحة بإستخدام ٦,١ كجم وتخفيض الإهتزازات من ٥٠ مم/ث الى ٢,٧ مم/ث, و بذلك تم إستخدام المروحة عند أى سرعة مما نتج عنه زيادة كبيرة فى إنتاج هذا الفرن.

Cairo Waste Water Organization
September 1998

جهاز الصرف الصحى للقاهرة الكبرى
سبتمبر ١٩٩٨

The company measured vibration on vertical pump # 8 in the Ameriya plant. The lower rolling element bearings were deteriorated, as well as a misalignment problem. The Company also measured vibrations on the Diesel Generators of the Alag plant. Deterioration of Cylinder 12, as well as the Turbocharger balancing problem were identified.

قامت الشركة بقياس الإهتزازات على الطلمبة رقم ٨ بمحطة الأميرية و ظهر تآكل فى كراسى التحميل و عدم ضبط المحاور. كما قامت الشركة بقياس الإهتزازات بمحطة التوليد بالألج و ظهر من القياسات العيوب الفنية بأحد السلندرات و الإحتياج الى إتران الشاحن.

Cairo Waste Water Organization
September 1998

جهاز الصرف الصحى للقاهرة الكبرى
سبتمبر ١٩٩٨

The company measured vibration on vertical pump # 8 in the Ameriya plant. The lower rolling element bearings were deteriorated, as well as a misalignment problem. The Company also measured vibrations on the Diesel Generators of the Alag plant. Deterioration of Cylinder 12, as well as the Turbocharger balancing problem were identified.

قامت الشركة بقياس الإهتزازات على الطلمبة رقم ٨ بمحطة الأميرية و ظهر تآكل فى كراسى التحميل و عدم ضبط المحاور. كما قامت الشركة بقياس الإهتزازات بمحطة التوليد بالألج و ظهر من القياسات العيوب الفنية بأحد السلندرات و الإحتياج الى إتران الشاحن.



E.D.C.
April 1998

شركة الحفر المصرية
أبريل ١٩٩٨

The company measured vibration on a drilling rig in the Western Desert, particularly on the Electric Motors. Several problems were identified related to bearings, as well as a major resonance problem on one motor structure.

قامت الشركة بقياس الإهتزازات على معدات الحفر بالصحراء الغربية و بالأخص على المحركات الكهربائية و طلمبات الحقن و ظهر وجود عدة مشاكل خاصة بكراسى التحميل و الإهتزازات العنيفة نتيجة رنين بجسم أحد المحركات.

Agiba Petroleum Company
December 1997

شركة عجيبه للبتروول
ديسمبر ١٩٩٧

The Company studied the predictive maintenance program of Agiba Company and the specifications for the vibration measurements. Recommended venues for the best measurement specifications for the machinery condition monitoring program. Under implementation.

قامت الشركة بدراسة نظام الصيانة التوقعية و قياسات الإهتزازات بشركة عجيبه للبتروول و وضعت حلول للقياسات المثلى و لتوافق النظام مع المعدات الموجودة و جارى التنفيذ حالياً .

Geisum Oil Company, Zeit Bay
1996

شركة جيسوم للزيت
١٩٩٦

The company studied the high vibration of a reciprocation gas compressor for troubleshooting purposes. Recommended reducing dynamic forces and inserting surge volume to reduce reciprocating forces.

قامت الشركة بدراسة الإهتزازات العالية لضغط غازات ترددى. وأوصت الشركة بتقليل القوى الديناميكية و إضافة حجم توافقى فى خطوط الغازات لتقليل تأثير القوى الترددية .



ESSO Suez Inc., Zeit Bay
1995

شركة إسو السويس
١٩٩٥

The Company surveyed on-Shore and off-shore machinery condition. Developed a predictive maintenance strategy to improve asset management in a plant-wide effort. Recommended a complete condition monitoring system and data collection for machinery condition evaluation.

قامت الشركة بالقيام بمسح شامل للمعدات البرية والبحرية لتحديد حالة المعدات . وتم وضع إستراتيجية للصيانة التوقعية لتحسين إدارة المعدات بالموقع بخليج الزيت . وأوصت الشركة بنظام متكامل لقياسات الإهتزازات وجمع البيانات لتحديد حالة المعدات داخل برنامج الصيانة التوقعية .

Abu Youssef Engineering Office
1995

مكتب أبو يوسف الهندسى
١٩٩٥

The Company tested the air cleaner for the TFR vehicle, locally manufactured to conform to the standards of General Motors Corporation. Vibration test was conducted at the Arab Organization for Industrialization under the supervision of RITEC.

قامت الشركة بإختبار فلتر السيارة T F R المصنوع محلياً ليتوافق مع شروط شركة General Motors العالمية . وتم الإختبار الفنى بالهيئة العربية للتصنيع تحت إشراف شركة راينك .

Western Desert Petroleum Company
Alexandria
1994

شركة بتترول الصحراء الغربية- الإسكندرية
١٩٩٤

The Company evaluated maintenance system. Recommended changes leading to the development of Condition Monitoring as a maintenance strategy. Specified in the system and recommended venues for implementation.

قامت الشركة بتقييم نظام الصيانة وتعديله ليواكب إستخدام مراقبة حالة المعدات كبرنامج دائم فى نظام الصيانة . وتم توصيف النظام وإقتراح أوجه للتنفيذ .



BAPETCO, Western Desert
1994 through 1996

شركة بدر الدين للبترول-الصحراء الغربية
١٩٩٦-١٩٩٤

The Company measured the vibration on two scrubber skids exhibiting abnormal vibration conditions. Recommended structural stiffening. Follow-up of the measurements and measurements on associated compressor skids. Studied possibilities of Acoustical Resonance.

قامت الشركة بقياس الإهتزازات على قواعدا اثنين من المعدات التى تفصل السوائل عن الغازات المستخرجة و التى كانت تعاني من إهتزازات عنيفة. فتم تقوية قواعد هذه المعدات و إعادة القياس مع تحسن ملحوظ. و تم كذلك قياس قاعد الضاغط المقابلة و دراسة إمكانية حدوث توافق صوتى نتيجة لسرعات الغازات.

Suco, Zeit Bay
1994

شركة السويس للزيت-سوكو
١٩٩٤

The Company reviewed the condition monitoring strategy of SUCO in Zeit Bay field. Recommended a plan for the successful application of predictive maintenance in the field. Provided field training for selected maintenance engineers on Condition Monitoring and Vibration Analysis of Machinery.

قامت الشركة بمراجعة برنامج مراقبة حالة المعدات بموقع الشركة فى جبل الزيت، و تم وضع خطة للتطبيق العملى الناجح لبرنامج الصيانة التوقعية كما تم تقديم تدريب فى الموقع لبعض مهندسى الصيانة عن كيفية تقييم حالة المعدات و تحليل إهتزازات الماكينات.

National Sewage Authority
1994

الهيئة القومية للصرف الصحى
١٩٩٤

The Company analyzed the vibration and noise in the Ameriya Sewage Station (under commissioning). Measurements of vibration and noise showed critical technical defects in the diesel engines and generators at the Emergency Power Station.

قامت الشركة بدراسة الإهتزازات والضوضاء العنيفة بمحطة مجارى الأميرية (تحت الإستلام). و ظهرت عيوب فنية خطيرة بمحطة الكهرباء الإحتياطية فى المحركات الديزل و مولدات الكهرباء و ذلك من خلال القياسات للإهتزازات و الضوضاء.



Silos and Storage Co.-Safaga
Summer 1994

شركة الصوامع والتخزين - سفاجا
صيف ١٩٩٤

The Company studied the Severe Vibration in one of the silos due to the impacting forces of the belt conveyor. A redesign of the belt conveyor support resulted in the reduction of the impacting forces and the reduction of the vibration.

قامت الشركة بدراسة الإهتزازات العنيفة بإحدى الصوامع و ذلك نتيجة للتردد الدائم للسيور. و نتج عن ذلك إعادة تصميم حامل السيور لتقليل القوى الترددية و بالتالى الإهتزازات.



Samples of Technical Jobs carried out by RITEC in the Gulf

Rajhi Steel Factory

July 2007

مصنع الراجحي للصلب (السعودية)

يوليو ٢٠٠٧

Vibration measurement and analysis for the rolling machines. Many problems were detected including misalignment and electrical problems in the motors. All problems solved upon the application of the recommendations.

تم عمل قياس وتحليل الاهتزازات بخط الدرفلة بمصنع الراجحي للصلب وقد تم اكتشاف العديد من المشاكل منها عدم المحاذاة ومشاكل كهربائية في المواتير وتم حل جميع المشاكل

Ittefaq Steel

April 2006

مصنع الإتفاق للصلب

إبريل ٢٠٠٦

Review and study for machinery database for condition monitoring system and reviewing the condition monitoring system to verify that it is working properly. Some modifications were recommended to make the best use of the system.

تم عمل دراسة وتقييم لنظام مراقبة حالة الماكينات لدى المصنع والتأكد من فعاليته وقد تمت التوصية بإجراء بعض التعديلات للحصول على الإستفادة القصوى من البرنامج



Arabian Cement Company (Rabigh)
January 2006

شركة الأسمنت العربية (رابغ السعودية)
يناير ٢٠٠٦

Vibration measurement and analysis for raw mill fan that was experiencing repeated crash for the motor and fan bearings and shaft was cracked previously. ODS measurements were performed alongside with the vibration measurements and the problem was identified as motion in the machine supports. Redesigning the machine supports was recommended.

تم عمل قياس وتحليل للاهتزازات وقياسات أشكال الإنحناء (ODS) لمروحة طاحونة الخام حيث كان يحدث كسر متكرر في كراسي التحميل الخاصة بالموتور والمروحة جهة الكوبلينج وسبق حدوث شرخ في العمود. وقد تم تحديد المشكلة في وجود حركة في قواعد المعدة وتمت التوصية بإعادة تصميم هذه القواعد

Saudi BinLadin Group
Madinah Haram Complex
October 2001

مجموعة بن لادن السعودية
مجمع الحرم المدني
أكتوبر ٢٠٠١

The gearbox of a chiller in the Madinah Complex was experiencing high vibration. The manufacturer had to recommend an increase in the alarm settings. RITEC investigated the problem, the results indicated an installation problem in gearbox clearances.

مشكلة إهتزازات عالية في صندوق تبريد بمجمع الحرم المدني. صانع المبرد أوصى بزيادة حد الإنذار. قامت رايتك بدراسة المشكلة وأوصت بحل مشاكل التركيب وخاصة الخلوصات بصندوق التروس.



Rotordynamic Analysis Services:

RITEC provides complete rotordynamic analysis services for new and/or newly commissioned rotating machinery. The services include specification of equipment, rotordynamic modeling and analysis, and acceptance testing in the field.

System Integration-Condition Monitoring:

RITEC provides system integration capabilities, to provide customers with the required condition monitoring system, including hardware, software and training and/or services or any combination thereof to support customer requirements in condition monitoring.

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



Instrumentation Available to RITEC

The following represents a partial list of instrumentation and software available to RITEC in vibration analysis and condition monitoring:

- | | | |
|--|--------------|--------------------------------------|
| 1. DLI Watchman | DCA 50 | Data Collector/ Analyzer |
| 2. DLI Watchman | DCA 31 | Data Collector/Analyzer |
| 3. Brüel & Kjaer | 2515 | Spectrum Analyzer |
| 4. Brüel & Kjaer | 2526 | Data Collector |
| 5. Brüel & Kjaer | Sentinel | Software |
| 6. Entek IRD | dataPAC 1500 | Data Collector/Analyzer |
| 7. Entek IRD | Odyssey | Software |
| 8. Entek IRD | Enpac 1200 A | Data Collector/Analyzer |
| 9. Hamar Laser | S-650 | Coupling Alignment System |
| 10. RITEC | | Dial Indicator Alignment Kit |
| 11. Bently Nevada | DVF-3 | Tracking Filter Analyzer |
| 12. Bently Nevada | DVF-3 | Software |
| 13. LabVIEW | | Data Acquisition Software |
| 14. Tektronix | 2205 | Oscilloscope |
| 15. RIMAP® | | Rotordynamics and Balancing Software |
| 16. Notebook Computers | | |
| 17. Networked office computers and printers | | |
| 18. National Instruments Data Acquisition Card | | |
| 19. National Instruments GPIB Cards | | |
| 20. Various sensors and connecting cables | | |



RITEC TRAINING SERVICES

Introduction:

RITEC is a leading provider of vibration and condition monitoring training programs in the Middle East. In addition, RITEC is the sole representative of the Vibration institute, USA in the Middle East.

The last decade proved to be quite fruitful for our training activities. This success stems from our commitment to excellence in providing our services for our customers. We treat each of our training courses as a particular event in which we are not satisfied until each one of the attendees is satisfied. Our core values encourage us to excel in each of our activities. Our vision is to remain the leader of technical and industrial training in the Middle East, providing always state-of-the-art-technologies as our resources allow us to achieve our objectives.

These resources include:

- A core staff of experts on training and of technical staff able to guide our programs.
- A core administrative staff able to manage our training program.
- A core human resources staff able to analyze customer training needs and requirements.
- A wealth of qualified instructors able to cover diversified fields.
- Strategic Alliances with several international institutions and training providers that allow presentation of state-of-the-art technologies.
- Training hardware and software that facilitate the learning process.
- A reliance on information technology as the way of the future and as a means for providing integrated training activities.

These resources allow us to provide our unique training activities to a large customer base effectively and efficiently. We are proud of our customer base that covers many countries in the Middle East, including Egypt, Saudi Arabia, Jordan, Kuwait and Qatar, and spans most of the industrial spectrum.

RITEC & Vibration Institute

RITEC is the sole representative of the vibration Institute in the Middle East. All our courses are offered as Vibration Institute courses. The course certificates are issued from the Vibration Institute, the training material are all from the Vibration Institute, and even the course transparencies are mostly from the Vibration Institute. This assures the quality of the course as conforming to the international level of training.

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



The **Vibration Institute** is a not-for-profit organization incorporated in the USA to spread the knowledge among the specialists working in the field of vibrations through conferences, seminars, meetings and publications. The Vibration Institute publishes *Vibrations* and holds an annual meeting in the USA in June.

Training Courses in Egypt:

Following are the courses that RITEC conducts in Egypt annually. Only 4 courses are offered each year:

- 1- Machinery Condition Monitoring
- 2- Rotordynamics & Balancing
- 3- Practical Machinery Vibration
- 4- Machinery Vibration Analysis
- 5- Structural & Machinery Vibration
- 6- Balancing & Alignment
- 7- Vibration for Technicians

Please visit our website www.ritec-eg.com for more information.

All these courses are designed to suit the needs of the Industry in different sectors (Iron & Steel, Cement Industry, Petroleum, Paper Industry...etc.) and aim at providing our customers with the state-of-the-art-technologies that enable them to excel in this very important field for the Egyptian Industry.

Regular Training Courses in the Gulf Area:

Our well known reputation in the field of training and the large number of attendees to our regular courses and specialized practical courses in Egypt from the Gulf area (Saudi Arabia, Oman, Qatar...etc.) were the main factors that encouraged us to give our courses in the Gulf area so that all people there can make use of our valuable training.

The following courses were conducted in Bahrain and Saudi Arabia;

- 1- Basic Machinery Vibrations (Bahrain, November, 2007 & Saudi Arabia, March, 2008)
- 2- Machinery Vibration Analysis (Saudi Arabia, March, 2008)

The following course has been conducted in November, 2008 in Saudi Arabia:

- 1- Machinery Vibration Analysis

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



In-House Courses

Following are samples of some In-House training courses that have been provided to some of our customers in **Egypt** and **Saudi Arabia** since the last 6 years:

In-house courses in Egypt

- | | |
|---|----------------|
| 1- Amreyah Cement Company
Basic Machinery Vibrations
June 29 th – July 3 rd , 2008 | (Egypt) |
| 2- Kandil Steel
Machinery Alignment
October 28 th – October 30 th , 2007. | (Egypt) |
| 3- Al-Ezz Dekheila Steel Co.
Basic Machinery Vibration
September 9 th – 12 th , 2007 | (Egypt) |
| 4- Al-Ezz Dekheila Steel Co.
Basic Vibration Measurement for Predictive Maintenance
September 5 th – 7 th , 2006 | (Egypt) |
| 5- Al-Ezz Dekheila Steel Co.
Introduction to Machinery Vibrations
May 2 nd – May , 2006 | (Egypt) |
| 6- Kandil Steel
Balancing & Alignment
September 4 th –7 th , 2005 | (Egypt) |
| 7- Kandil Steel
Machinery Condition Monitoring
August 14 th – August 17 th , 2005 | (Egypt) |
| 8- Torah Portland Cement Co.
Practical Machinery Vibration
September 8 th – September 11 th , 2003 | (Egypt) |
| 9- Enppi
Rotordynamics & Balancing
February 25 th – March 1 st , 2001 | (Egypt) |



10- General Petroleum Co. (Egypt)
Machinery Condition Monitoring
February 4th – February 8th, 2001

11- Upper Egypt Electricity Co. (Egypt)
Machinery Condition Monitoring
July 2nd – July 6th, 2000

In-house courses in the Gulf

1- Khafji Joint Operations (Saudi Arabia)
A series of In-house training courses
According to a contract between the two parties

- General Vibration Training
- Basic Machinery Vibration
- Data Collectors
- EMonitor Odyssey Basic
- Other advanced courses to be conducted in due course

2-SABIC (Ongoing) (Saudi Arabia)
Global Contract for Training Services
Global Contract No. 4600003638

3- Saudi Electricity Co. SEC(Jeddah) (Saudi Arabia)
Machinery Vibration Analysis
21-25 Jun 2008

4- Saudi Electricity Co. SEC (Jeddah, Saudi Arabia)
Basic Machinery Vibrations
31 May – 04 Jun 2008

5- Saudi Aramco (Saffaneya) (Saudi Arabia)
Machinery Vibration Analysis
May 10 – May 14, 2008

6- Saudi Aramco (Saffaneya) (Saudi Arabia)
Basic Machinery Vibration
May 3- May 7, 2008

7-Qassim Cement Company (Saudi Arabia)
Basic Machinery Vibrations
February 23 – 27, 2008



- 8- Arabian Cement Company** (Rabigh, Saudi Arabia)
Machinery Alignment
January 21st – January 23rd, 2006
- 9- ISCOA (Siemens Westinghouse)** (Saudi Arabia)
Balancing & Alignment
May 29th, June 2nd, 200
- 10- Saudi Yanbu Petrochemical Co. (YANPET)** (Saudi Arabia)
Rotordynamics & Balancing
December 21st – December 25th, 2002
- 11- Saudi Bin Ladin Group** (Saudi Arabia)
Machinery Vibration Analysis
October 7th – October 10th, 2001
- 12- Saudi Petrochemical Co. (SADAF)** (Saudi Arabia)
Machinery Vibration Analysis
April 21st – April 24th, 2001
- 13- Saudi Iron & Steel Company (HADEED) – Al-Jubail Plant** (Saudi Arabia)
Machinery Condition Monitoring & Fault Diagnosis
February 6th – February 10th, 1999.

All in-house courses are held at Customer site for about 10 to 15 engineers or technicians.



Specialized Practical Training

In addition to the training courses conducted in Egypt and the Gulf Area and the In-house courses, RITEC offers specialized practical training course in 6 weeks, leading to certification according to ISO 18436-2.

Specialized practical training courses have been offered since 2000 to many of KJO (Khafji Joint Operations) & Hadeed (Saudi Iron & Steel Co.) employees who have been trained and certified in Condition Monitoring.

This specialized training is practical hands-on training, with other specialists working on Vibration and Condition Monitoring, where the trainees can interact with other specialists working in the field to gain particular field experience, as well as hands-on analysis experience.

In this specialized training, the trainees will gain familiarity with the equipment used, and actual measurement in the field. Moreover, review sessions are conducted to emphasize the analysis techniques. In addition, the trainees have extended exposure to condition monitoring using Data Collector and Master software. At the end of the training the trainees should be ready to take the Certified Vibration Analyst - Category II exam according to ISO 18436-2.



Certification Program:

As is generally known, all specialized trades that can affect a company's safety and performance are Certified, e.g. welders and inspectors. Recently, there has been a worldwide trend towards Certifying Vibration Specialists. This move started about 5 years ago in the United States, and was pioneered by several Chemical Processing and Oil Companies requesting the certification of their Vibration Specialists to assure their competence in the field, with expected rewards to the company performance and safety record. The **Vibration Institute** has established a world-wide Certification program where three categories of Vibration Specialists are currently recognized:

- Vibration Specialist – Category I
- Vibration Specialist – Category II
- Vibration Specialist – Category III
- Vibration Specialist – Category IV

The Vibration Institute is now the only institution worldwide accredited to certify and provide training to specialists according to the international ISO 18436.

It is estimated that the specialists with one year experience plus one training course similar to Machinery Vibration Analysis I, can pass the Category I certification, while three years of experience plus a course similar to Machinery Vibration Analysis II would be sufficient for Category II.

RITEC is pleased to announce that the **Vibration Institute** Certification exams are conducted regularly in Cairo and the Gulf area each year.

- The exams are prepared and corrected at the **Vibration Institute**, USA.
- All Specialist Certificates are issued from the **Vibration Institute**.



Vibration Institute Membership

Corporate Membership

RITEC, as the sole representative of the Vibration Institute (USA) in the Middle East, offers corporate Membership in the Vibration Institute.

The **Vibration Institute** is a not-for-profit organization incorporated in the USA to spread the knowledge among the specialists working in the field of vibrations, and to create the suitable atmosphere for the exchange of information about Vibration Technology, through conferences, seminars, meetings and publications.

The prominent role of the Vibration Institute is now evident, since the issuing of the international standard ISO 18463, which explicitly specifies the necessity of certifying and training all specialists on condition monitoring and machinery diagnostics. The Vibration Institute is now the only institution worldwide accredited to certify and provide training to specialists according to the international ISO 18436.

To this end, the Vibration Institute holds an annual meeting in the USA in June, and conducts short courses and on-site courses tailored to meet company needs. In addition, the Vibration Institute conducts a four-level Certification program for specialists in machinery vibration, according to **ISO 18436**. Furthermore, the Vibration Institute has many publications, including the quarterly magazine *Vibrations*, which contains technical articles and case histories on vibration, as well as articles on the latest technology used in machinery condition monitoring and predictive maintenance programs.

The benefits of Corporate Membership include:

- 1- 15 free subscriptions to *Vibrations* magazine.
- 2- 7 complementary Memberships for Certified specialists.
- 3- One free Proceedings annually.
- 4- Free e-mail and Telephone Consultations on Vibration Problems.
- 5- 10% discount on RITEC courses.
- 6- 10% discount on each registration fee for the Annual Meeting in the USA.
- 7- Membership plaque.

... and many other benefits.

The annual membership fee is \$ 900.

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



Individual Membership

RITEC, as the sole representative of the Vibration Institute (USA) in the Middle East, offers individual Membership in the Vibration Institute for those working in the field of vibration and condition monitoring.

The benefits of Individual Membership include:

- Four issues of *Vibrations* magazine.
- 10% discount for registration at the Institute's Annual Meeting in the USA.
- Wallet-sized membership card.
- One free Proceedings annually.
- Maintaining your Certification as Vibration Analyst-Category II, Vibration Analyst Category III and Vibration Analyst Category IV.

... and many other benefits.

The annual individual membership fee is \$100.

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



SUPPLYING VIBRATION, BALANCING & LASER ALIGNMENT EQUIPMENT

Our leading role and proven success were significant factors that led international companies to choose RITEC as their representative in Egypt. These well known companies are DLI Engineering, Azima, LORD Corporation, CTC Technology, Hamar Laser, Kingsbury Inc and Messinger Bearings. RITEC as a representative of these companies is committed to provide the best quality of services and products to its clients.

DLI Engineering products employ the most advanced vibration data collection technology and intelligent machine condition assessment software available. DLI's unique approach is a result of more than 38 years of experience developing proven techniques.

DLI's new generation of predictive maintenance products provide answers, not just data. These products range from vibration analysis screening tools to advanced vibration diagnostic data collectors /analyzers and wireless online condition monitoring systems.

Azima offers software and services to improve the customers' industrial machines' reliability. Azima utilizes industry experts and a web portal to deliver information and advice about equipment's condition, in a single plant or across the enterprise. Azima's methods include vibration; thermography; lube oil analysis; motor and battery testing; reciprocating compressor monitoring; and balancing, alignment, and other advanced services. Azima know what lies ahead for the customers' equipment, helping them improve productivity, reduce production risk, control maintenance costs, and more.

LORD Corporation has been in the balancing business for over 20 years, and has sold Balancing Systems into the machine tool and process industries. LORD balancing products have been installed worldwide on a variety of machine tool and process applications. The use of LORD Balancing Systems has helped improve customer's reliability, production capability and quality, while reducing maintenance and manufacturing costs.

LORD's Balancing Systems are designed to correct unbalance in rotating machinery while in operation. The Balancing System continuously reports the state of the system's unbalance, thus providing diagnostic information used to predict system health and optimize service outages. LORD Balancers have been applied to fans, pumps, turbines, generators, compressors, grinders, lathes, spindles, drive shafts and aircraft propellers.

CTC is an international company specialized in vibration analysis hardware products. CTC products are designed and built to the highest quality standards using the best construction

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



techniques to ensure long term survivability. CTC offers high quality durable cables and accelerometers for all data collectors (CSI, IRD or SKF), vibration sensors and transmitters, intrinsically safe vibration sensors and transmitters, junction boxes and power supplies, mounting hardware, as well as installation tools and test equipment.

Hamar Laser Inc. is a worldwide leader in laser alignment technology for over 35 years, they design, manufacture, sell and service a wide range of systems to satisfy virtually any alignment application. All of their systems are renown for their simplicity and ability to align machines faster than any other method.

These products are distributed by RITEC and are used by many customers in Egypt and Saudi Arabia and Bahrain: In Egypt, Italcementi Group, Egyptian Cement Co., Ezz Rolling Mills Co., Egyptian Fertilizers Co. ...and many more. In Saudi Arabia, (Al-Rajhi Steel, Arabian Cement Co.). In Bahrain, (Gulf Aluminum Rolling Mill Co. (GARMCO)).

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



COMPANY PRODUCTS

RITEC Alignment Kit

We are proud to announce the production of RITEC Dial Indicator Alignment Kit. RITEC alignment kit is a powerful tool to adjust shafts alignment using dial indicators accurately and easily. Its flexible components are intended to cater for different shaft dimensions and coupling configuration. With its specially designed software, it has the easiest solution to calculate the required machinery movements with easy to use graphical user interface.

The kit can be used to execute alignment operations for all direct-coupled machine types including pumps, fans, compressors, turbines, blowers, reciprocating machines and many other machines.

Features:

- Robust design with accurate CNC machined parts.
- Compact & light weight components.
- Easy to assemble and use.
- Brackets attached to the shafts using chains for more flexibility.
- The kit can be used for both face & rim and reverse indicator techniques.
- The kit could be used to measure on target faces other than the shaft or the coupling.
- Both techniques can be executed while the coupling is assembled.
- 3 standard kit sizes: <5 inch shaft diameter, 1-10 inch shaft diameter, >10 inch shaft diameter.

RIMAP® Rotordynamic Analysis Software

RIMAP® has been developed with the state-of-the-art rotordynamic analysis techniques, including the capabilities to predict the critical speeds, modal shapes, stability analysis, forced response analysis, and balancing. Through its easy to use GUI, Graphical User Interface, the user can easily design, analyze and troubleshoot rotating machinery such as turbines, compressors, pumps, fans, electric motors, etc.

Features:

- Rotor grows during model build-up
- Speed dependent characteristics Gyroscopic Effects
- Hydrodynamic Bearing Analysis including Plain Journal, Two Axial Groove, Elliptic, Offset Cylinder, 3 Lobe, Pressure Dam, Partial Arc, and Tilting Pad bearings. Also user can define bearing parameters.
- Flexible Support
- Object Oriented Programming
- Flexible Units

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



CUSTOMER LIST

Oil Industry

- Gulf of Suez Petroleum Company (GUPCO)
- General Petroleum Company (GPC)
- Suez Oil Company (SUCO)
- Badr El-Din Petroleum Company (BAPETCO)
- Balayeim Petroleum Company (PETROBEL)
- AGIBA Petroleum Company
- Egyptian Drilling Company (EDC)
- WEPCO
- Esso Suez Inc.
- SUMED
- E. I. Gas Tec
- Zaafarana Oil Company
- Suez Oil Refineries Company
- Alexandria Petroleum Company

- Geisum Oil Company

- El-Nasr Petroleum Company
- Khalda Petroleum Company
- Saudi Aramco
- Al-Khafji Joint Operations (AOC – AGOC) Saudi Arabia

Cement Industry

- Arab-Swiss Engineering Company (ASEC)
- Suez Cement Company
- Assiut Cement Company
- National Cement Company
- Ameriya Cement Company
- Egyptian Cement Company
- Tourah Cement Company
- Beni Suef Cement Company
- Fuller Middle East
- Arabian Cement Company (Rabigh)
- Qassim Cement Company
- Italcementi Group Plants in Egypt

General Industrial

- Alexandria Carbon Black Company
- Eastern Company
- Miraco Carrier
- GHABBOUR Egypt
- Chipsi Company
- Techno Pack Company
- CRUNCHY
- Abou Youssef Engineering Office
- Engineering Company for Exhaust Systems
- Procter & Gamble-Egypt Ltd.
- SIEMENS (Germany)
- Taghleef Industries
- Leoni Wiring Systemx

Power Generation

- Saudi Consolidated Electric Company (Saudi Arabia)
- Egyptian Electricity Authority
- Upper Egypt Electricity Company
- East Delta Electricity Production Company

Service Industry

- DELTA Co. For Electronics
- ENPPI
- First Egyptian Engineering Company
- ATLASCO Egypt
- PICO
- ERISCOM
- KAHROMIKA
- Center for Nuclear Safety
- Cairo Bearing Agency
- Tadawol International (Saudi Arabia)
- Smart Limousine Company
- Smart Car Company
- Stress Technologies Inc. (USA)

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com



CUSTOMER LIST CONTD.

Process Industries

- Alexandria National Iron & Steel Company (ANSDK)
- Abu Quir Fertilizer Company
- Al Ezz Steel Rebars Company
- Al Ezz Steel Mills Company
- El-Nasr Fertilizer Company
- GEMMA Ceramics Company
- HADEED (Saudi Arabia)
- Jordan Phosphate Co, Limited (Jordan)
- Saudi Petrochemical Co. (SADAF) Saudi Arabia
- Saudi Yanbu Petrochemical Co. (YANPET) Saudi Arabia
- Rajhi Steel Saudi Arabia
- Gulf Aluminum Rolling Mill Co. Bahrain

Service Industry

- CJ Analytical (USA)
- 4M Group
- SIAC
- Ferrometalco (FMC)
- Younesta
- NATCOM
- Saudi Bin Ladin Group (Saudi Arabia)
- McDonald Engineering (USA)

13, Road 286, New Maadi, Cairo 11435, Egypt

Tel. +20-(0)2-2753-7447 - Fax. 2516-6918

E-mail: ritec@ritec-eg.com

www.ritec-eg.com