

# EUROPEAN FORUM for RECIPROCATING COMPRESSORS



**EFRC**

About us

## Organisation

The European Forum for Reciprocating Compressors was founded in June 1999 as a communication platform to facilitate the interchange of information between European users, manufacturers and scientists working in the field of reciprocating compressors.

## Background

The increasing demand for economic plant operation has led to a critical discussion of the equipment as to selection, design, maintenance and automation. The well-known advantages of the reciprocating compressor - high efficiency in many different operating conditions, comparatively easy regulation possibilities, suitability for light gases, high compression ratios, and many more - have led to a renaissance of this type of machinery. Nevertheless there are still many reservations concerning the relatively complex mechanical design and the prejudice that reciprocating compressors involve high maintenance costs and that they are not reliable enough.

Up to now specifications and standards prescribed in tenders for reciprocating compressors have been mostly based on American recommendations such as API 618 and NACE, sometimes resulting in unsuitable and unnecessary expensive executions. This is due to the fact that there are still no pertinent European regulations.

## Goals of the Forum

### Exchange of Information and Experience

It is an essential goal of the symposium to create a forum where scientists and engineers engaged in the development of reciprocating compressors are given the opportunity to present the state of the art, to show that, because of progress in engineering, the prejudices mentioned can be overcome, and to demonstrate how they can be overcome. Trends in design and operation of reciprocating compressors will be presented and a "forum of ideas" will provide the opportunity to spread new ideas and/or to carry them out.



The users in their turn can take the opportunity to report on their experience with such machines and to request the industry concerned for solutions to problems.



## **Improve the Image of Reciprocating Compressors**

It will be shown that reciprocating compressors meet all the requirements of modern machines and even create new possibilities. Related Research & Development projects will be presented, and proposals for precompetitive common research can be made.

## **Improved Specifications and Standards**

The forum will also offer an opportunity for constructive criticism concerning the internationally used US standards. The aim should be to provide an interpretation and improvement of the above regulations adapting them to modern experience and specific European needs. Proposals based on scientific knowledge or practical experience will be presented and subsequently integrated into international use in tenders and final inspection.

## **Working Groups**

The goals of the EFRC are supported by the activities of three working groups.

- **Working Group for Precompetitive Research**
- **Working Group for Improvement of International Standards**
- **Working Group for Promotion of "Recip"-Students**

The working groups will be presided over by a chairman appointed by the board of the association. EFRC members will be invited to take part in the work of these groups by sending delegates who engage to take part in the meetings until revoked. The activities of the working groups will be financed by EFRC membership fees unless otherwise defined; expenses incurred by the delegates will be covered by themselves.



Furthermore the EFRC will organize a symposium on technology and operation of piston compressors at least every two years.

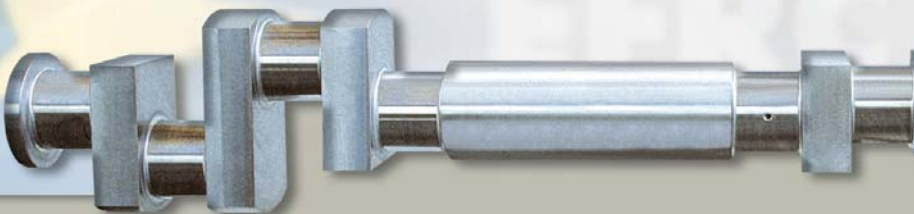
### **Working Group for Precompetitive Research**

This working group will engage in the organisation of precompetitive common research. Naturally the topics of research will be centered more on fundamental research. The intention is for research institutes, manufacturers and users to collaborate, making use of national and international promotion programs.



The chairman of the working group will be informed informally about ideas for projects, and then, in agreement with the other members of the working group, he will initiate formal project proposals. The working group will then elect a member to be responsible for each project. The EFRC members will be invited to participate in the proposed projects and activities and cost plans will be established. It is generally agreed that common projects will be financed in shares agreed upon by the EFRC members taking part. The projects will be carried out by research- or technology centres and universities in close cooperation with the participating project partners.

Knowledge gained in such common projects can be made use of for the time being by the project partners but can also be used by other EFRC members on payment of an appropriate sum to EFRC.



## Working Group for Improvement of International Standards

The task of this EFRC working group should be, to promote and further improve the ISO 13707 so that it will become the world-wide accepted and specified document for reciprocating compressors in the petroleum and natural gas industries.



In order to achieve this goal and to counterbalance the API Task Force, EFRC established this working group. It consists of experts from the following fields:

- end users and plant operators
- compressor manufacturers and
- engineering companies.

They prepare proposals for extending and improving the ISO 13707. A delegate has been nominated from this group to work together with API Task Force.

### Aim

Preparatory work towards 2<sup>nd</sup> edition of ISO 13707:

This 2<sup>nd</sup> edition should become the world-wide accepted working document. The API 618 should become, if necessary, a derivative especially for the American market. ISO 13707, 2<sup>nd</sup> edition is to come into force not later than two years after API 618, 5<sup>th</sup> edition.



About us



## Working Group for Promotion of "Recip"-Students

In order to fulfill engineering tasks connected with manufacturing and

operation of reciprocating compressors, the market will also need in future well trained and motivated university graduates.

To support this concept, the cooperation between the industry concerned and the educational institutions must be improved. Practiced forms of cooperation are: commonly tutored theses for the diploma, special lectures by experts from the industry at universities, excursions, practical training, information on possible jobs for graduates and the recognition of excellence in studies or theses.

In the first place the working group will try to list precise requirements and possibilities of both sides concerning such cooperation. Based thereon it is intended for the working group to act as a mediator and coordinator of the respective activities.



## Membership and Fees

The EFRC is generally open to everybody interested. Membership is initiated by an application for membership (forms are available at the EFRC office). Membership is then achieved by paying the entrance fee and the annual fee to the EFRC account with Deutsche Bank.



Fees are defined by the General Assembly. Currently they are:  
Entrance fee: EUR 2,500.-  
Annual fee: EUR 1,200.- (EUR 600.- Non profit organisations)

## The Association

### Office

European Forum for Reciprocating Compressors e.V.  
c/o Technische Universität Dresden  
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### Board

Dr. Siegmund Cierniak, RWE Energy AG  
Dr. Peter Steinrück, Hoerbiger Kompressortechnik Holding GmbH  
Dr. Leonhard Keller, Burckhardt Compression AG

## Statutes

The statutes of the association are available at the EFRC office. Extracts of the statutes can be found on the website of the EFRC: [www.recip.org](http://www.recip.org)

# Members



Andreas Hofer Hochdrucktechnik GmbH, Germany



Ariel Corporation, USA



Ateliers François SA, Belgium



BASF SE, Germany



Borsig ZM Compression GmbH, Germany



**Burckhardt Compression**

Burckhardt Compression AG, Switzerland



COMPRESSOR PRODUCTS  
International

Compressor Products International Ltd., UK



Cook Compression, USA



Diesel & Gas Turbine Publications, USA



Dott. Ing. Mario Cozzani S.r.l., Italy



DRESSER Italia S.r.l., Italy



Flotech Limited, Sweden



HOERBIGER Kompressortechnik Holding GmbH, Austria



Josef Mehrer GmbH & Co.KG, Germany



Lehrstuhl für Verbrennungskraftmaschinen,  
RWTH Aachen, Germany



Leobersdorfer Maschinenfabrik GmbH & Co.KG, Austria



NEUMAN & ESSER GmbH & Co.KG, Germany



**Peter Brotherhood Ltd**

Peter Brotherhood Ltd., UK



PROGNOST Systems GmbH, Germany



RWE Energy AG, Germany



SIAD Macchine Impianti S.p.A., Italy



Technische Universität Dresden, Germany



Thomassen Compression Systems B.V., The Netherlands



TNO Science & Industry, The Netherlands



Wärtsilä Corporation, Finland

WÄRTSILÄ



Please, visit the EFRC Website:

<http://www.recip.org>