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Introduction to the EFRC Workshop 2012

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TNO Energy*

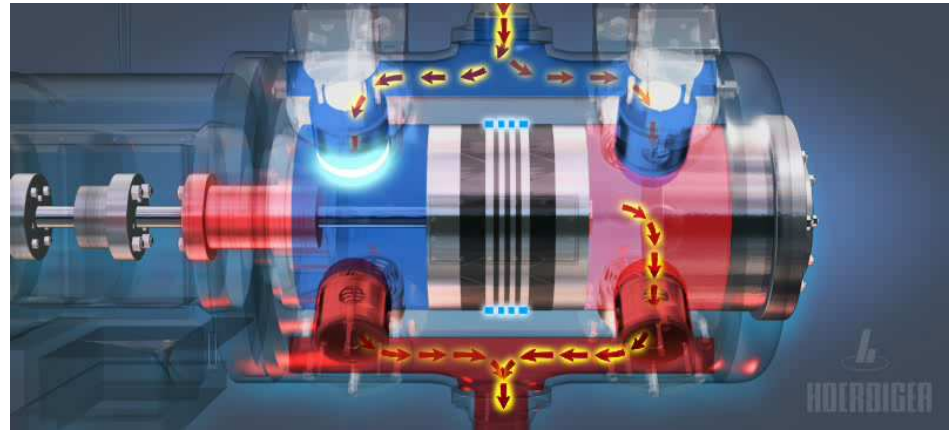
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**EUROPEAN
FORUM
for
RECIPROCATING
COMPRESSORS**

26 September 2012

Overview

- *European Forum for Reciprocating Compressors*
- *History*
- *Aim*
- *Board*
- *Members*
- *EFRC conference 2012*
- *Working groups and activities*
 - *student promotion*
 - *pre-competitive R&D*
 - *standardization*
 - *knowledge exchange*
- *EFRC training on Condition Monitoring and Diagnostics*



Courtesy Hoerbiger



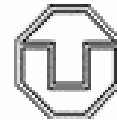
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History

EFRC has been founded in 1999 by:

- *NEA*
- *LMF*
- *Hoerbiger*
- *TNO*
- *TU Dresden*
- *Thomassen Compression Systems*
- *Wartsila Compression Systems*
- *Burckhardt Compression*



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- *To serve as a platform to facilitate exchange of information between vendors, operators and scientists working in the field of reciprocating compressors.*



Aim of the EFRC

- 1. Knowledge transfer
 - Conferences
 - Internet
 - Workshops
 - Training and seminars
- 2. Perform joint research
 - Pre-competitive
 - Aiming at improving the performance of the recip
- 3. Improving the image of the reciprocating compressor
 - Student workshops
 - Field surveys



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EFRC board

- *President: Dr. Rene Peters*
 - *TNO Energy*



- *Secretary: Dr. Peter Steinrück,*
 - *Hoerbiger Kompressortechnik Holding GmbH*



- *Treasurer: Dr. Leonhard Keller,*
 - *Burckhardt Compression AG*



- *Secretary support: Mildred Wengler*
 - *TU Dresden*



Current Members

- 41 members
- 14 manufacturers
- 5 operators
- 1 packager
- 15 component suppliers
- 4 technology institutes
- 2 media representative



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Working groups and activities

- Pre-competitive R&D
 - Peter Duineveld – Howden Thomassen Compression
 - Initiate and fund R&D projects sponsored by members
- Standardisation
 - Andre Eijk - TNO
 - Work on improvement of API 618 and ISO 13707 standards
- Student promotion
 - Siegmund Ciernack – RWE
 - Organise bi-annual student workshop
- Marketing and EFRC conference
 - Martina Frenz - NEA
 - Organise bi-annual EFRC conference
 - Maintain website www.recip.org



Student promotion

- *Site visit OEM's and operations with recipis for international students*
 - *Participation from many EU countries*
 - *Presentations by EFRC members*
 - *Excursions to production sites*
 - *Exercise for students (incl. award!)*
-
- *2002 Benelux and Germany*
 - *2004 Poland*
 - *2006 Italy and Switzerland*
 - *2008 Austria*
 - *2010 United Kingdom*
 - *2012 France*



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EFRC conference

- *International conference on reciprocating compressor development and operation.*
 - *Strong international participation*
 - *Papers by OEM's, operators and suppliers*
 - *Training seminar for young engineers*
-
- *1999 Dresden*
 - *2001 The Hague*
 - *2003 Vienna*
 - *2005 Antwerp*
 - *2007 Prague*
 - *2008 Dusseldorf: International Rotating Equipment Conference*
 - *2010 Florence*



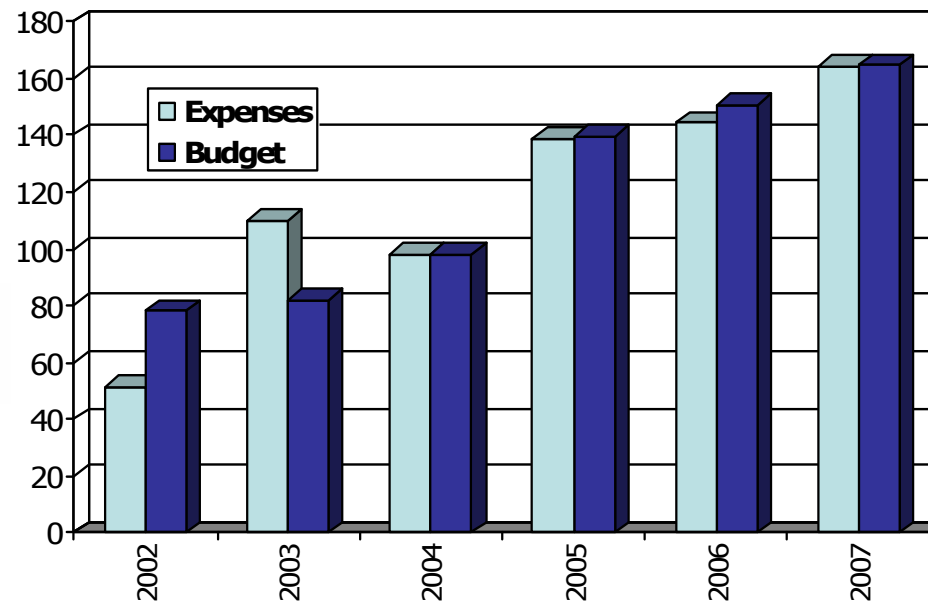
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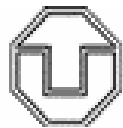
EFRC Joint Research

- *Combining forces of EFRC members to solve / investigate problems which are beyond the scope of a single player*
- *Basic research and precompetitive research carried out at research institutes or universities*
- *Scientific arm of the reciprocating compressor community*

R&D Budget in kEUR



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RWTHAACHEN



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The EFRC Research Group

- *Open to all EFRC members*
- *Annual budget funded by participating members*
 - *Selection of ideas*
 - *Approval of projects*
 - *Projects are executed by research partners*
 - *Project controlling*
- *Results are owned by EFRC*
- *Research results are disclosed to EFRC research group members only*

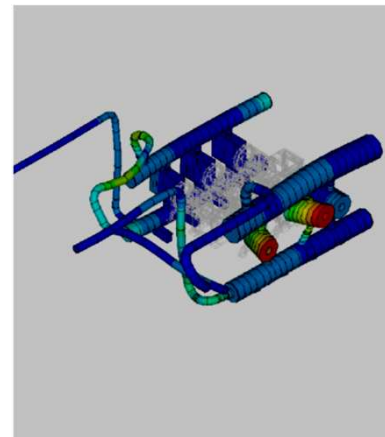


Example project: Allowable Vibration levels

- Motivation:
 - Vibrations are an important design criteria for installations
 - Existing standards are considered to be not specific
- Result:
 - EFRC Guideline on vibrations
 - Working towards ISO standard
- Approach:
 - Literature search
 - Interviews with stakeholders
 - International Workshop
 - Report



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EFRC Training

Condition Monitoring and Diagnostics

Time	Topic
13.00 - 13.15	Introduction to the programme
13.15 – 13.45	General design elements of protection, condition monitoring and diagnostic systems
13.45 - 14.15	Standard instrumentation used on reciprocating compressors
14.15 – 14.45	Rider ring wear measurement methodologies
14.45 – 15.15	Coffee Break
15.15 – 15.45	Condition monitoring and diagnostics of compressor valves
15.45 – 16.15	Allowable vibration and pulsation levels in compressor installations
16.15 – 16.45	On site vibration diagnosis – Practical approach guidelines
16.45 – 17.00	Summary and Conclusions



Please respect



NO SMOKING

throughout the event!



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Please switch off your



Mobile

during the session!



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Thank you for your interest

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- Or visit www.recip.org for more information about EFRC



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