

Balanced Opposed Compressor BS102, Leobersdorfer Maschinenfabrik (AUT) – test compressor for R&D project "Internal Piston Rod Cooling"

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European Forum for Reciprocating Compressors



EFRC R&D Working Group



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Who we are

The EFRC Organisation

The European Forum for Reciprocating Compressors was founded in June 1999 as a non-profit-association. It supports users, manufacturers and scientists working with reciprocating compressors in terms of technology, exchange of experience, initiation and collaboration on precompetitive research, standards and guidelines, training and student exchange.

Its geographical reach has grown from Central Europe to entire Europe and to the US and from 8 initial members to 42 in 2018.

Our Goals

Exchange of Information and Experience

- Conferences (EFRC and IREC (with VDMA))
- Cooperation with KRMEA (South Korea)
- Internet (www.recip.org) & LinkedIn
- Workshops + Trainings

Improve image of reciprocating compressors

- Student Workshops and Excursions
- Standardisation and Guidelines (→ ISO-Standards)

Perform joint research

- Precompetitive R&D
- Aiming to improve the performance of the recip

Working Groups

- Goals of EFRC supported by activities of four working groups:
 - Precompetitive Research
 - Standardisation
 - Training
 - Young Talents (Students Workshop)

Each working group is presided over by a chairperson and is open for every EFRC member willing to participate. The EFRC membership fees help to finance the activities of the working groups. Results are presented at members' assemblies and EFRC conferences.

EFRC R&D Working Group

Our Aims

- Joint research → only explorative research and precompetitive R&D
- Improve performance of reciprocating compressors
- Combine knowledge of users, manufacturers and research institutes
- Discuss, initiate and finance projects executed by universities or research institutes

Our precompetitive research

- Pain points in operation of recips (e.g. studies on vibration, oil or noise related topics)
- Feasibility studies of new technologies (e.g. cooled piston rod, new piston materials or recips operated as expansion machines)
- Develop simulation tools (e.g. for the simulation of flow and thermodynamics in compression chambers or for the simulation of oil film thickness on the cylinder wall)

How we do it

- All EFRC members can join the R&D Working Group
- Annual budget funded by participating members
- Two meetings every year
- Results are disclosed to Working Group members and owned by EFRC

Project examples

Lightweight materials for compressor pistons



Light weight piston demonstrator from a project exploring the feasibility of using non conventional materials

Valve Systems for piston expansion machines



Forced actuated poppet valves enables existing compressor being operated reversible as expansion machine

How to join

- First: Join the EFRC! Send "Application for Membership" form to contact@recip.org.
- Form available on EFRC website www.recip.org
- Contact the R&D Working Group chairman to get an invitation for the next meeting



Chairman: Dr. Marc Langela Head of Material and Product Development STASSKOL GmbH Marc.Langela@stasskol.de

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