Speakers

Dr. Gunther Machu

Head of Global Product Management Compressor Solutions

Studied chemical engineering at the Technical University, Vienna; PhD in Fluidmechanics at the Technical University, Graz;
Started 2001 with HOERBIGER as R&D engineer, In 2007 appointed for head of Corporate R&D Compressor Solutions. Since 2009 head of Global Product Management Compressor Solutions.

Speakers

Ing. André Eijk
Senior Mechanical Consultant

Bachelor's in Mechanical Engineering;
Working for the TNO since 1979; Member of the task force groups of the API Standard 618 (reciprocating compressors), API 674 (reciprocating pumps) and API 688 (pulsation & vibration control of positive displacement machinery); project leader of the ISO Standard 10816-8 (standard for vibrations in reciprocating compressor systems); chairmen of the standardization group of the European Forum for Reciprocating Compressors (EFRC);

Agenda

0. Introduction
- Speakers
- Agenda
- Types of compressors
- Applications where recips are used

1. Manufacturing and sizing
- API and NACE standards
- Compressor sizing
- Compressor limitations

2. Principles of compression
- Gas law and working principle
- Volumetric efficiency, calculating capacity and power
- Valve losses

Agenda

3. Foundations and anchors
- Introduction Anchor Bolt and Foundation Design
- Static and Dynamic Loads for Anchor Bolt & Foundation Design
- Concrete Block Design Rules
- Soil, pile and foundation interaction
- Choosing Anchor Bolts
- Installation Anchor Bolts
- Grout (Cement & Epoxy)
- Thermal Expansion & Fatigue of Bolts

4. Installation, operation and maintenance
- Best installation practices
- Mechanical failure modes, how to recognize them, and what to do
- Process-related (gas composition, piping configurations, etc.)
- Maintenance-related (component defects, scheduling, etc.)
- Operating-related (lubrication levels, off-design operation, etc.)
- Control methods (bypass, step control, stepless, etc.)
- Condition monitoring (parameters, machinery protection, etc.)

Agenda

5. Pulsation and vibration

- Acoustic Analysis of Reciprocating Compressors
- Mechanical Analysis of Reciprocating Compressors
- Summary of the API 618 Standard 5th edition
- Optional analysis according API 618, 5th edition
- Summary of allowable levels of the API 618,
  Design Approach 3, 5th edition
- Summary ISO Standard 10816-8 (Field Surveys)
- Case Study API 618 Pulsation & Vibration Analysis

6. Summary and conclusion