

# **XperSEAL Zero Emissions Packing**

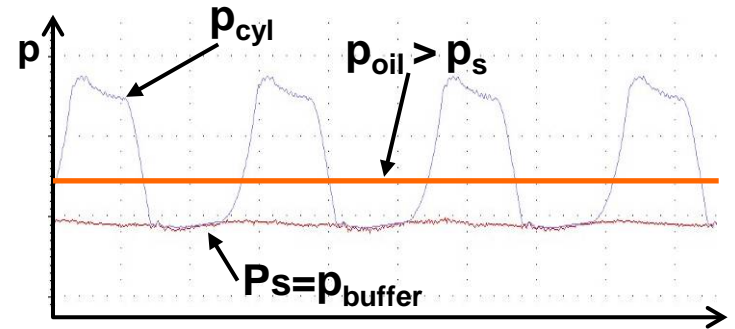
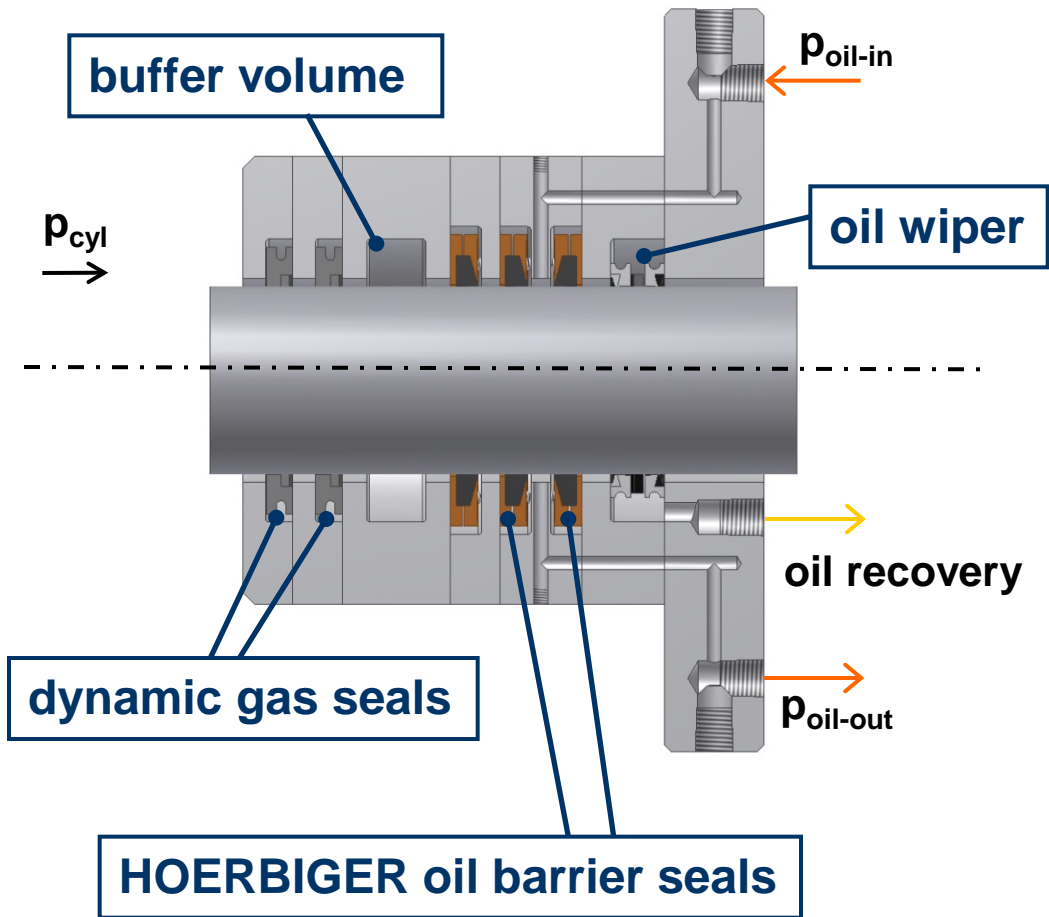
## *Status and Update*

Gas Electric Partnership Conference  
Cypress, TX Feb 18 & 19th 2015  
Christean Kapp, HOERBIGER



# How Does it Work?

**XperSEAL system maintains sealing regardless of changes in conditions**



**Reduced loading on rings!**



## Customer tests

**Öresundskraft / Helsingborg, Sweden – running since 02/12**

- CNG , Ariel compressor **2 new units now added**



**NAM / Den Helder, Netherland – running since 04/2013**

- Natural Gas, Thomassen compressor **more units to be ordered**



**Salam Gas Plant / Egypt – running since 04/2013**

- Propane, Gardner Denver compressor



**RAG / Haidach, Austria – installed end of 06/2014**

- Natural Gas, LMF compressor



**Repsol / Puertollano Spain- Tests in 08/2014**

- Syngas, GE NP Compressor



**LMF / Austria in-house Test – 02/2014**

*Biogas, LMF compressor*



## **December 2014 installation, Michigan USA**

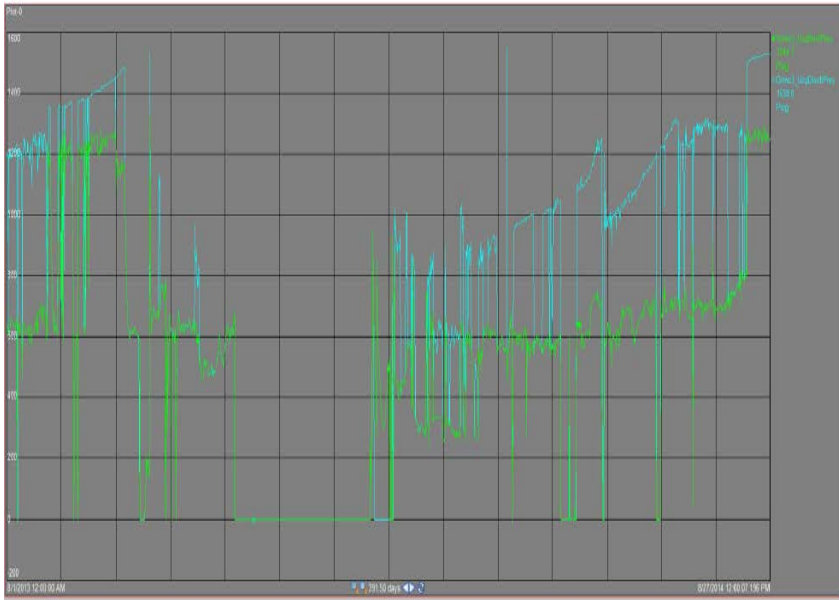
|                             |  |
|-----------------------------|--|
| <b>Location:</b>            | <b><i>Michigan, USA</i></b>  |
| <b>Process:</b>             | <b><i>Gas Storage</i></b>  |
| <b>Compressor:</b>          | <b><i>Cooper Bessemer GMV</i></b>  |
| <b>Stages / Cylinders:</b>  | <b><i>single / 6</i></b>   |
| <b>Pressures ratios:</b>    | <b><i>seasonal variation<br/>1.1 – 2.1 ratio flex.</i></b>                                 |
| <b>Rod diameter:</b>        | <b><i>3" (76,2 mm)</i></b>   |
| <b>Speed:</b>               | <b><i>300rpm</i></b>   |
| <b>Customer motivation:</b> | <b><i>reduction of natural gas leakage to atmosphere in Running and Standby modes.</i></b> |



**RESULTS: Running and Standby mode less than .2 scfh gas leakage**

# Experience

**RESULT: Running and Standby mode less than .2 scfh**

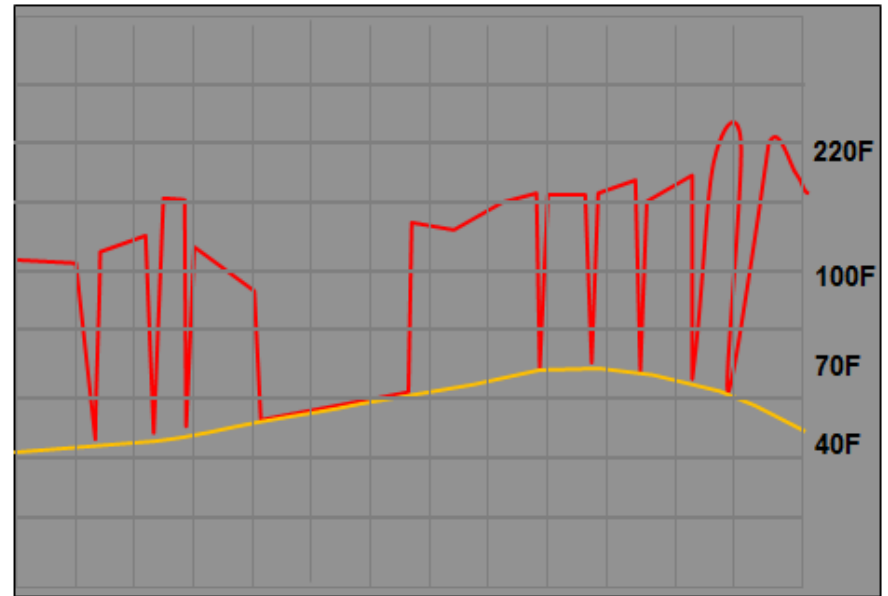


Discharge Pressure ———

Suction Pressure ———

— Discharge Temperature

— Suction Temperature



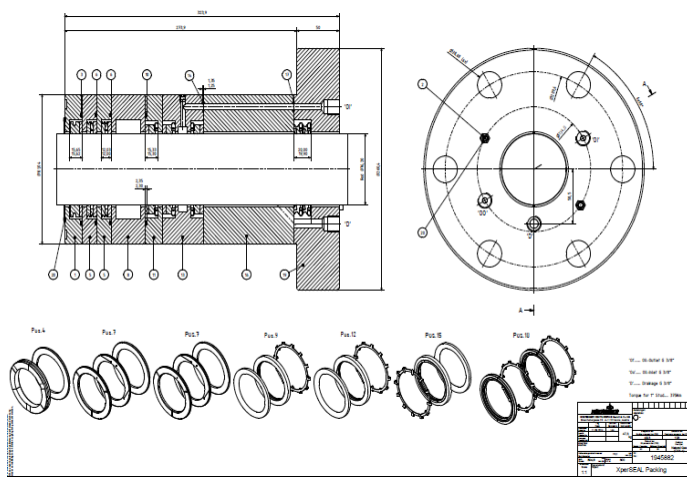
**Huge fluctuations in pressure and temperatures**





# Lessons Learned – Installation and Viscosity

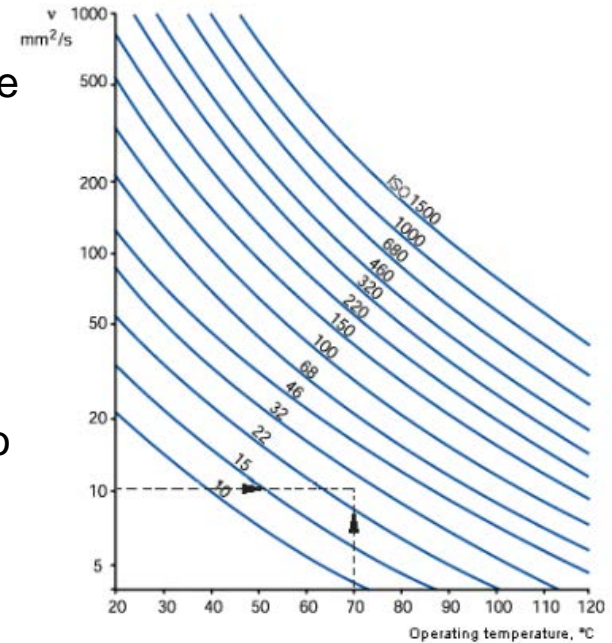
“special attention to installation”



## Improved Temperature Oil Viscosity Control

Very large temperature swings change effective viscosity significantly.

In a broad, medium temperature-viscosity range, oil usage is minimal. At extreme points this increases so that improved temperature control is required.





# **HOERBIGER**

*because performance counts*

Thanks for your attention - ANY QUESTIONS ?

Presenter: Christean Kapp, Sr VP

E-mail: [chris.kapp@hoerbiger.com](mailto:chris.kapp@hoerbiger.com)

HOERBIGER Compression Technology, Houston, TX

