Burckhardt Compression

Compression solution for polyolefins production

A sustainable solution with proven reliability

In the polyolefins plants, polymer powder is released from reactor and separated from the gas in a discharge cyclone at atmospheric pressure.

Any unreacted monomer separated from this powder is compressed and either recycled or returned to the upstream olefin unit for recovery. The final degassing of the polymer is done in a purge silo by flushing with nitrogen. The purge off-gas is sent to a recovery system. In polypropylene process, the gas at the suction of the reciprocating compressor may contain small quantity of polypropylene powder as well as abrasive TEAl (Triethylaluminium). TEAl is a substance which may also burn spontaneously under excessive overheating.

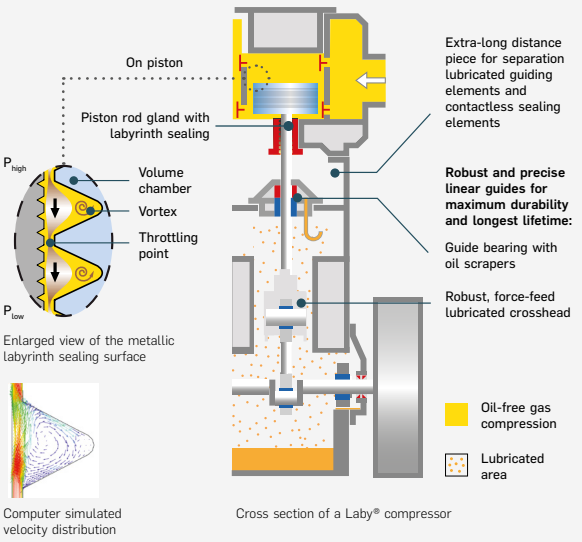
Customer benefits

- Increased uninterrupted production, due to true contactless sealing technology preventing unwanted hot spots and polymerization
- Zero gas leak to environment due to gas-tight compressor design
- Increased lifetime of crank-gear components by preventing lube oil contamination with dirty gas in the compressor frame
- Short Mean Time to Repair (MTTR) enabled by the friction-free labyrinth sealing which is insensitive to catalyst particles
- Outstanding execution of commissioning & start-up, operation, maintenance & life cycle support by our globally trusted services organization

Laby® – Labyrinth compressor technology that matters

Labyrinth sealing technology

Contactless labyrinth sealings for highest reliability:

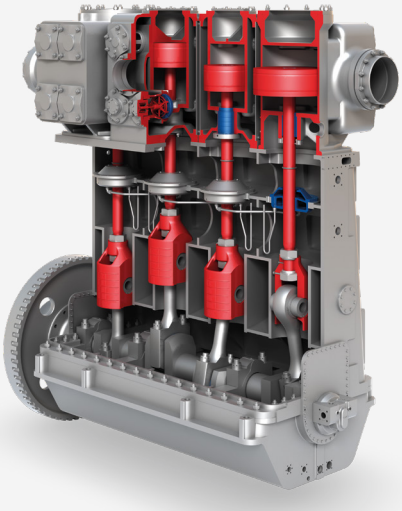


Enlarged view of the metallic labyrinth sealing surface

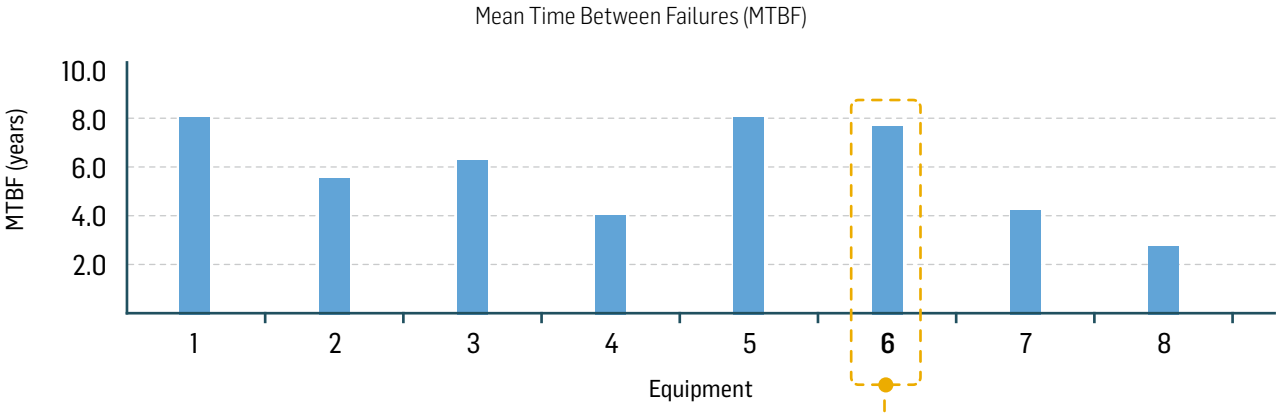
Computer simulated velocity distribution

Cross section of a Laby® compressor

Laby® compressor



Laby® – Reliability of production



No.	Equipment	MTBF (years)
1	Centrifugal compressors (clean services)	8.2
2	Centrifugal compressors (fouling services)	5.6
3	Screw compressors, liquid injected	6.2
4	Screw compressors, dry type, clean gas	4.0
5	Axial compressors	8.0
6	**Reciprocating compressors, labyrinth-piston type**	**7.8**
7	Reciprocating compressors, lubricated type	4.1
8	Reciprocating compressors, contacting piston, non-lubricated	2.8

The Laby® is best in class and is comparable to centrifugal compressors

Source: "Looking for RDFA databases? Consider failure statistics" by H.P. Bloch, Hydrocarbon processing / Jan 2002

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