

## CASE STUDY

<b>Product</b>	Packings
<b>Segment</b>	Chemical Industry
<b>Case n°</b>	2017.001



### | Situation

A reciprocating compressor operating with carbon dioxide (CO<sup>2</sup>) at a fertilizer production plant was presenting frequent malfunctioning of the packing.

In view of the compressor high operational levels of pressure and temperature, the original packing included a water refrigeration system. However, this system was presenting frequent leakage problems, and water in contact with CO<sup>2</sup> became corrosive.

Besides the consequent drastic reduction of the packing life span, corrosion made reconditioning impossible. So, in order to reduce maintenance costs and production losses caused by non programmed stop occurrences, the client turned to Selco for a definitive solution.

### | Compressor

<b>Manufacturer</b>	Kobe Steel
<b>Model</b>	FM4
<b>Gas</b>	Carbon Dioxide (CO <sup>2</sup> )
<b>Final Pressure</b>	208 bar



### | Solution

After analyzing the compressor application, Selco developed a packing with an ideal arrangement of packing rings made of last generation materials. This allowed a better distribution of the heat generated inside the packing case.

The new project eliminated the original refrigeration system, at no compressor operational impairment. The material used was Selco Sc-90 that contained a thermoplastic (PolyEtherEtherKetone) highly resistant to heat and mechanical demands.

Besides the packing rings, the packing case was also redesigned with a material that was more resistant to corrosion, according to Selco quality standards.

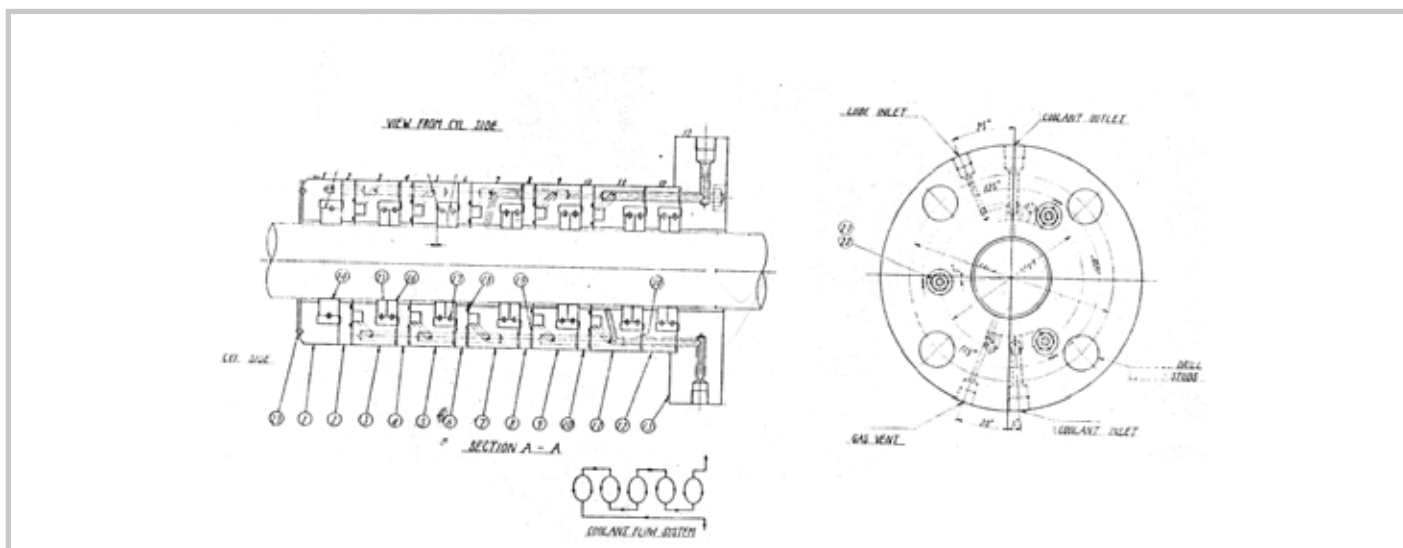
### | Results

Selco's new project eliminated leakage from the refrigeration system. Besides, the metallic case corrosion was substantially reduced. Because of this, reconditioning became viable and the client attained significant savings by postponing the purchase of new packings.

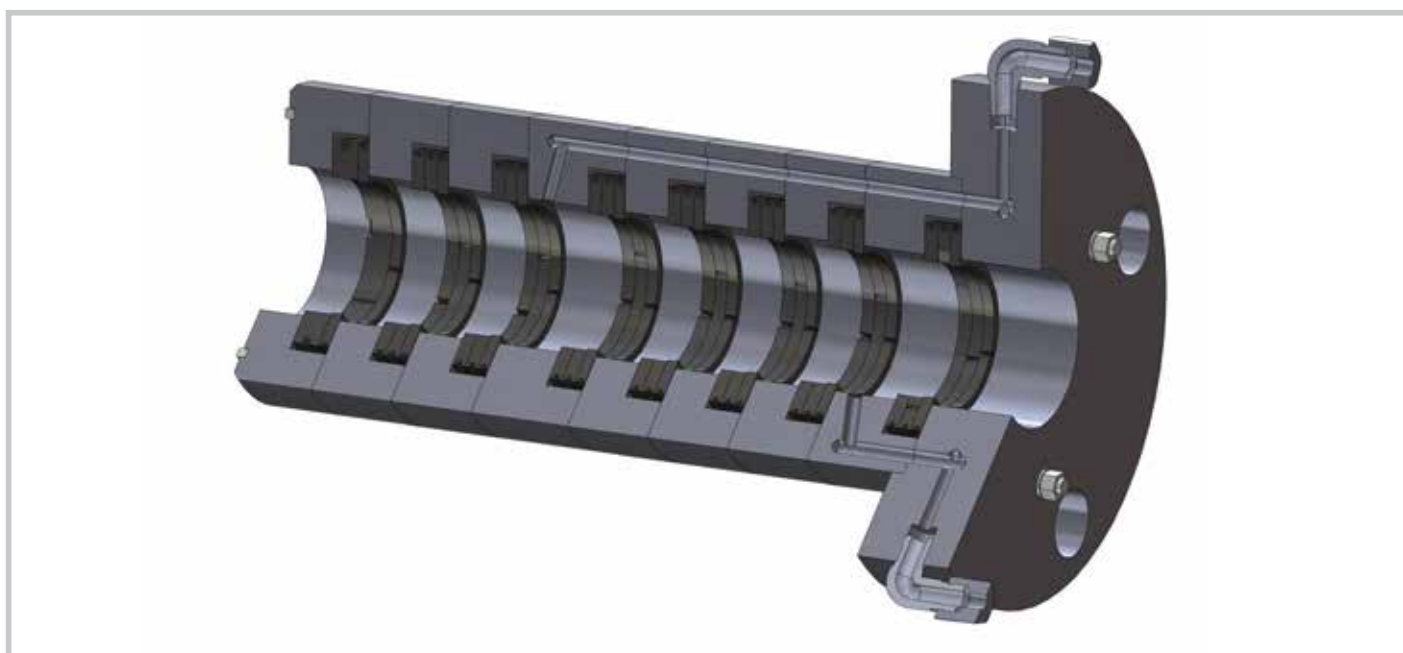
The packing lifespan went from 6 to 36 months. Since the compressor went through a scheduled maintenance every 3 years, this meant that the non programmed stops caused by packing failures were completely eliminated.

The combination of Selco's expertise and technology enabled the excellent performance of the new packing.

## Original Project



## Selco Project



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