

CASE STUDY

MRV was installed into CCR gas compressor of Korean refinery. High performance and durability of MRV satisfies customer's expectation.

BACKGROUND

The compressor was installed over 20 years ago. Current valve was traditional plate type valve, and the valve loss was high. Moreover, the current valve was facing clogging and stiction problem caused by heavy sludge, especially during start up process. So the customer was planning to modernize the valve.

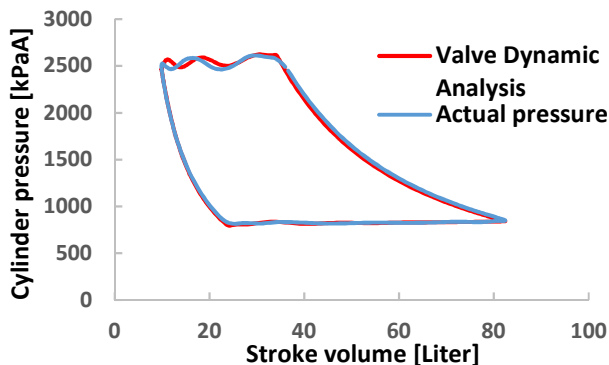


Sludge condition of current valve

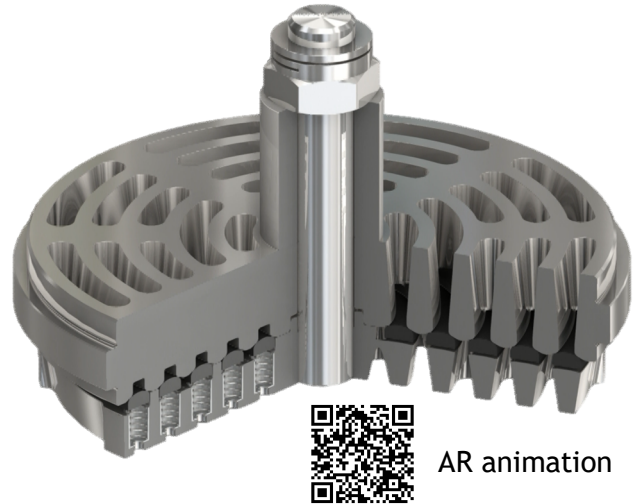
RESULT

MRV was installed into the 1 out of 3 compressors in April, 2020. The energy saving value for 1 compressor has shown approx. 840,000kW/year. The energy saving value was almost same as expected design value.

And valve clogging problem was solved by MRV. When the current valve was clogged during start up process, the condition of MRV was checked at the same time, but MRV was in good condition.



Comparison of Actual pressure with Valve Dynamic Analysis



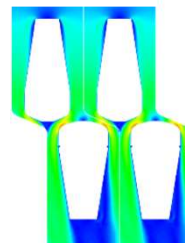
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SOLUTION

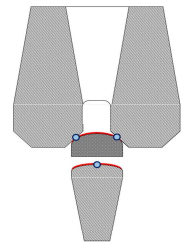
MITSUI propose MRV as an upgrade valve. Enhanced aerodynamic performance, such as the streamline shaped valve ring and the flow pass which designed to have highest efficiency, leads to dramatic energy saving.

Also, optimal design, based on Valve Dynamic Analysis, maximize entire valve efficiency.

At the same time, high gas velocity and smooth flow compared with current valve can blow off heavy sludge, which enables MRV to prevent clogging problem. In addition, Anti-stiction design by line contact between valve ring and valve seat / valve guard prevents valve ring and spring from having typical damage caused by stiction.



Smooth flow thru flow pass



○ Line contact
— Anti-stiction design

COMPRESSOR DATA

Service	: Net gas compressor
Type	: MITSUI Thomassen 6 cylinder
Stage	: 1st / 2nd / 3rd stage
Speed	: 300rpm
Motor kW	: 4000kW
Valve q'ty	: 1st 16pcs / 2nd 16pcs / 3rd 8pcs

CONTACT

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MRV brochure



MRV website