

MITSUI COMPRESSOR VALVE --- MRV series ---

MITSUI compressor valve has been developed to be more efficient and more durable, comparing with valves in the market, as new concept ring valve.

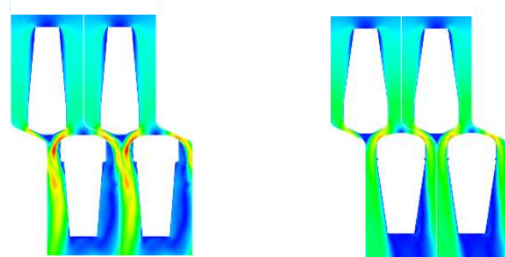
MITSUI compressor valve can be fitted to any reciprocating compressor in the world.

Minimum valve loss

80% reduction vs. typical plate valve

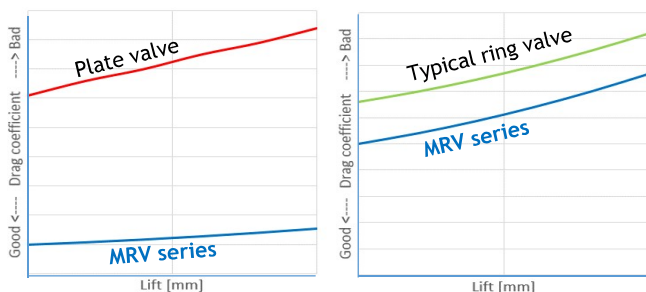
30% reduction vs. typical ring valve

Flow efficiency has been improved by methods of Computational Fluid Dynamics (CFD) and the wind tunnel test.



Typical ring valve MRV series
Comparison of gas velocity ratio

As a result, the optimized profile of flow geometry, featuring Multi-rounded shapes of ring, was created and leads the efficiency into the state of the art.



Comparison of valve efficiency

Optimized valve setting

Best balance between life time and efficiency is achieved by using of the characteristic method of unsteady flow called Valve Dynamic Analysis. And MITSUI can recommend comprehensive proposal for each case from the view of compressor builder.



Intelligent ring

300% longer life time than typical valve ring

- by using Special Carbon/PEEK enhanced for strength and durability
 - by Multi-rounded shapes overcoming high pressure and impact force
- And in the valve ring manufacturing process, inimitable knowhow of precision finish machining surely leads to supreme sealing performance.

Premium spring

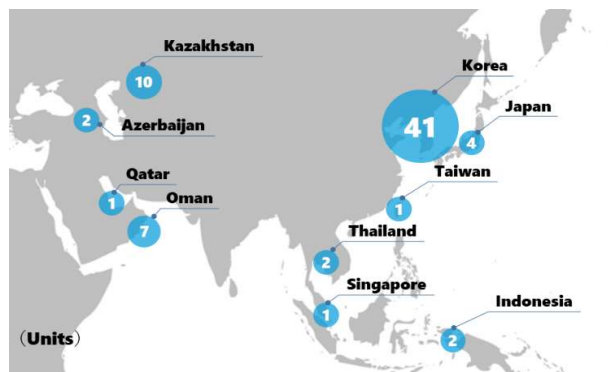
150% longer life time than typical valve spring.

- by material selection from stainless steel or special nickel alloy depending on applications
 - by enhanced metallographic structure leading to excellent settling resistance
- And integrated manufacturing from Ingot through to coil spring leads to highest quality.

Delivery record

MITSUI compressor valve has been running under demanding condition such as liquid compression and sticky material without any consumables replacement since July, 2017.

- ◆ User: Refinery, Chemical, Machine shop
- ◆ Service: Off gas, Net gas, H₂ rich gas, Recycle gas, and so on
- ◆ Both lubricated and non-lubricated types are available.



Advantages

Energy saving by

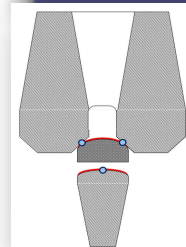
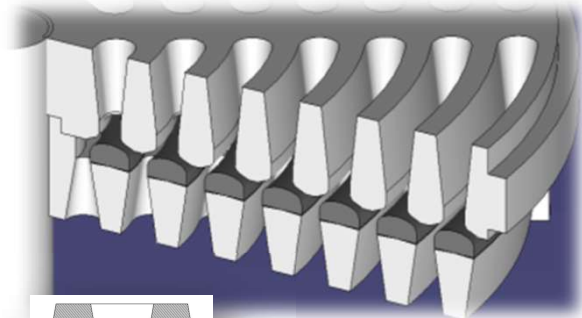
- Enhanced aerodynamic performance
Streamlined valve ring
Highest efficient flow pass
- Optimal design based on Valve Dynamic Analysis maximizes valve efficiency.

Maintenance cost saving by

- Long life consumables
Durable valve ring made of Special Carbon/PEEK
Robust valve spring made of enhanced metal
- Anti-stiction design prevents valve ring and spring from typical damage due to stiction.
- Reasonable price of consumables

More effective in

- Modification from plate valve or poppet valve
- Gas including liquid, polymer and solid particle
- Heavy gas



- Line contact
- Anti-stiction design

Application range

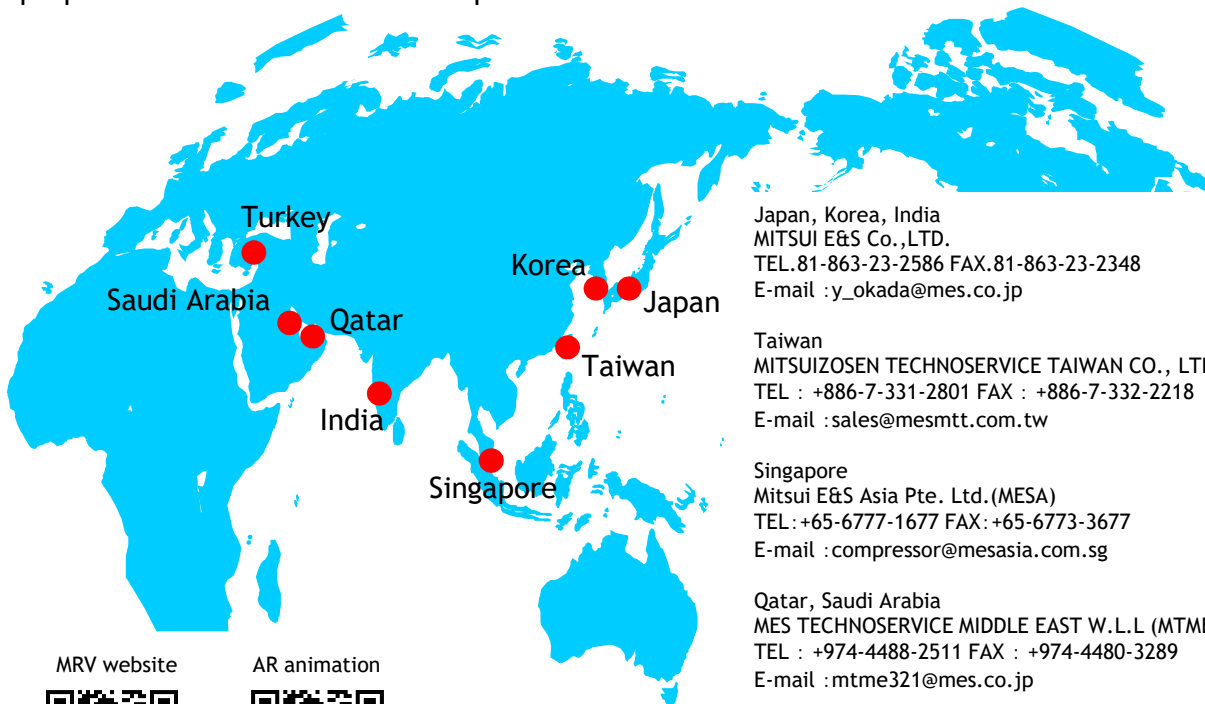
- Refinery, Chemical plant, Natural gas
- No limitation of gas composition
- No limitation of gas condition including oil, liquid, polymer and any debris
- No limitation of compressor brand
- Lube and Non lube operation
- Valve size = 60 - 320mm
- Valve lift = 0.75-3.00mm
- Max. R.P.M = 1800rpm
- Max. differential pressure = 200bar
- Max. temperature = 200deg.C

Valve service shop

8 service shops which provide highest quality maintenance in the world

MITSUI valve service shops maintain any compressor valve regardless of valve brand.

All necessary tools for Cleaning, Non destructive inspection, Machining and Air leak test are prepared. Please contact Mitsui representative as follows.



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