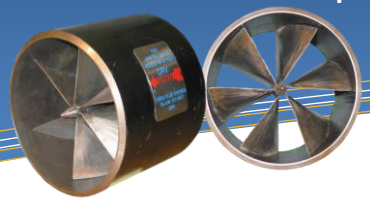
Cheng Rotation Vane® Is a fluid flow solution for Refineries

Installing a Cheng Rotation Vane will correct fluid flow problems and increase a plant's safety while reducing its down time. A Cheng Rotation Vane is the cheapest way to prevent erosion, insure plant safety, and increase profitability.

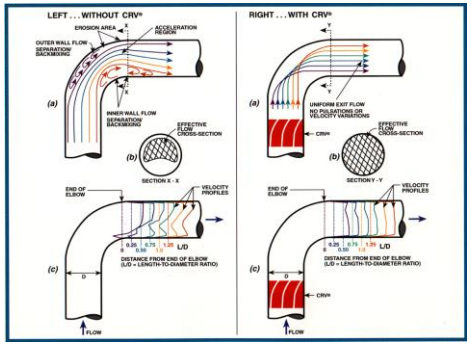


A CRV® installed close to: pumps, compressors, check valves, control valves, flow measurement equipment, elbow erosion/noise, water hammer, condensers, exhaust section, chemical processing, and heat exchangers, will have better performance results and increase the safety of all workers.

Fluid flowing through elbows and sudden expansions will experience:

- Reverse Flow
- Flashing
- Turbulence
- Pressure Loss
- Vibration
- Leaks
- Cavitation
- Erosion
- Flow Separation
- Noise
- Accelerated

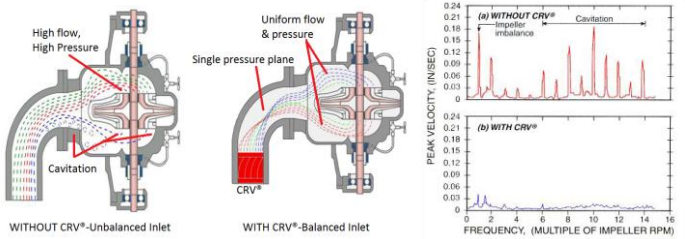
The CRV® imparts to the fluid (gas or liquid) a gyroscopic motion, which counteracts the elbow induced gyroscopic motion, & enables the fluid to negotiate the turn through the elbow in a flat uniform flow across the entire cross sectional area of the pipe.



CFS is dedicated to solving our customer's fluid flow problems & protecting workers by using our technology and experience, along with our patented product, the Cheng Rotation Vane (CRV®).

Refineries most often carry out planned shutdowns of refinery units to perform seasonal maintenance ahead of the summer driving season. A critical aspect in petrochemical industry is plant maintenance to correct fluid flow problems. Plant maintenance and efficiency depends on correcting cavitation, which decreases flow capability, leads to pipe damage, increased noise emission, valve/pipe component erosion and mechanical vibration. Adding a CRV® to correct fluid flow problems is proactive, corrective and preventive maintenance.

Problem-Pump Cavitation: Pumping systems experience cavitation, cavities or bubbles form in the liquid that is being pumped due to low pressure from the suction side of the pump.



Problem-Pump & Check Valve Vibration: Check valves, respond to flow and pressure disturbances. Such turbulence cause the pin to fail, leakage though the pin starts, and the valve seat will not seal. CRV® installation reduced the noise, extended seal, bearing, impeller life, increased delivered head and flow.

Problem-Elbow Erosion: Elbow erosion is eliminated by preventing turbulence, internal pressure gradients, and cavitation, through the use of an internally hardened CRV®.

CHENG ROTATION VANE®

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