

CENTRIFUGAL COMPRESSOR CLEANING SYSTEMS

Delivering efficient compressor technology since 1985

THE PROBLEM:

Centrifugal compressors in production service often experience a build up of gas stream contaminants – both organic and inorganic. The presence of foulants constrains and disturbs the gas flow, reducing compression and elevating operating temperatures. Higher temperatures further promote fouling through polymerization of plated contaminants. The result is lower compressor performance and a reduction in overall plant performance.

Because the contaminant are a byproduct of the process gas, filtration or extraction are not realistic options. Cleaning with abrasive compounds can erode aerodynamic surfaces and damage high performance coatings. Product schedules make it difficult to shut down solely for the purpose of hand cleaning. For these reasons many operators have elected to clean on-line with continuous injection of water or petroleum based solvents. Water provides some cooling but has little effect on the removal of contaminants. Petroleum based solvent wash oils will remove organic contaminants but have little success dissolving inorganic contaminants.

THE SOLUTION:

ECT offers the best solution to the problem of fouling with its unique combination of mechanical and chemical systems approach. Our proprietary system includes an array of spray nozzles, located on the compressor case in a manner which optimizes spray coverage of fouling prone surfaces with cleaners



and a fluid delivery skid which controls the injection process to very close volumetric and dispersion tolerances. The delivery system, used with the appropriate RELION cleaning product, can sustain compressor efficiency in even the harshest fouling environments for long running periods.

THE ECT APPROACH... As a first step, ECT analyzes the chemistry of the foulants to determine which RELION product(s) are likely to be most effective in removing the contaminants. Next, we look at the fouling patterns to determine the number and design of nozzles. Based upon known spray production parameters, we design the delivery system to meet the flow and pressure requirements. The fluid delivery skid is typically a pump/motor assembly capable of providing constant flow and pressure and controlled by a PLC in an enclosure that meets the site utility standards and hazard classifications.

ECT manufactures...

RELION Cleaning Products.

RELION 5010

Blend of surfactants and solubilizers for continuous on-line injection with wash oils. Removes polymerized hydrocarbons. Pre-mixed, ready-to-use.

RELION 5030

Blend of surfactants and non-hazardous solubilizers for continuous on-line injection with water. Pre-mixed, ready-to-use.

RELION 2010

Concentrated emulsifier surfactant with solubilizers. For periodic use in removing inorganic foulants. May be added to all wash oils.

RELION 1010

Light aromatic solubilizer for periodic injection. Removes organic foulants.

RELION 1020

Concentrated aromatic solubilizer for continuous injection with wash oils. Removes and slows the buildup of polymerized hydrocarbons.

 **ECT**
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