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STEAMPRO-CONDENSATE REMOVAL DEVICE (SP-CRD) FOR: PETROL & OLEO CHEMICAL REFINERY INDUSTRIES

Introduction:

SteamPro-CRD is a condensate drainage device. Its design is based on the devices of the U.S. Navy technology of 1960's. The major function of the SteamPro-CRD is the removal of condensate. Condensate is removed immediately, continuously and completely. The SteamPro-CRD is the latest design of fixed orifice devices. The SteamPro-CRD is constructed 100% from stainless steel. All the internal components of the SteamPro-CRD are repairable and replaceable online and real-time within 5 minutes. The SteamPro-CRD has a test port which maybe opened online and testing can be done real-time for as long as we wish to. The SteamPro-CRD has no moving parts and it has a useful life expectancy in excess of 20 years for pressure 20 bar and below. It will functions exactly the same throughout its entire life span. The SteamPro-CRD requires little or no maintenance. The inventory requirements for parts are very small or none.

SteamPro-CRD Provides Optimal and Consistent Process Temperature:

Petrol & Oleo Chemical manufacturing plants are large steam users and in physical sizes. These facilities use "Steam Traps" for condensate drainage. However, "Steam Traps" are designed to trap steam and the removal of condensate is only secondary when draining of condensate should be the objective.

The manufacturing and processing sections are usually concentrated in a portion of the total refinery plant. The processes and equipment are very complex and the internals are totally invisible. The "Steam Trap" tends to be large and the steam consumption maybe huge. These processes may consume bulk of the steam generated.

SteamPro-CRD is a custom-fitted condensate drainage device. We will need the company's engineers to help us and to provide us with the energy load profiles of the equipment they wish to convert to SteamPro-CRD. We have worked successfully with complex equipment like reboilers. There was definitely improvement in the process and some measurable steam savings. The condensate is removed immediately, continuously and completely. Therefore, the process temperature is optimal and consistent, increasing the process efficiencies and production quantities, and also improved product quality.

The "Steam Traps" cycle on and off. When "Steam Traps" are in the off position, they backup condensate. The process temperatures is somewhat reduced and fluctuate. The backup condensate subcools and the condensate become more acidic. The acids will cause corrosion problems in the production equipment and the entire condensate drainage system. The SteamPro-CRD will eliminate all the aforementioned problems forever.



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Most of the “Steam Traps” in a Petrol & Oleo Chemical manufacturing plant are **steam main drips, steam heat tracings, storage tanks and other simple applications**. The SteamPro team can work almost independently in these areas. Our team can convert the “Steam Traps” to SteamPro-CRD to perfection in these areas.

Steam main generate condensate through heat losses. The condensate rates are usually small. The plant may have several steam pressure levels. Steam mains are everywhere inside the plant. The “Steam Traps” are almost always grossly over-sized, a problem of “Steam Trap” availability of matching small orifices. To save money, a plant may have opted to use thermodynamic “Steam Traps.” Thermodynamic “Steam Traps” are inexpensive and not very reliable, having a useful life expectancy of one year or less. Live steam losses are a common problem for all conventional “Steam Traps.” “Steam Traps” work by being inactive most of the time. Steam main drips are spaced every 100 meters or so along the steam mains and before the rise in elevation of the mains. When the condensate arrives at the drain hole to the “Steam Trap”, chances are the “Steam Trap” happens to be closed. The condensate skipped over the small drain-hole and travels to the next drain. Water-hammering maybe another problem, a SteamPro-CRD conversion will save the live steam losses and eliminate water-hammering. It will save energy. A 10% to 15% saving is very realistic and easily achievable.

Steam main drips are also used to protect the steam control valves by presenting condensate from reaching and going through them. “Steam Traps” being mostly inactive than they are active will fail to perform properly. The SteamPro will work 100% of the time, constantly pulling and draining the condensate to protect the steam control valve. A job well done!

The most numerous application of “Steam Trap” maybe steam heat tracing. We have a new SteamPro-CRD specifically designed for steam traces. The SteamPro because of its smaller orifice diameter may have more blockage problem than that of conventional “Steam Traps.” With stainless steel tubes, the problem is reduced, however, blockage still exists. Tracing remains as a blockage problem for conventional steam trap and for the SteamPros. The new SteamPro-CRD has a unique strainer designed to absorb the copper oxides and other contaminants, helping to reduce the chance of blockage. The orifice component is externally accessible, making repair a quick and easy operation. The new SteamPro-CRD is compact and relatively light weight. The inventory program for repair components is small and inexpensive. The device requires not specific maintenance.

The storage tanks and simple applications are excellent candidates. For heated storage tanks, constant temperature is not very important. Therefore, steam saving is the only incentive. However, the energy saving is difficult to measure and identify. For trials, we can convert those blown through “Steam Traps” to the SteamPros. The saving is obvious to the naked eyes. This is



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also true for steam main drips. Often the condensate is discharged to atmosphere, the working of a SteamPro-CRD maybe compared visibly against that of a “Steam Trap.”

The SteamPro-CRD is a superior product with real-time and online user verifiable function and total repair ability. The SteamPro has a useful life expectancy of 20-year plus. The SteamPro-CRD performance is guaranteed.

Written By:
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(On November 2005 at Kuala Lumpur, Malaysia)

Note:

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