



Pall Corporation

Case Study

Double Open Ended Vessel Concept Reduces Installation Costs

Application

Refineries, gas plants and chemical producers are constantly seeking ways to improve plant production, reliability and safety, ideally without the need to move to larger, more expensive fixed assets. One of the strategies proven to be extremely successful is the installation of, or upgrading to high efficiency filtration products to mitigate the costs and constraints associated with downstream fouling. There are many examples where reliable filtration solutions have resulted in hundreds of thousands to even millions of dollars in improved bottom line performance through better utilization of existing assets.

Problem

While these projects typically have excellent payback, initial cost control remains a need. In addition to the costs for the filtration equipment, the fully burdened installation costs must be included in the evaluation. In the petrochemical industry, the need for conformance to sophisticated piping, valving, mechanical, instrumentation, electrical and other specifications can drive the burdened installation costs of a new filtration solution to 4-5 times the cost of the filtration equipment itself, sometimes more. Therefore the challenge in implementing a filtration solution is to control total installation costs.

On larger installations, especially those under high pressure, a common approach from filter suppliers is to quote a greater number of smaller diameter filter housings with a lower overall spend vs. quoting more expensive larger diameter housings at a higher price. However under this scenario, installation costs can skyrocket as the need for additional



Figure 1: Ultipleat® High Flow Series Double Open Ended Housing

piping, valving and instrumentation makes for a greater total installed cost.

Use of larger diameter vessels will control the installation costs, but the rise in filter housing costs may become an issue, again making for a high total installed cost.

Solution

To control both the housing purchase and burdened installation costs, Pall has worked with a number of sites to install double open ended vessels. This concept is demonstrated with our Ultipleat® High Flow Series housings fabricated in the double open ended configuration. As shown in Figure 1 above, the layout allows for filter elements to be loaded into both ends of a horizontal housing. Figure 2 (back) shows a schematic detailing how a smaller diameter housing provides the same number of elements by loading from both ends. Figure 3 shows the ease of access of the Ultipleat High Flow Series housings to the housing internals, providing quick turnaround element changeout.

Benefits

Use of the double open ended housing design has significantly reduced the total installed system cost when compared to the alternatives of using additional or larger diameter vessels. The double open ended design provides an elegant solution that meets customers' needs for high filter area to provide long element service life and low, long-term operating costs.

Conclusion

Design and installation of large, high flow filtration systems is a complex process with many variables that come into play. Pall Corporation has many years of experience in fabrication and installation of such systems. Our experts will work with you to develop designs such as the double open ended housing to meet your specific project requirements and achieve lowest total installed cost. Contact us to discuss your next filtration project.

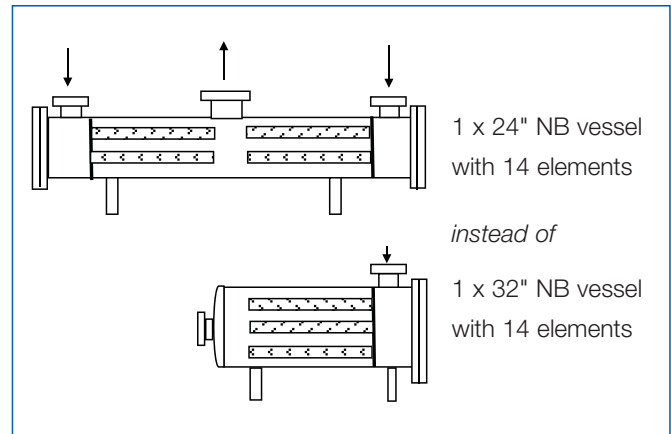


Figure 2: Double Open Ended vs. Conventional Housing Design



Figure 3: Double Open Ended Housing Showing Internals



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