

Field Report: Filter System Findings

Recently, two Hansen Filter Systems were installed on a new refrigeration system in a beef processing facility located in suburban Chicago. One Filter System was installed in a low-temperature pump recirculator. The other was installed in a high-temperature pump recirculator. Both Filter Systems are appropriately located on pump discharge lines.

On initial start-up, the refrigeration system was operated at reduced capacity. During this time, the differential pressure gauge consistently indicated less than 1 psi pressure differential. However, after about a week of operating at reduced capacity, the pressure drop across one of the Filter Systems increased until the needle on the pressure differential gauge was above the recommended maximum of 7 psid. This indicated that the filter element had captured a large amount of dirt and contaminants.

The built-in pump-out feature allowed easy access to the filter element for inspection and cleaning. When the filter element was removed, a large amount of very fine iron oxide and some organic material had accumulated on the metal screen surface of the filter element.

Once the filter element was cleaned and reinstalled, and the Filter System returned to service, the pressure differential returned to normal. The refrigeration system has continued to operate normally since that time, about 3 months, with the refrigeration system at full capacity. The pressure drop continues to be monitored.



The 120 mesh filter element of the Hansen Filter System protects refrigeration systems by capturing very fine particles of dirt and other solid contaminants.

This example demonstrates the importance of having a Filter System or strainer in place on system start-up. Had the Filter Systems not been in place in this beef processing facility, the fine contaminants trapped in the filter element would continue to be recirculated throughout the system. This could have resulted in premature wear or failure of pump bearings, shaft seals, and control valves. Filter Systems are also desirable for installation on existing systems to provide the same superior protection of recirculating or main liquid lines.