

► External Leakage Due to Plate Deterioration

- Application : Brine Heater
- Operating Period : Approximately 18 years
- Operating Fluids : Steam / Salt water
- Operating Temperature :
Steam side: 127 °C / Brine side: 70 °C
- Plate Material : Pd-Ti

● Phenomenon

External leakage of brine was observed from the area between the S-frame and the D-plate. In addition, corrosion and wall thinning of the inner surface of the S-frame were confirmed as a result of the brine leakage.

● Cause

Although the gaskets of this unit have been periodically replaced, the plates have been in service for approximately 18 years since initial delivery.

When the same plates are used for an extended period of time, slight plate deformation—difficult to detect by visual inspection—can gradually accumulate due to repeated tightening and disassembly operations as well as gasket aging. As a result, even after replacing the gaskets with new ones, sealing performance may deteriorate due to plate deformation, leading to external leakage.

● Countermeasures

It is recommended to periodically replace the plates in addition to gasket replacement. Regarding the appropriate timing for plate replacement, we can assess the condition of the plates and determine their suitability for continued use upon request for an inspection of the plate condition.

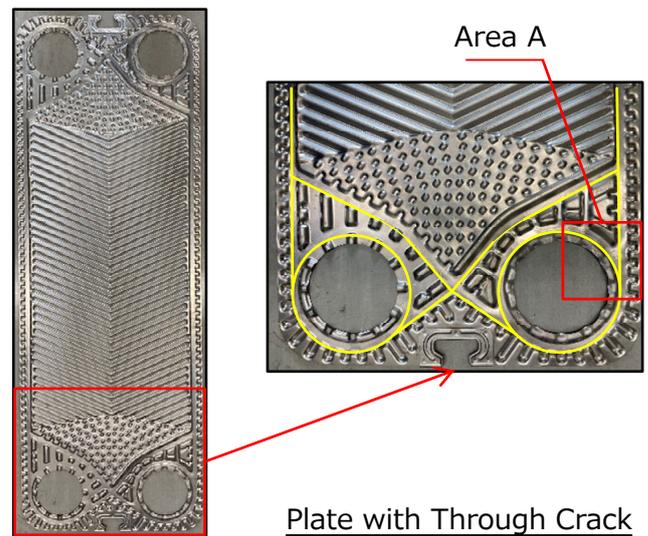
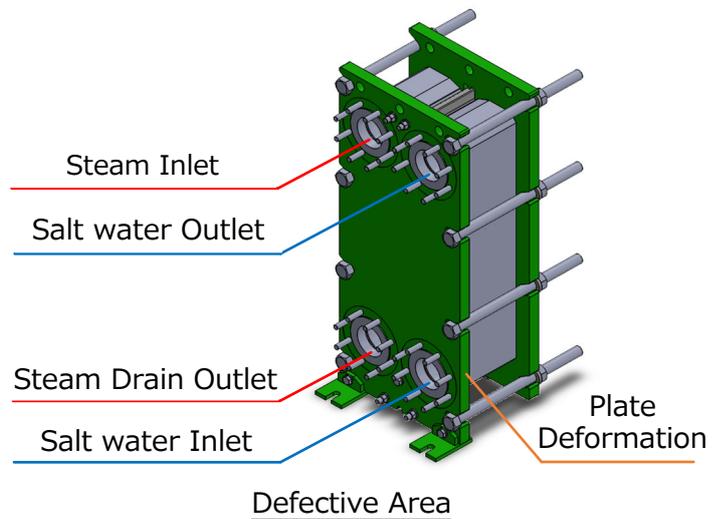
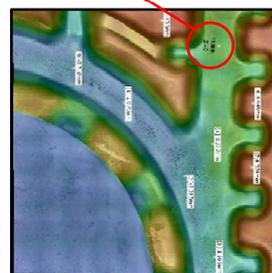
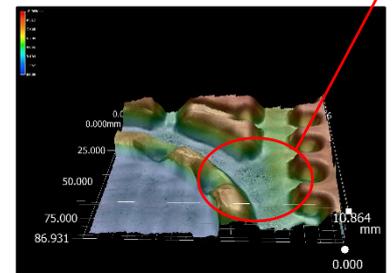


Plate Deformation Area
(approx. 3 mm deviation from
the reference plane)

Reference Plane



Luminance
Distribution Image
of Area A



3D Image of Area A