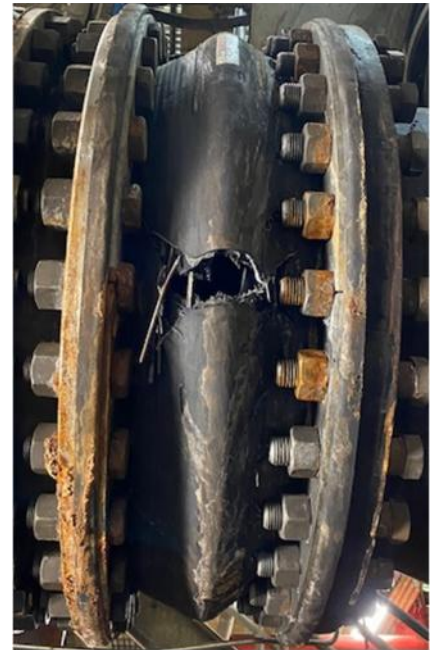


## Uncontrolled Movements Causes Failure

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**Application:** Condensate water piping for the boiler system used in the pulp and paper industry for heat and energy generation

**Problem:** After 6-1/2 years in operation, an Expansion Joint failed due to the bolts repeatedly rubbing the expansion joint's body. The anchor points failed and allowed the pipe flanges to move laterally from side to side. This uncontrolled movement allowed the bolts to damage the Expansion Joint body creating a weak point in the Expansion Joint leading to an unplanned outage.



**Solution:** After the plant fixed the loose anchoring points, our distributor measured the existing Expansion Joint. The replacement is hand-built with a 1/2" shorter Face to Face than the original and a 5/8" lateral (3-6 position) built-in offset. We also advised the plant to turn the bolts around to keep the threads away from the Expansion Joint's arch and add control rods to the system, which will limit future movement and help protect the Expansion Joint from movements beyond its capabilities.

**\*\*Mechanical restraints should be used to prevent over compression and over extension on all pressurized expansion joints. Damage incurred without the use of mechanical restraints could void the warranty\*\***

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