

CASE STUDY - Gas and Diesel Generation sets



Gas and diesel generation sets

Client: OEM client

Customer: Design and development

Products: New bellows design for gas & diesel generation sets

Our Customer requested an economical design solution to facilitate new engine operational frequency ranges and increased lateral bellows movement demands.

Our team designed and developed new tooling arrangements to manufacture the complete assembly from a single hydraulically pre-rolled seam welded tube. The pre-roll pipe spool design was the key design element which allowed the performance criteria to be met. This saved time in manufacture and removed all seam welds and fatigue points on the double unit.

Put on test, this new design accommodated the increased frequency range, offered improved bellows fatigue life, accommodated additional lateral movements and provided an overall cost benefit to the OEM client.

This fresh approach to bellows design is a tribute to the partnership between manufacturer and client.

Lateral Design increases from + / - 10mm increased to + / - 16mm.

Material EN 1.4541 (321 Stainless Steel)

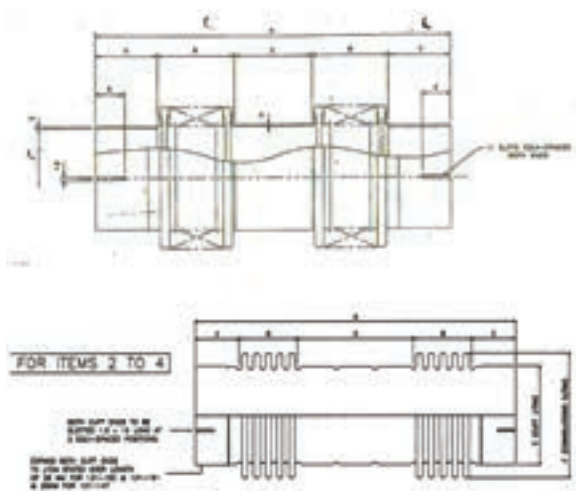
Exhaust temperature 400 Deg C

Axial Vibration Frequency 6736.194 Hz

Lateral Vibration Frequency 12081.8 Hz

Rocking Vibration Frequency 20909.09 Hz

Double Bellows Existing Design incorporating four seam welds, two bellows convolution sets, an inter-connecting centre pipe spool piece and two slotted end cuffs.



Pearwalk engineers working on new bellows design