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POLY-V BELT CLAMP

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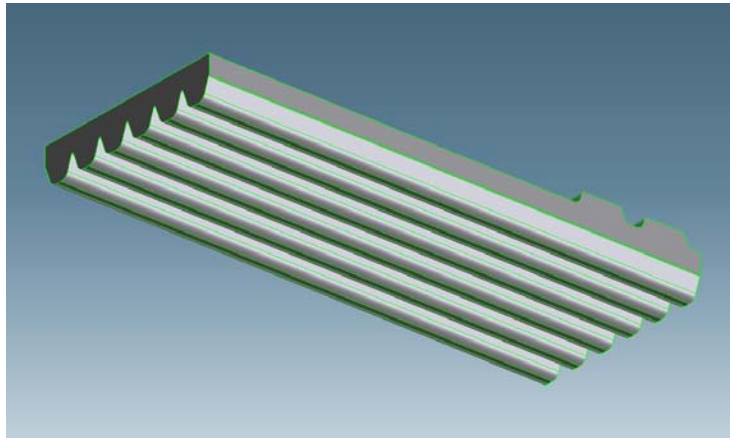
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POLY-V BELT CLAMP

ABSTRACT

Belt clamping is a cheap way to obtain different belt length from a same mold, which can reduce the cost when the mold is reused for different products. The idea is to cut the molded belts into modules and, then joining modules together, thereby being able to modify the belt length by cutting the modules or adding a new ones. The idea is already done in common belts with teeth, but the challenge has been clamping a belt which has no teeth and has a continuous profile, the poly-V belt.



Using a specific geometry, it has been possible to clamp modules by a simple sheet metal tool. The challenge of this was being able to industrialize it having a minimum CPK required of the belt length with a tension.

PROBLEMS SOLVED

Being able to clamp poly-V belt allows using the same mold for different projects to achieve different belt lengths and being able to industrialize them.

PRIOR SOLUTIONS

1. *New belt mold for each program*

This was very common, for each new product a new belt mold was required. This avoids the use metallic clamps but increases the product development.

Disadvantages

- High cost increase
- Not being compatible with a platform such as MALT
- Needs to invest a lot of money and do not allow easy prototyping (fail fast)

2. *Belt clamp with a teeth profile*

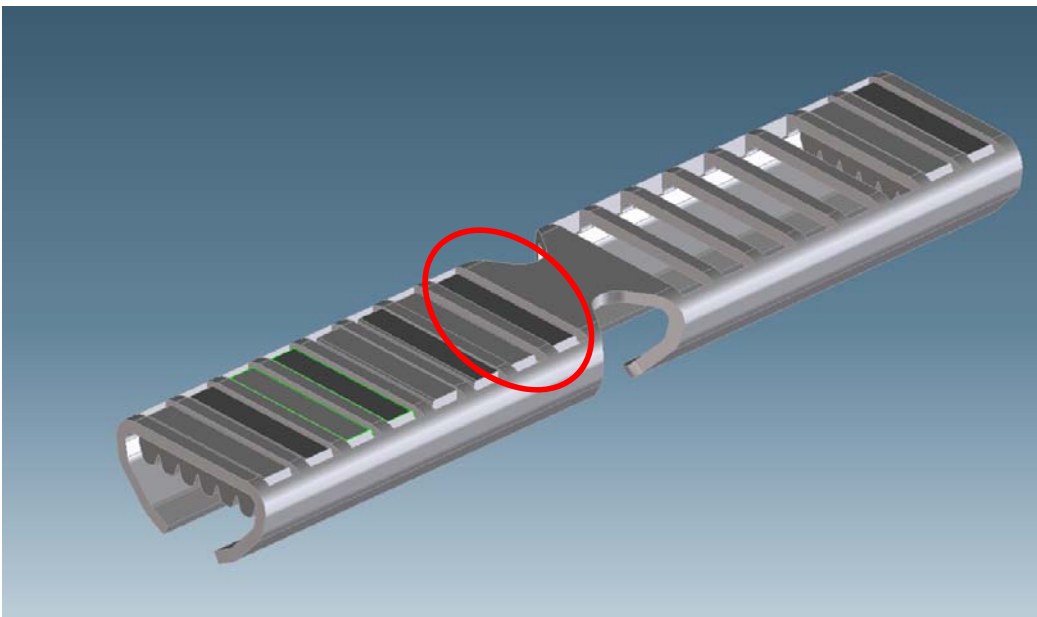
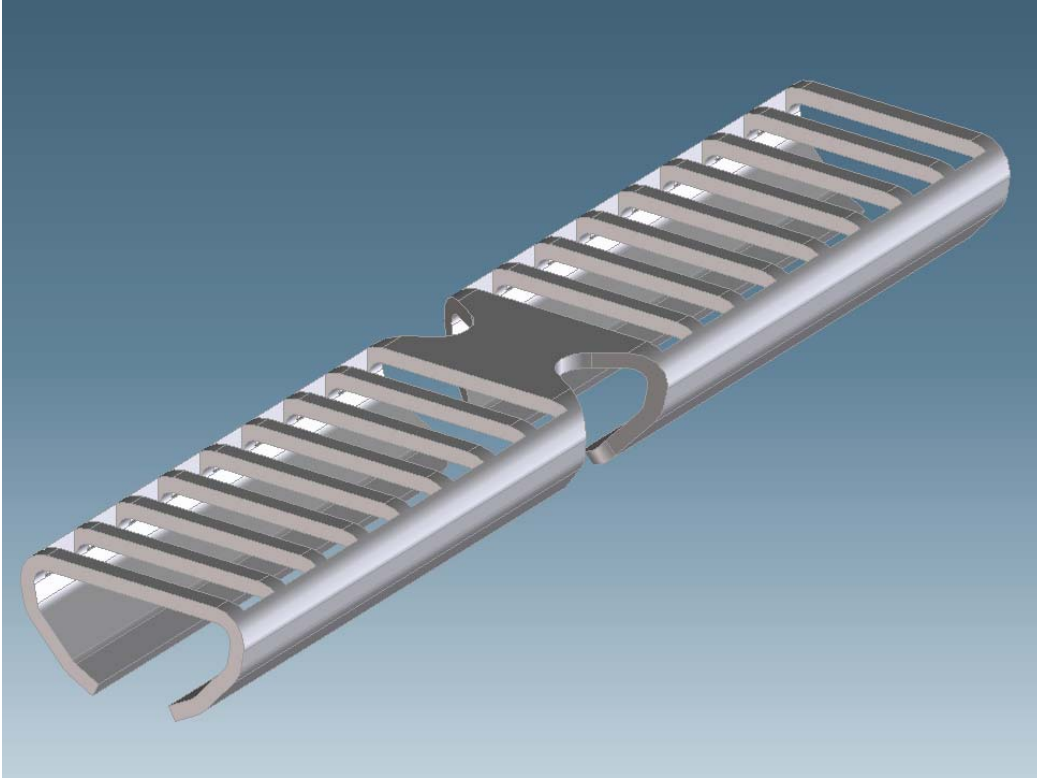
The implementation of belt clamping is not new; however, it was only done in belt profiles which has teeth. This reduces the capacity to use new belt technologies in the printers when prototyping.

Disadvantages

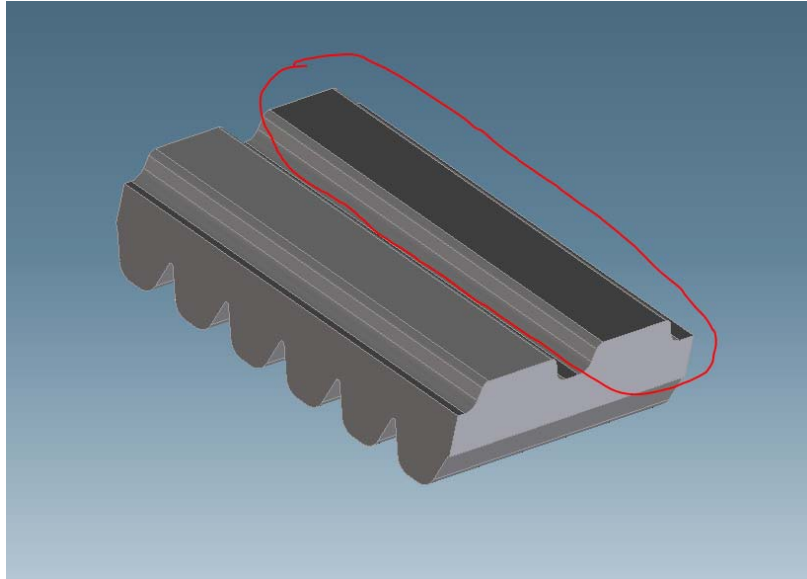
- No poly-V belt technology available

OUR SOLUTION

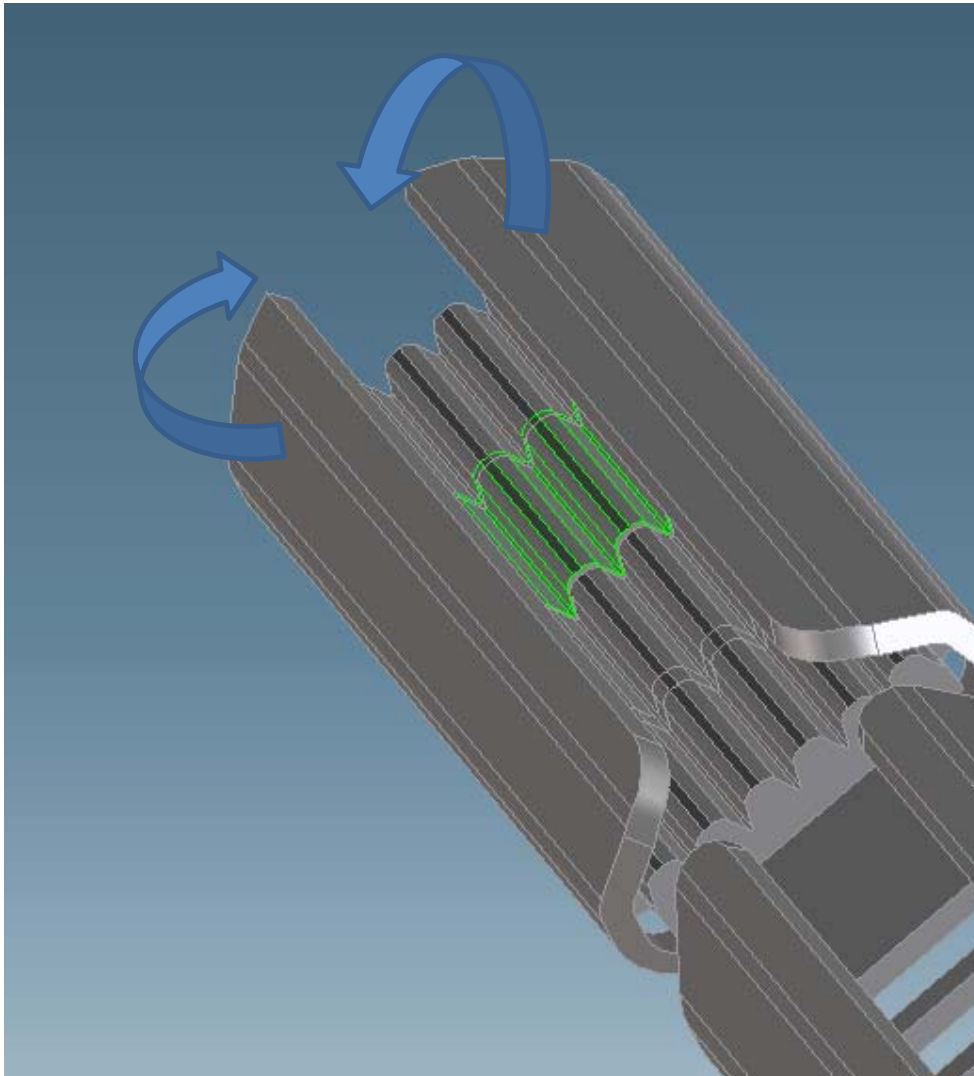
Our solution allows to clamp poly-V belts with a sheet metal clamp that has a specific geometry.



Using the ribs that has the poly-V belt in the upper part to add more material and inertia to the belt we can position the clamp along the belt.



Upper part of the belt



Once the belt is positioned it is closed creating a permanent deformation in the lateral flaps. It has to be pressed with a specific force in order to ensure the correct deformation and no belt slippage.

IN COMPARISON WITH PREVIOUS SYSTEMS

1. Advantages

- The clamp allows to clamp poly-V belt technology
- Reduces the cost investment for different products using the same belt mold
- Allows easy prototyping with different belt length requirement

*Disclosed by Niels Sánchez, Alexandre Rodriguez and Bartomeu Gaya,
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