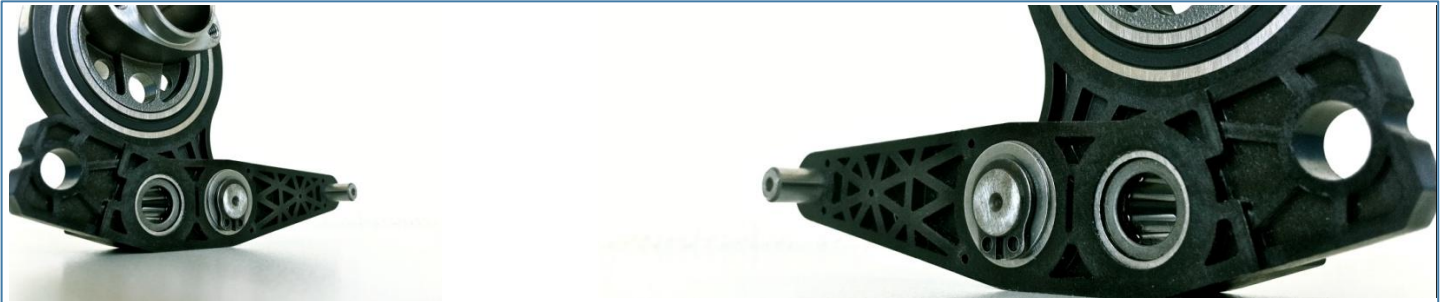


Unit for embroidery machine head



Background

- Because of the bulkiness and 100% metallic design of the old-generation unit, its rotation speed was limited. The method of linking by driving out created a strong risk of the bearing and the insert becoming disconnected.
- The rigidity of the metallic components was able to cause the flexible elements to break.
- Operating noise was higher.

JESA Innovation

- On the strength of its 40 years of experience in combining metal and plastic, JESA was able to replace the metallic parts with a carefully chosen engineering polymer.
- Numerous FEM analyses carried out by the Research and Development Department made it possible to determine an ideal geometry of polymer components and adapt it to the operating conditions.
- In-depth research, as well as injection tests carried out by the Methods and Industrialisation Department, made it possible for a bearing to be over moulded by a complex asymmetrical shape, whilst bringing under control the distortions transmitted to the ball bearings.

JESA Solution

- A plastic over moulding for the bearing and the insert, to reduce the bulk of the unit by 30%.
- Elimination of the driving-out method in favour of using the over moulding method.
- Optimization of the rotating elements with a view to reducing noise and friction.

Customer Benefits

- Increased productivity thanks to an increase in speed of rotation of over 20%.
- Reduced transport costs due to lighter weight of components.
- Considerable economic benefits thanks to hybrid unit replacing a completely metallic unit.
- A more reliable unit thanks to the insertion of metallic elements during the injection procedure. The bearings or inserts can no longer become disconnected from the plastic body.
- An economical component enabling performance and quality to be increased.
- Reduced noise and friction.