

# ABA Worm Gear

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## Background

The Haldex ABA (Automatic Brake Adjuster) has been out on the market for roughly 40 years. Current yearly production is around 4.5 million units. The mechanism incorporates a Worm Gear which provides a vital function. The design of this Worm Gear has remained largely unchanged since the start of production. The application of the ABA is drum brake installations on trucks, busses and trailers.



Looking at the overall cost of the ABA's components, the Worm Shaft and the Worm Wheel are the second and third highest in cost contribution. Design requirements lead to a demand for the use of high grade materials in these components. The current manufacturing processes for these high-grade materials is costly, not only for machining and forming but also for secondary operations and outsourced hardening steps. This "old" product faces increased market pressure from a growing number of competitors to reduce costs. At the same time, the quality demands are increasing due to a shift to heavier installations and developing markets.

Are there newer developments about worm gears that could help Haldex to optimize the design?  
Are there other materials available today that could be more cost effective to use?

- ✓ Is the 40-year-old Worm Gear design optimal for the function?
- ✓ Are there newer developments and designs available?
- ✓ Is there a possibility to reduce the need of higher grade material?

## Objectives

Haldex is looking for one or two students to investigate and propose a possible new design of the ABA Worm Gear. A new design that is more cost effective and more optimized for the function. The aim of the project is to find several solutions, order hardware and perform validation/verification tests.

## Deliverables

- Master Thesis report and Executive Summary in English, verbal presentation at Haldex

## Contact person

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