

Success Story

Haldex improved heavy duty machining of calipers for trucks and trailers with LiCON twin-spindle machining centers

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Haldex, a leading brake system supplier for trucks and truck trailers, has improved productivity significantly. Before finding a better solution with LiCON, the standard machining concept consisted of robust single-spindle machines with four axes. The tomb stone type fixtures required long tools, which lead to chattering while machining the GJS 600 material. With LiCON twin-spindle machining center in 5-axis execution, the challenges are perfectly managed.

Project requirements and conclusions in brief

- Significant capacity increase in existing hall
Twin-spindle machines with much higher productivity per floor space
- Simultaneous production with twin-spindle machining
- Reduced complexity with automated direct loading via robot
- Specific project requirements met with flexibility
- Improved performance with shorter tools and five-axis-machine

Significant capacity increase in existing hall

Philip Andersson the Managing Director explains the strategy: „With ten twin-spindle LiCON machines, we increase the caliper production by 40% and we even do not have to add any hall space. We have a standard design of automated robot loaded cells consisting each of five machining centers, robot loading, bin picking of raw parts and an integrated CMM machine. We are glad to have the robust LiCON machines as core part of our strategic capacity increase.”

Simultaneous production with twin spindle machining

Due to its rigid design the LiFLEX II 766 performs as twin-spindle, with 500 Nm per spindle and a feed force of 10 000 N. „With such a powerful machine, we are now machining two calipers of GLS 600 material in the time of one and save much hall space too. The LiFLEX

machines are made for heavy machining,” says Björn Kihlberg, the Production Engineer at Haldex, who has been a driving part of the entire transformation.

Reduce complexity

Per Holmqvist, the Global Manufacturing Engineering Director: „On top of that, we now have a direct loading, which reduces the number of fixture nests to be checked to a minimum. The loading by robot is so fast, that direct loading is the best solution for this application, as the number of fixture nests is limited to the ones in production.”

Specific project requirements met with flexibility

LiCON is perfectly sized to build great machines and still listen to the customer. Thorsten Scheid, Global Project Manager Operations at Haldex is impressed: „All our individual requirements have been considered and were realized perfectly.”

Improved performance

The design of the caliper requires milling of a feature, which is inaccessible for a standard tool, as it is hidden behind the workpiece itself. To machine the caliper on a four-axis machine, a z-shaped double angle head had to be used, very complex to maintain. Haldex was looking for a more economical solution, which LiCON provided with the five-axis solution. A much more robust 90° angle head is now in use. The high forces during the milling process are supported by the three robust pins built on to the 500 Nm spindles, supporting the angle head. This way, chatter free production is achieved, at high feed rates even with two work pieces at the same time. Fadil Fazlic, the Haldex Cutting Tool Manager praises: „We managed to avoid the z-shaped angle head, as we can position the caliper in the five-axis machine in the best operating position.”

About Haldex

Haldex was founded back in 1888 in Sweden. It now employs over 2,000 people and is active in Europe, Asia and the US. Haldex is a leading manufacturer of reliable and innovative braking systems and air suspension solutions that improve the safety, dynamics, and durability of heavy vehicles. Haldex's customers are mainly large manufacturers of trucks, buses and trailers in North America, Europe, and Asia. In the aftermarket, Haldex provides spare parts and services to dealers, workshops, and large logistics companies. Development today is focused on safety and the future of electrified, autonomous, and connected heavy vehicles.

Haldex are since beginning of 2023 part of SAF Holland Group.

More information: www.haldex.com

About LiCON

LiCON mt GmbH & Co. KG, a global system supplier of modular machining centers stands for high-precision machining in series production. Core products are horizontal machining centers, with single-spindle, twin-spindle and even four-spindles. Unique is the portfolio of loading options. LiCON offers all three options, direct loading, double trunnion and pallet changer. Most of its customers from the automotive and other industries, appreciate the technology expertise and select a turnkey solution including the machining process. LiCON is dedicated to keep the quality of the machine and the machining process under control. That is why LiCON develops, designs and builds fixtures, motor spindles and most of its machine components inhouse.

Additionally, system integration with customized adaptable automation concepts.

With 200 employees in Europe, US, and China, LiCON is perfectly sized to lead in technology and be a flexible partner to its customers worldwide.

More information: www.licon.com

Images



2023-06-09-Haldex-LiFLEX-II-766-i-DL-B2-Maschine.jpg

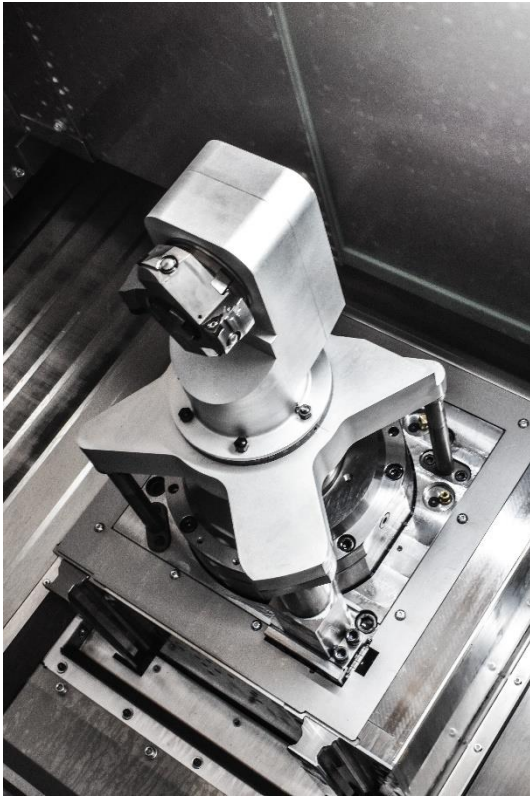
Twin spindle machining center LiFLEX II 766 i DL B2



2023-06-09-Haldex-LiFLEX-II-766-i-DL-B2-Maschine+Bediener-1.jpg
Twin spindle machining center LiFLEX II 766 i DL B2 with operator



2023-06-09-Haldex-LiFLEX-II-766-i-DL-B2-Innenraum.jpg
LiFLEX II 766 i DL B2 machining area with clamping fixtures for calipers



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Robust angle head for milling operations

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