FLEXIBLE REDESIGN AND OPTIMIZED LHD UNDERGROUND MINING BUCKET

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Project Goal: Flexible Redesign and Optimized LHD Bucket Wear Blocks, Back Attachment, and Front Lip.

Requirements: Increase LHD bucket flexibility, reliability, serviceability, extreme wear, repair efficiency, & sustainable productivity for Atlas Copco LHD underground loaders:

- Optimize the location & the number of wear blocks on LHD bucket.
- Flexible redesign LHD bucket back attachment.
- Flexible redesign LHD bucket lip.

Engineering Basis:

The FEA Von-Misses Stress Analysis (Top) and Displacement Analysis (Bottom) on Both GII and GIII LHD Bucket.

Testing / Implementation:

After the LHD bucket was 3D parametric modeled, flexibly redesigned, and optimized, the structure was validated by Finite Element Analysis software. However, the full LHD bucket tests will be done at underground mine site with Atlas Copco loaders.