

## The New AC Electric Powered Baumann ELX 50.

A new chapter in electric sideloader design. Nominated for the FLTA 2017 Award for Innovation.



# ELX50: Another Great Leap Sideways

**The Baumann ELX50 was designed and built from the ground up, and is the most compact model ever produced, measuring less than four metres in length & 750mm in deck height.**

The reduced length & improved turning circle have been achieved without sacrificing the mast or well width, clearance & low bed height.

A host of innovations; the 120v power supply & 2.5 tonnes weight reduction have increased battery performance by up to 30%.

Following two years of painstaking research, the new model includes:

- an intelligent battery system
- redesigned chassis
- new wiring schematic
- bespoke steering axle
- flow matching hydraulic system



**The compact AC powered electric ELX50 is predicted to change the European market for sideloaders.**

The goal was to produce a highly efficient and durable electric machine capable of efficiently working in small spaces.

Creating a smaller, lightweight chassis, involved designing a series of angled sections to provide stiffness and stability, without excess weight – 2.5 tonnes lower than a conventional engine machine.



A new steering axle was developed with extra weight added, providing a lower centre of gravity. Large diameter hydraulic pipes were used to reduce the energy needed to drive key

functions such as lift and outreach.

This required a series of new solutions to overcome the routing of large pipes to the downstream pressure compensator and on to the mast.

It is also crucial to the flow matching hydraulic system, as the pump operates as a hydromechanical (HM) closed-loop pressure control that ensures supply pressure exceeds the highest load pressure by a constant differential pressure.

Because supply pressure constantly adjusts to the highest load pressure, load sensing and

hydromechanical flow sharing (HM-LUDV) controls save energy compared to open-centre controls that divert some flow to the reservoir.



The huge saving in weight allows a larger, 'intelligent' battery system, created specifically for Baumann in a bespoke arrangement. This in turn is supplemented by a new AC wiring schematic, featuring individual cables directly connected to each component to provide maximum efficiency.

The cables themselves were chosen for their mechanical integrity and are typically designed to withstand the harsh environments of aerospace, automotive and energy applications.

The ELX is the first electric sideloader under four metres in length that retains a full well width and ground clearance.

The bespoke battery more than doubled the work cycle expectations during field trials, but that's not the only electric upside.

Cost and noise savings will benefit long-established companies which have seen towns grow up around them, and are under pressure to cut emissions and noise pollution by neighbours and legislators.