

LB Foster
Automation

**Door
assembly**

Automated
inspection &
assembly
solutions





“Our inspirational automated engineering solutions keep the world moving for our customers and their customers too ”

IAC has more than 160 years of automotive interiors technology expertise. The company is a tier one automotive manufacturer supplier and partners with engineering solutions specialists to deliver automated manufacturing capabilities.

L.B. Foster Automation specialises in the design, manufacture, testing, installation and maintenance of bespoke engineering solutions to automotive tier one component sub assembly suppliers.

We enjoy a successful track record working with IAC Group Limited. Previous collaborations include the design of an innovative automated headliner assembly inspection solution for the automotive sector. So we were its partner of choice when IAC was approached by Jaguar Land Rover to develop automated door assembly and inspection machines for its new Land Rover Discovery.

Requirement

L.B. Foster Automation was approached by IAC Group Limited to supply bespoke automated machines to assemble components and perform inspection checks on car door assemblies for the new Land Rover Discovery.

IAC identified a requirement for four units. Each machine is purpose-designed to accommodate each door of the vehicle:

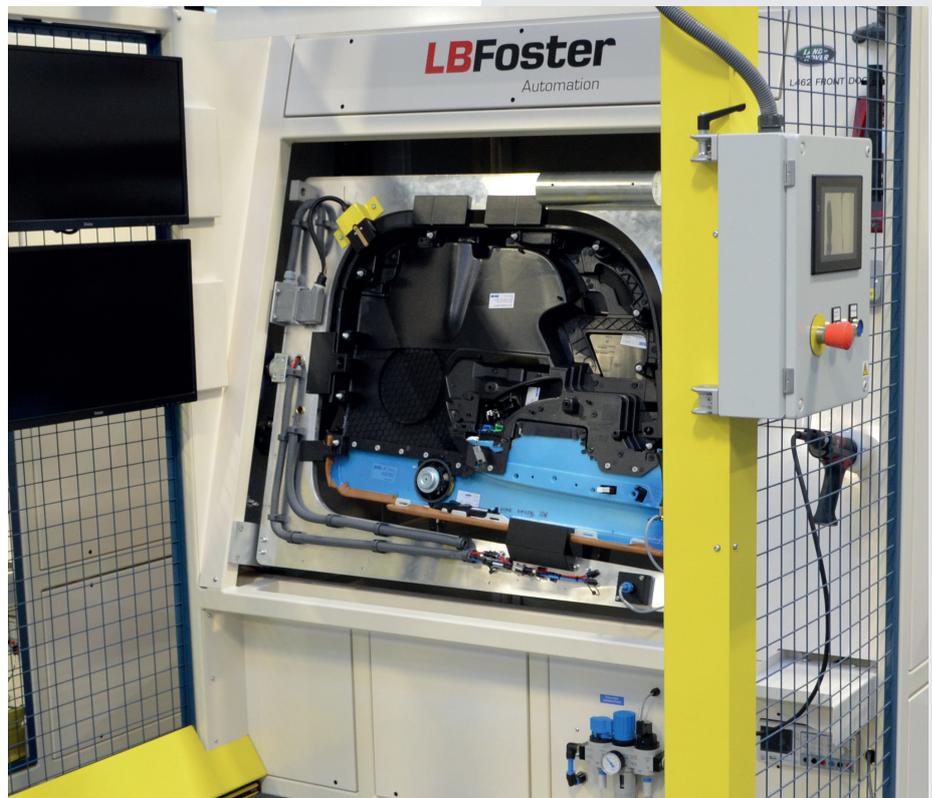
- >front left hand
- >front right hand
- >rear left hand
- >rear right hand.

Specification

- >Robust framework with fork-lift pick-up points and painted to IAC colours
- >Dedicated door handling tooling mounted to a manual rotating frame
- >High resolution cameras to provide all 'A surface' component presence and colour checks
- >An E test block located on the main machine framework for continuity checks when an operator is working on the B surface
- >Control system with operator push button controls
- >Through beam sensing
- >Powered torque drives
- >Bar code scanner
- >Direct thermal printer
- >Flat screen monitor
- >Automated control system
- >Overhead lighting gantry

"This really was a case of starting with a blank piece of paper. We worked closely with L.B. Foster Automation to create a smart engineering solution that automates the door assembly and, at the same time, delivers a range of complex inspection checks."

Peter Philips, IAC Group Limited



Our solution

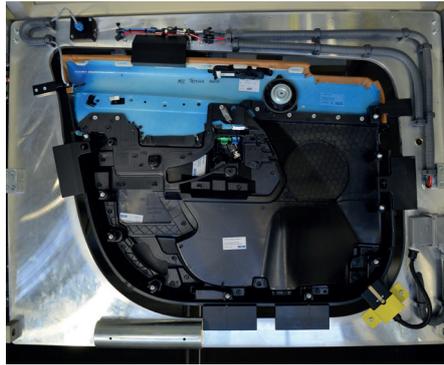
IAC's specification for the new Land Rover Discovery door assembly and inspection units included a number of sophisticated functions as standard, as well as some 'nice to haves'.

Our solution considered the best way to deliver the required functionality, whilst incorporating added value features and operational innovations as standard.

As the specification developed, we worked in collaboration with IAC to deliver best in sector solutions.

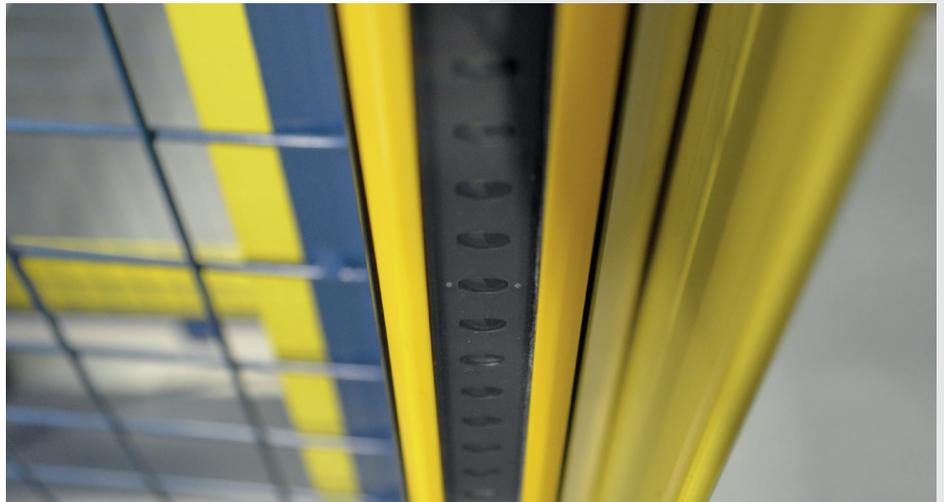
Among the 'added value' capabilities designed into our solution is the ability to rotate each door automatically whilst clamped in the machine, allowing operatives to work on both the A and B surface of the door without the need to manually rotate doors.

We also modified the design of the switch pack within the door assembly to include additional vision sensing and moving bracketry to ensure the area is covered through the assembly process.



Benefits

- >Bespoke configuration delivers class leading functionality
- >Designed in safety features protect operatives
- >Innovative automated door rotation function speeds up inspection and assembly process
- >Application of state-of-the-art vision technologies ensures 100% accuracy
- >In-built fail safe control systems prevent operative error.



"Our door assembly solutions are mission critical."