

Axiom

Axiom automates World of Books Coventry distribution hub

 **MADE IN BRITAIN**



Three inducts divert up to **5000 items per hour to stock**, manual processing or recycling.

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Martin Fisher,
Operations Manager
World of Books


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Scanners read barcode and WoB algorithm determines item's status.

Swivel Wheel Sorters divert items to stock, manual processing or recycling.



Completing a contract worth over **£1.5m**, Axiom GB has automated World of Books' ecommerce fulfilment centre in Coventry. Capable of processing up to **200,000 items a day**, Axiom's innovative installation includes belt and zero line pressure conveyors, a sorter with a series of 10 multi-directional Swivel Wheel Sorters to divert items to **one of the 21 outfeed stations**, and a high speed tote lift.

It also features **three inducts capable of diverting 5000 books per hour** to three destinations based on recycling, required stock, or manual processing. In addition, there is a 12 destination single sided Swivel Wheel Sorter with 90 degree chutes for manual processing.

In just **20 years** World of Books has grown from a start-up company into the **UK's largest seller of used books.**

The company's main ethos is to help people reuse and recycle for less through innovation and technology. With headquarters in Goring-by-Sea and its Coventry and Cincinnati based distribution hubs, World of Books has a combined inventory of more than eight million items, selling a book somewhere in the world every two seconds.

With the **rapid expansion of the business**, a new central ecommerce facility was needed that could house the growing stock of books and media (CDs and DVDs). Situated in Coventry at the Middlemarch Business Park, this **new 100,000 sq. ft. facility** now serves the whole of the UK and is the company's central hub for its growing empire.

Axiom's advantage

Martin Fisher, Operations Manager for the hub, explains why Axiom was selected as the company's automation partner:

"It was a combination of the design, capability, and cost of Axiom's solution, together with the **accessibility and availability of the Axiom team.**

"Axiom is local to our Coventry site, and we quickly established a good rapport with Matthew Nickson, the company's managing director. The system Axiom proposed offered a new level of automation for us, as our head office in Goring is very much a manually run facility. The throughput and reliability of the automated system Axiom proposed meant that we would outstrip all our current KPIs and **deliver a huge performance benefit for World of Books.**

"Another major advantage of the automated solution, especially in the current market, is the **reduction in the number of people needed to operate the hub.** If it wasn't automated, we'd probably be looking at an extra 70 people required onsite and trying to get suitable staff in the current climate would be a real struggle. Axiom designed, manufactured and installed a well-thought out and effective solution that not only solves our people problem, but also exceeds the KPI goals and allows for **future growth of business.**

"Currently, we process around 150,000 items each day of which 45,000 end up going directly for recycling with the remaining 105,000 items put into stock. The system is **designed to cope with 200,000 items a day**, however, at present, we are not yet operating it at its full capacity.

Automated goods in

The used books and media come from many sources such as charity shops, libraries, and book traders. They are received into our Coventry facility in either large rigid plastic pallet boxes or in cardboard boxes on wrapped pallets.

Each item is fed into the system with the barcode facing up so that the scanners can read them. As they pass under the scanners, the algorithm on our software system checks whether we require the book or not.

Those that can be identified go via conveyors direct to the main swivel wheel sorter for automatic sorting based on sell-through rate. Operatives at 20 of the 21 outfeed stations place the items in totes which, when full, are placed onto a conveyor which takes them to the tote lift. This transports the totes to the correct floor to be put away into stock. The 21st outfeed station collects any unsorted items. Any books surplus to requirements are automatically sent straight to recycling.

If an item doesn't have a barcode or the barcode can't be read, it is automatically sent via conveyors to a 12 position manual sorting area. Here, operatives check each item, manually opening books to scan the ISBN number or scan the barcode so it can be sorted appropriately.

If necessary, a barcode label is printed and affixed to the item before it is placed in a relevant tote to be put into stock. Again, the books and media are classified and sorted on the sell-through rate of each item. Books that are not wanted for resale are placed on a belt conveyor to be taken straight to the recycle station.



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Operators at 12 stations manually check unidentifiable items that can't be sorted automatically.

Consumer sales into World of Books

Consumers also sell books and media back to World of Books through "Ziffit" a recycling platform managed by World of Books. These items are received via couriers in small cardboard boxes. The boxes are opened and placed on a conveyor which delivers them to one of 20 inbound manual checking stations.

Here the operatives check the items. If they are not required, they are placed directly onto a belt conveyor which takes them for recycling. Those books, CDs and DVDs that are suitable for resale are placed into a relevant tote to go into stock. As with other goods in items, the books and media are classified and sorted on the predicted sell-through rate of each item.

Key Benefits

1. System capable of processing up to **200,000 items a day**
2. Belt and zero line pressure conveyors inducts capable of diverting **5000 books/hr to 3 destinations**
3. Sorter with **10 multi-directional Swivel Wheel Sorters** diverting items to 21 outfeed stations
4. 12 destination single sided Swivel Wheel Sorter with **90° chutes for manual processing**
5. **High speed tote lift**



A tote lift takes items for stock to one of four levels.

Picking and dispatch

When an item is ordered, picking is done manually in the picking tower by operatives who place the items into totes. These totes are sent back down to the ground floor via the tote lift and delivered via conveyors to one of twenty packing and dispatch stations.

Once packed, items are put either on a belt conveyor which delivers them straight into the relevant post office delivery sacks or dropped into large plastic pallet containers for dispatch via oversea couriers.

British design and manufacture

Axiom's in-house team of specialist engineers designed the system, components, controls, and software for the World of Books project. The vast majority of equipment supplied was manufactured and assembled in the UK, keeping lead times to a minimum. The Axiom team was onsite throughout the build to ensure the smooth and timely installation of the solution.

Martin Fisher again, "Axiom supported us really well throughout the project. **They were very flexible during the build, helping us with any issues or concerns and getting on well with the other contractors onsite.** They handled last minute design changes seamlessly, ensuring a really well-planned and executed installation.

"Since we went live with the system, Axiom has continued to support us in a professional, efficient and friendly manner. We had to put some of the training of our own engineers on hold due to Covid restrictions, but Axiom accommodated this, returning when appropriate to fully train our people. The annual maintenance contract we have with Axiom ensures that not only is our equipment regularly serviced, but also our own engineers are kept at the top of their game.

"Axiom came through really well, delivering on everything they promised, and all within the agreed budget for the project. As a result, we're now discussing future ventures with them, in particular image recognition and how we can integrate this into our system. There's absolutely no doubt that we'll continue to build our business relationship with Axiom to help ensure the ongoing success of World of Books," concludes Fisher.



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The main sorter with 10 multi-directional Swivel Wheel Sorters diverts items to one of 21 outfeed stations.

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