World Class Baggage Handling
Company Profile

Materials Handling Systems and Associated Equipment including full:

- Design Service / Consultancy
- Development
- Project Management
- Manufacture
- Installation
- Commissioning
- Service & Maintenance
- Refurbishment

History

A family company for over three generations. The company has built an enviable reputation spanning more than 100 years for the design, supply, installation and commissioning of efficient handling systems.

Successful ROBSON handling solutions have been provided for the market leaders in industries such as steel, glass, sugar processing, the postal service and airports, where our quality of design and technical expertise have been tried and tested in the most demanding environments.

The Engineered Solution

The core of the ROBSON service is engineering. Every project is designed for purpose and safety, built to meet the specific customer requirements and current British and European Standards and Safety Regulations.

Custom engineering is a major element of the ROBSON approach allowing the integration of both customer and company experience to produce the final solution.

Total Project Management

Project management is the key to planning, controlling and completing the total project scope enabling an integrated approach to be developed whatever the Challenge.

Quality

With qualified and skilled engineers for the Design, Construction and Installation ROBSON customers' are assured that Quality of Components, Systems and Finish are of the highest standard.

The company can meet all approved quality standards. Certified BS EN ISO 9001:2008 the company has held Quality Assurance Certification status since 1987.

Subsidiary Company

RJD FABRICATIONS LTD, Rotherham, is a subsidiary company skilled in providing quality fabrications to meet the highest standards.

3,600 square metre facilities enable the design and manufacture of fabrications for an increasing range of industries including oil, coal and chemical, as well as partnering to the materials handling aspect of the ROBSON organisation.

In 1988 RJD FABRICATIONS LTD became one of the first South Yorkshire fabrication companies to qualify for the international quality standard ISO 9002 continuing the quality through to present with BS EN ISO 9001:2008.
Industries
In addition to the Airport Sector Robson also provide Materials Handling Solutions to many Bulk Handling Sectors:

<table>
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<tr>
<th>Industries</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Airport Baggage Handling</strong></td>
<td>Robson’s comprehensive Catalogue of Airport systems, is a significant part of the business. With the design, supply and installation of Baggage Handling Systems totalling over 100 systems worldwide, Robson reputation has been built on quality of design and service together with a comprehensive range of integrated equipment which whilst standardised in it’s construction is still purpose system built to suit the client’s specific requirements.</td>
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<tr>
<td><strong>Sugar Conveying Systems</strong></td>
<td>Robson design, manufacture, install and commission complete sugar handling complexes, including civil works, building works, mechanical handling plant, dust extraction, air conditioning and PLC electrical work. Working with the world biggest Sugar suppliers, Robson understand the need fast robust, effective machinery. With the supply of ATEX approved Elevators, Airglides and Screw Conveyors along with the vast knowledge and experience makes Robson an industry leader in this field.</td>
</tr>
<tr>
<td><strong>Bulk Handling Conveyors</strong></td>
<td>A demanding industry demands the best and Robson project engineers deliver innovative and precision-engineered solutions. Robson take the bulk of the responsibility as a partner in your next project. A partner that will put wholehearted commitment into achieving your objectives now and throughout the whole working life of the installation. At the heart of Robson is the strength gained from many years of worldwide experience in the design, manufacture, installation and commissioning of conveyor systems.</td>
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<tr>
<td><strong>Cement Conveyor Systems</strong></td>
<td>Few industrial processes place a greater demand on handling machinery and systems than cement manufacture. Robson provides bespoke conveyors, hoppers, silos, bunkers and feed systems for every stage of cement manufacture and supply. The company’s project engineering team combine industry knowledge and experience with the latest computer simulation techniques, 2D and 3D drawing programs to produce the most cost effective and productive solutions.</td>
</tr>
<tr>
<td><strong>Environmental Conveyor Systems</strong></td>
<td>Green issues are high on the international agenda and so is the fast growing Environmental Industry that deals with the handling of hazardous or waste materials. Alternative fuels have also recently entered the arena as Governments look for the use of waste material as a Green' power source. Equipment must be robust to withstand these tough materials, yet precision-engineered to ensure safe and careful handling.</td>
</tr>
<tr>
<td><strong>Glassworks Conveyor Systems</strong></td>
<td>From concept to completion and beyond Robson can provide all types of mechanical handling equipment necessary to meet your needs for high quality glass batch. Over the years, we have established a reputation for quality of design and service, together with a comprehensive range of integrated equipment, which is generally purpose-built to suit each client’s specific requirements.</td>
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Airport Systems
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Robson Airport Catalogue
- Check-in systems,
- Transportation belts,
- Merge conveyors,
- High speed pushers,
- High speed ploughs,
- Vertical sortation units,
- Flat carousels,
- Inclined carousels,
- Container handling,
- Baggage cart conveyors,
- Spiral chutes and steelwork.

Additional Services
To complement the supply of systems Robson also provide:
- Consultancy Services
- Concept Design
- Computer simulation
- After Sales
- Maintenance
- Refurbishment

Scope
Robson’s scope ranges from single check-in or arrivals systems to multi-million pound fully Automated Sortation Systems. Robson are one of the market leaders in the integration of 100% Hold Baggage Screening into Airport Baggage Handling Systems.

Robson has been a main supplier of equipment at Heathrow Airport for almost 30 years and at Stansted for over 15 years a relationship built on quality of product and service.

Robson customers include most UK regional airports upgrading existing systems or providing new Terminal Baggage Systems. Robson have provided Baggage Systems worldwide.
Baggage Handling Conveyors

Robson Airport Baggage Mechanical Handling Solutions offer the ultimate for speed, reliability, robustness and product life. With a range of conveying solutions to suit the most challenging of sites and surroundings. Robson offer conveyors configured for Weighing, Sorting, Security, X-Ray, Out of Gauge, Diverting Horizontally and Vertically. With Merging capabilities, Incline and Decline plus Power Bends, Robson take the lead for the total solution package.

- The conveyors casings are constructed from 3 pressing slider bed using 2.5mm thick mild steel plate.
- All drive frames, joint flanges and equipment fixings are fabricated from rolled mild steel flat and pressed sections.
- Conveyor troughs are jig built to ensure conveyor sections are square and interchangeable.
- The conveyor tension gear is guarded with painted mild steel punched plate guards. All nip points are fitted with painted punched mild steel plate guards.
- Punched mild steel plate to the underside of conveyors (where required) will be hinged on one side and fitted with budget locking devices where applicable.
- Terminal pulleys are calculated at 124mm diameter and are short faced complete with static shrouds.
- All conveyors are driven by shaft mounted geared motor unit complete with torque arm fixing.
- All bearings are grease lubricated, self-aligning, single row, “Y”-type, anti-friction and sealed. Bearing selection is based on 50,000 hours under the duty load operating condition, factored to give a 20 kilogram per metre real life conveyor loading.
- Belt tension adjustment is provided via a screw tension gear.
- Conveyor belts will be of 2 ply polyester monofilament fibre with the lower ply of spun fabric to produce low noise characteristic.
- Horizontal conveyors are fitted with smooth top and inclined/declined conveyors are fitted with grip face conveyor belting.
- The conveyor belting is flame retardant in accordance with ISO 340.
- All conveyors are supplied with conveyor belts suitable for factory or site vulcanising.
Hold Baggage Screening

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To safeguard the security of passengers hold luggage is usually scanned by inline X Ray units. Robson have a history of integration of X-Ray machines working with the leading manufacturers from around the world with the design and installation of conveyors and controls to provide complete HBS Solutions.

The design incorporates the Accept or Reject function, baggage can be diverted on reject for further scanning or examination.
# Hold Baggage Screening - HBS 5 LEVEL PROCESS

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<tr>
<th>LEVEL 1</th>
<th>LEVEL 2</th>
<th>LEVEL 3</th>
<th>LEVEL 4</th>
<th>LEVEL 5</th>
</tr>
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</table>

**HBSS PROCESS**

- **LEVEL 1**: Automatic X-Ray Machine Evaluation
- **LEVEL 2**: Operator Assisted Evaluation at Level 2 Workstation
- **LEVEL 3**: Comprehensive Operator Evaluation at Level 3 Workstation
- **LEVEL 4**: Baggage Search With Passenger
- **LEVEL 5**: Security Alert

**TYPICAL HBS SOLUTION**

- Diversion to Roller Track whilst Level 3 Analysis is Undertaken
- Store Loop for Bags whilst Level 3 Analysis is Undertaken
- Option to Incorporate Separate Technology for Level 3. For Example - CT Machine

**Methods Available for Diversion of Level 3 Bags From Main Flow**

- Reversing Conveyor
- Motorised Plough
- Pusher
- Verti-Divert
Baggage Carousel

A Robson Carousel provides an endless surface which baggage can be displayed prior to reclaim. A combination of straight and radius sections gives the Robson carousel the flexibility to form different types of shapes such as L, J, U, T, I most shapes can be accommodated depending on available space. Rigidly constructed on to a 6mm mild steel sub-frame, choices of galvanised or powder coated mild steel or x240 grit finish stainless steel casings are available. With a nominal speed of 0.45 metres per second and having all fixings internal to the casing resulting with no protruding items plus integral Kick Plates the Robson Carousel ensures the safety of all uses, Baggage Handlers or passengers. The conveying surface comprises of overlapping flexible rubber slats horizontal or inclined, supported on the underside by steel carriers, this gives a user friendly surface that eliminates finger traps, whilst having a strong support able to withstand heavy luggage.

Two options are available

Caterpillar Drive
A Caterpillar drive engages horizontally with the Bi Planer, chain via pairs of teeth forming the outer links. There are a minimum of two teeth in engagement at any time.
The tow chain is of the Bi-planer type allowing articulation both the horizontal and vertical planes

Friction Drive
The Bi Planer chain is made up of universal links formed from Glass reinforced polymer.
A Friction Drive provides power to the chain links
The Friction Drive Carousel offers the following advantages over a conventional carousel
• low noise level
• low power requirement
• low whole life cost
• low maintenance
• lower lead-time
• attractive design

Typical Carousel Layouts

Caterpillar Drive
Friction Drive
Horizontal
Inclined
45° Merge Injection Conveyor

- The merge conveyor comprises twelve belts, each 80 mm wide but of differing lengths arranged to provide a live surface from square end infeed position to a stepped discharge position set at 45°.
- Each belt has a ribbed surface and is tracked by crowned head and tail pulleys. Quick belt changes are realised by ‘slipping’ the damaged/broken belt off its pulleys and through an access plate located in the short side of the conveyor. The replacement belt is fed through the access plate and located on the relevant pulleys.
- The Merge Conveyor is available angled left or right hand. The versatility of the Merge Conveyor means it is able to connect to any one of the Robson Range of Airport Baggage Conveyors including the Baggage Reclaim Carousel.

Power Bends

- The specially developed curve belts are in the shape of a cone, endlessly joined with a vulcanised joint and fitted with a continuous beading which guide the belt smoothly between angled ‘sealed for life’ bearings giving a quiet and maintenance free path.
- Drive is through a tapered pulley covered with a high friction coating allowing speeds up to 150 meters per minute with loads for 60 Kg/meter.
- The patented guidance system, which requires no lubrication, eliminates the need for chain or rollers to be carried on the belt and the problems associated with them (high noise, greasing, belt tearing, high motor power).
- The power bends are supplied complete with shaft mounted drive packages, support legs, underguards and sidewalls.
- Curves can be supplied with any inside radius, belt width or angle and even be configured into a helix form for inclining or declining systems.
### Check-in Conveyors

Robson weigh, label and despatch conveyors can be configured in to one, two or three stage check-in arrangements. The conveyor and casing is constructed from a 3 pressing slider bed, manufactured using 2.0mm thick satin finish stainless steel plate x 240 grit finish as specified.

### Gate Hoods

With the variety of passengers’ baggage presented to the gate-room baggage drop the design has to accommodate every shape size and material of luggage. The Hood allows secure transfer of baggage from the gate room to the loading level quickly and safely. Allowing the baggage to be collected from the chute and loaded to the aircraft’s hold. The construction of the Hood is normally brushed Stainless Steel within passenger areas, stainless steel for the chute and galvanised mild steel supports and rollers tracks for the baggage hall areas ensure a durable long lasting finish.

### Chutes

From a simple slide to complex spirals, chutes offer fast effective transit of baggage from height to ground. With the added benefit of no running cost once installed, chutes are widely used throughout the world’s airports.
## Plough

The plough's design is to guide pre-selected bags from the main carrying conveyor to an alternative conveyor at a maximum rate of 20 bags per minute.

The plough is rigidly constructed and mounted to withstand impact from a maximum specified single bag weight at the belt speed identified.

The plough will be deployed by a geared motor unit via the pivoting mechanism, all suitably guarded.

## Pusher

The pusher is designed to push bags off at a maximum rate of 45 bags per minute.

The pusher is rigidly constructed and mounted to withstand impact from a maximum specified single bag weight at the belt speed identified.

The pusher is deployed by a 2.2 Kw geared motor unit. The output shaft of the geared motor unit is equipped with a timing belt pulley which drives a pair of drive pulleys via a timing belt tensioned by two spring loaded devices.

## Verti-Divert

The Verti-Divert is a vertical sortation unit designed for use within "in-line" X-ray and line diversion solutions. It is developed to divert cleared and uncleared bags to low and high level collector conveyors stationed above one another. The Verti-Divert is rated for 25 bpm and is based on current maximum Level 1 X-ray throughputs; the 25 bpm can be down rated for lower throughput levels.

The unit utilises three standard queuing conveyors built from standard components.
Ancillaries

Robson offers a range of products and services that complement their Airport Baggage Handling Equipment.

**Ball Transfer Tables**
To ease the burden of manual handling Robson offer Ball Transfer tables.

**Gravity Roller Conveyors**
As with the ball tables gravity tables alleviate the need for manual handling.

**Security Shutter Doors**
When a secure barrier is needed that offers weather protection and is compact and unobtrusive, a shutter door is a strong durable solution.

**Fire Shutter Door**
In addition to the security benefits above a Fire Shutter Door is tested and assessed to BS 476: Part 22 with a fire resistance of 240 minutes.

Robson Services - Refurbishment

Robson offers a Refurbishment service that complements their Airport Baggage Handling Equipment.

Check In is the first and often the last experience the passenger has with the baggage handling system when departing. With passenger numbers and flights ever increasing the use of the Check In facility is paramount to the smooth running of the airport.

Downtime because of breakdown can cause lengthy delays and put pressure on the other check in desks to cover the short fall. As one of the world foremost Airport Baggage Handling Conveyor system manufacturers, Robson’s team of Conveyor engineers offer the service of Refurbishment and Servicing of the Check In Baggage Conveyors.

**Conveyor Refurbishment Service**
Solves all these problems, ensuring safety, performance and reliability, together with a modern renewed finish

<table>
<thead>
<tr>
<th>Re-grained Stainless Steel Casings</th>
<th>New Belts Fitted</th>
<th>Renewed Electrical Equipment</th>
<th>Serviced Mechanical parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chassis cleaned and repaired where necessary</td>
<td>Weight conveyor scale checked and recalibrated where necessary</td>
<td>Wiring and connections renewed</td>
<td></td>
</tr>
<tr>
<td>Castors and fittings checked, replaced where necessary</td>
<td>Testing of existing or new height bars and hinged gates</td>
<td>Recommended list of spare parts to ensure future service</td>
<td></td>
</tr>
</tbody>
</table>
Robson Services - Maintenance

In today's climate of tight deadlines and tighter maintenance budgets, downtime is not an option. To have the support of an experienced Baggage Handling Company, just a phone call away is invaluable to keep the Baggage Handling process running smoothly. Robson's team of dedicated apprentice trained mechanical engineers have vast Baggage Handling Systems knowledge, gained from many years in the industry. Robson can ensure downtime losses are minimal and the Baggage Handling System is returned to service as quickly as possible. Robson engineers are equipped with the resources and tools to ensure the plant is operational in the shortest time.

Tailored Solutions
- **Training** - Engineer instructors teaching the skills needed to Maintain and Service Baggage Handling Systems.
- **Maintenance** - Time Served Engineers servicing and maintaining your Baggage Handling Systems to optimum levels, ensuring performance and reliability.
- **Bonded Spares** - Allocated spare parts ready for despatch as and when needed. Delivered and fitted by an engineer when requested.

Robson Services - Simulation

Proving mechanical engineered designs has traditionally been through the painstaking processes of drafting the design, calculating through puts, speeds and feeds, factoring power consumptions and motor ratings, also ensuring variances of size, weight and material are considered.

When the design reaches the engineering shop floor mistakes or miscalculations become very costly, even more so when the machinery or plant item reaches the customers site.

Robson found that time taken perfecting the design, adding in the variances and looking at alternatives would save time and money at the build and commissioning stages.

Simulating the design as a 3D model, with a real-time animation product flow can be seen. The Engineer can identify areas of concern, well before production starts. Changes on the model of the speed and feed rates can increase the efficiency of the conveying system.

The simulation can:
- Remove Bottlenecks
- Identify Speed differences
- Include Human involvement
- Consider Security Check points
- Ensure Hold Points
- Includes Diverts
Robson – a truly global company

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