

# Complete range of solutions for picking, storage and handling

COUZENS STORAGE SOLUTIONS



MODULA VERTICAL LIFT



VERTICAL CAROUSELS



TOWERMAT HEAVY DUTY VERTICAL LIFT



MULTI-LOOP PATERNOSTERS



HORIZONTAL CAROUSELS

# Automated space-saving storage and retrieval solutions for parts assembly, manufacturing, engineering and distribution

**Couzens Storage Solutions is one of the UK's foremost and most experienced suppliers of automated goods-to-man storage and retrieval Carousels and Lifts. We provide highly compact, space-saving storage - often using neglected overhead space or awkward areas - and fast, secure and efficient picking and stock control.**

Compared with conventional racking and lift truck storage, Vertical Carousels and Lifts can cut floor space needed by 80% or more, which may even help users avoid the cost and disruption of relocating or extending their existing premises, at a fraction of the cost. Systems can be installed partly below ground or through the roof, installed externally with inside access, making even more productive use of space.

Carousels and Lifts are ideal for storing almost any product or material, from high value, tiny electronic components and pharmaceutical products to large, heavy and ugly items such as jigs, tools, castings, cable, sheet metal and bar stock. They can handle individual loads of five tonnes or more in units able to store up to 900,000kg. For storing products such as pharmaceuticals and medical equipment, units can be supplied to meet clean room specification and climate controlled environments.

Couzens Storage Solutions' systems incorporate the latest IT and software developments, with equipment including biometric security devices, bar code readers, on-screen images for faster, more accurate picking, Pick and Place-to-light technology and integration with conveyors and other systems.

With extensive experience of interfacing with popular MRP/ERP systems, Couzens also offers standard or bespoke software modules for use with all products, providing inventory control, Location and Usage Data, FIFO, free location information and statistical reports.



All the main products supplied are manufactured to provide maximum flexibility in design and configuration to suit what has to be stored and the available space.

With manufacturing centres in Germany and Italy, we are able to select the most appropriate equipment, manufactured to match the client's specific requirements.

## UNRIVALLED INDUSTRY EXPERIENCE

Couzens Storage Solutions has accumulated a rare fund of expertise and knowledge over two decades of assessing, recommending and installing productive, cost-effective and practical storage and retrieval solutions.

Our success is firmly based on being able to offer unbiased advice on the selection and use of automated storage systems and technology. We take time to investigate and understand the options available, so we can be sure that the solution we propose

is practical, cost-effective and achieves the objectives agreed - both before, during and after installation.

Our philosophy is wherever possible to look beyond the obvious and find the innovative and fresh solution that will deliver additional value to your project, with individual service and care.

All products are backed by a warranty after commissioning, with full parts, service, maintenance and repair facilities to provide maximum lifetime value.

## EASY PRODUCT SELECTION GUIDE

No two projects are the same and the right solution may not be the most immediately obvious answer. However the table below provides a simple overview of the main applications and advantages of the various Carousel and Lift systems in the Couzens portfolio.

All machines are designed for multi-order batch picking, Pick-by-light and Place-by-light systems, and manual or automatic order picking.



PART SIZE	Vertical Carousel	Horizontal Carousel	Modula Lift	TowerMat	Multi-loop Paternoster
Small	✓	✓	✓		
Medium	✓	✓	✓	✓	✓
Large		✓		✓	✓
<b>MACHINE LOAD RANGE</b>					
1-20 tonnes	✓	✓	✓	✓	✓
20-40 tonnes		✓	✓	✓	✓
40-60 tonnes			✓	✓	✓
60+ tonnes				✓	✓
<b>MAX MACHINE CAPACITY</b>					
Per level Kg	1,000	250	750	5,000	4,200
Max Kg	20,000	35,000	60,000	900,000	200,000
<b>LOAD DIMENSIONS</b>					
Max width m	6.0	1.5	4.1	10.0	12.0
Max depth m	1.0	1.2	0.815	2.00	1.5
Max height m	1.0	4.0	0.650	2.00	1.5
<b>MACHINE HEIGHT</b>					
Max mts	12.0	4.0	14.0	14.0	14.0

# Modula Vertical Lift

- STORAGE OF WIDE RANGE OF ITEMS
- SMALL TO MEDIUM SIZES
- FAST PICKING WITH TWO TRAY DELIVERY SYSTEM
- FULLY INTEGRATED SOFTWARE WITH PICK-TO-PICTURE
- AUTOMATIC ACCESS PORT DOORS

Modula Lift is an advanced, computer-controlled vertical lift storage, picking and retrieval system. Ideal for storing a variety of goods of different dimensions in a single unit, it automatically selects and transports items to and from the operator, delivering improved productivity, faster picking and lower costs.

Modular design allows each Lift unit to be specified with heights from 2.8m high up to 14m as standard, and extended or reduced at any time as needs change.

Trays can be manufactured in a variety of lengths and depths from 2.2m x 0.625m up to 4.1m x 0.815m as standard to suit almost any application. Maximum load per lift tray is 750kg, with total unit capacity of 60,000kg.

The lift is fitted with an automatic height optimisation system designed to store products of different heights. A measuring gate with photoelectric cells at the goods entry area recognises then accepts products entering the machine, and selects the most suitable storage position according to the item size and available space in the Lift.

Multiple access ports on either side of the lift, at heights to suit both ground floor and mezzanine level operations, provide zone picking and operational flexibility.



## SECURITY

Badge and password protection entry systems are built into the software, strictly controlling access to both the Modula Lift and its contents to authorised staff. Individual trays or groups of products can be protected in the same way, permitting different levels of access according to need and approval, providing a higher level of security.



Internal tray presentation includes autodoors as standard



Two tray delivery system, autodoors optional

## PICKING SYSTEMS

Modula provides picking alternatives to meet the client's individual operating criteria. Trays can be presented to the operator internally within the lift structure, or outside the structure for clear, easy, overhead access for operators, a hoist, crane or other lifting equipment. This provides productive and safe handling particularly for heavy or awkward loads, avoiding or minimising the need for manual handling.

In both types of tray access positions there is a further option of delivering two trays, one above the other, to the picking zone. Part sizes are limited to 300mm high. The system holds the non-current tray clear of the working tray which is open and fully accessible for picking. The second tray can then quickly replace the working tray, enhancing pick rates and providing rapid access to stock.

# Modula Vertical Lift

## QUALITY ENGINEERING

Designed and manufactured in Italy by System Logistics, the Modula Lift offers ultra-fast storage and picking performance, with the vertical platform operating at up to 2.2m per second. Speed can be set according to the client's storage requirements and may be programmed to run at a slower speed if appropriate.

Modula is manufactured to the highest international standards of quality control, including compliance with 34 EN standards and three European legal directives - European Community Machine Directive (98/37/CE), Electrical Material (73/23/CEE) and EMC Electromagnetic Compatibility (89/336/CEE).

The Company also operates to strict LOLER and PUWER Health and Safety at Work regulations.

## STOCK AND PICK MANAGEMENT SOFTWARE



Modula Lifts are supplied with picking, storage and inventory management software for integration with MRP, ERP and WMS, as well as interfaces with a variety of external devices. Each unit is fitted with a colour touch screen PC and configurable USB and serial connections.

The control console may be in a fixed position or can be moveable along the full picking face. This allows the operator to move the console along the length of the tray to the required pick location, saving the need to go back to a fixed location screen each time to confirm the pick or for further pick instructions, speeding up picking rates and lowering walking time.

When picking requires additional information to ensure that the correct items are accessed or batch and serial verifications are as requested, Modula software and control systems provide a number of helpful features as standard:

- Picture display on screen, with zoom facility for greater detail
- Bar code readers, scales and printers
- Product search facility by part number, location and description

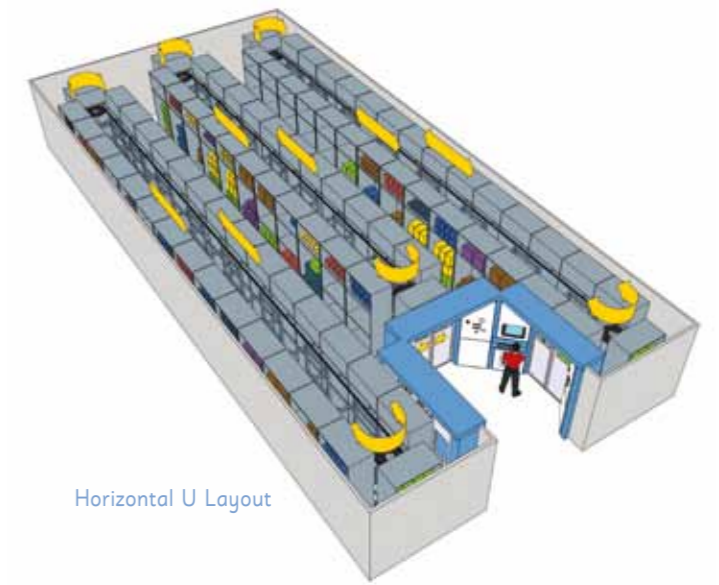
On-screen diagnostics enable operators to read error messages in plain language. A graphic also displays the tray position and lift platform while prompting any actions required.



Sliding console moves along the tray length

# Horizontal Carousels

- RESTRICTED HEADROOM
- IDEAL FOR ON OR UNDER MEZZANINES
- FAST-MOVING MIXED STOCKS



Horizontal U Layout

Horizontal Carousels are ideal for use where headroom is limited, as shelving bays are rotated to present goods to a picking face horizontally rather than vertically. With no expensive overhead support structures, Horizontal Carousels provide an extremely cost-effective method of high-density storage and can be easily installed onto or under a mezzanine floor.

The bays rotate in either direction inside a safe enclosure, with bays presented to the operative for picking from the whole height, width and depth. Shelf levels can easily be configured to hold bulky goods and full height bay access makes the system suitable where fast picking and retrieval is required. Multiple access and picking points can be designed anywhere in the carousel to suit goods flow and demand, with pick-to-light for fast location identification.

Horizontal Carousels can be supplied in a variety of configurations to make the maximum effective use of the space available. Standard bay loads range from 250kg up to 1,000kg, with shelf loading up to 200kg. Automatic doors are fitted to each access point that stay closed during running, and open when the selected bay arrives. A full height photoelectric curtain provides additional protection.

Units with more than 10 bays are fitted with twin drive motors to maintain the same level of smooth running as those with fewer than 10, and to allow the unit to continue operating even should a motor fail.



No overhead drive gives additional storage



# Vertical Carousels

Vertical Carousels are ideal for storing a high number and variety of small to medium parts and components. Carrier (shelves) can be configured to hold almost any variety of totes, containers or using adjustable dividers for cartons, each presented in seconds at an ergonomic picking and placing height.

- **SMALL TO MEDIUM PARTS**
- **HIGH VALUE COMPONENTS**
- **WIDE RANGE OF ITEMS**
- **COMPUTER LINKED OPTIONS**

Multiple access ports on the same or opposite sides of each unit provide more flexible picking both on ground level and on a mezzanine floor. A worktable at each access port provides a convenient area for sorting and counting picked items. A light bar location system helps quickly identify the requested part position along the carrier, for fast and positive picking and replenishment. An LED with depth display is also available.

Each unit can be supplied in the most effective dimensions to fit into a given space to make the maximum use of floor space, between columns, other structures or machinery. Carousel carriers can be made to the size required, in lengths from 500mm to 6000mm

and depths from 200mm to 1000mm. Pull-out drawers for small or delicate parts have a positive locking feature to prevent accidental movement or spillage.

A standard double drive motor system ensures 100% unbalanced loading capability. Should one motor gearbox fail the other has the power - in balanced load conditions - to allow the carousel to continue to operate. Twin motors also means that the carousel always operates smoothly within its capacity, with the assurance of reliable service.

Practical, safe, secure and engineered for quality, EuroMat Vertical Carousels are available with optional computer control for network integration, bar code scanners, batch picking, printing and product labels, reports, place-to-light systems, scales and other accessories.

The on board controller can be linked to the client's network with the use of a PC via an RS 232 or 465 port, with either a numeric digit or alpha numeric keypad.



Pull out drawers and bins for easy access and visibility



Twin motors also means that the carousel always operates smoothly within its capacity, with the assurance of reliable service.



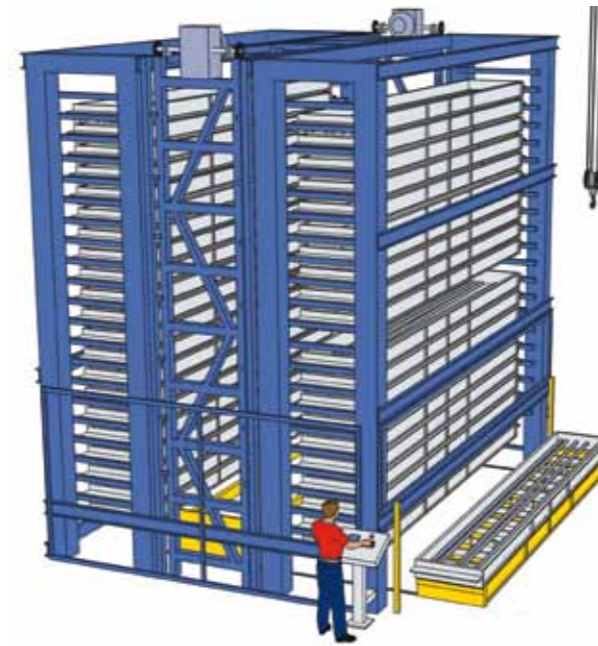
# TowerMat Heavy Duty Vertical Storage

- LARGE, HEAVY & UGLY LOADS
- UP TO 5 TONNES PER CASSETTE
- METAL, BAR & ROD STORAGE
- SHEET, FIXTURES & TOOLS

TowerMat is a Vertical Lift system designed for the heaviest, toughest and ugliest of storage tasks, including metal sheet, bar, profiles, jigs, machine tools, heavy and bulky components. Each storage cassette can hold up to 5,000kg with dimensions up to 10.0m long x 2.0m wide. Units up to 14m high can accommodate a massive 900,000 kg. Cassettes can be manufactured to order in sizes to suit the products to be stored.

Goods are presented for handling via a powered cart, able to exit the TowerMat unit from the front, rear or sides or all faces, even multiple levels, for delivering to a workstation or any other location away from the machine. Alternatively the load can be taken away by forklift, overhead crane or other automated handling machinery.

Unlike other vertical lift designs, TowerMat can be configured in a multi-stack version. This provides capacity for a larger number of trays while still using a single lift mechanism.



Two frame bar storage up to 10.0m long



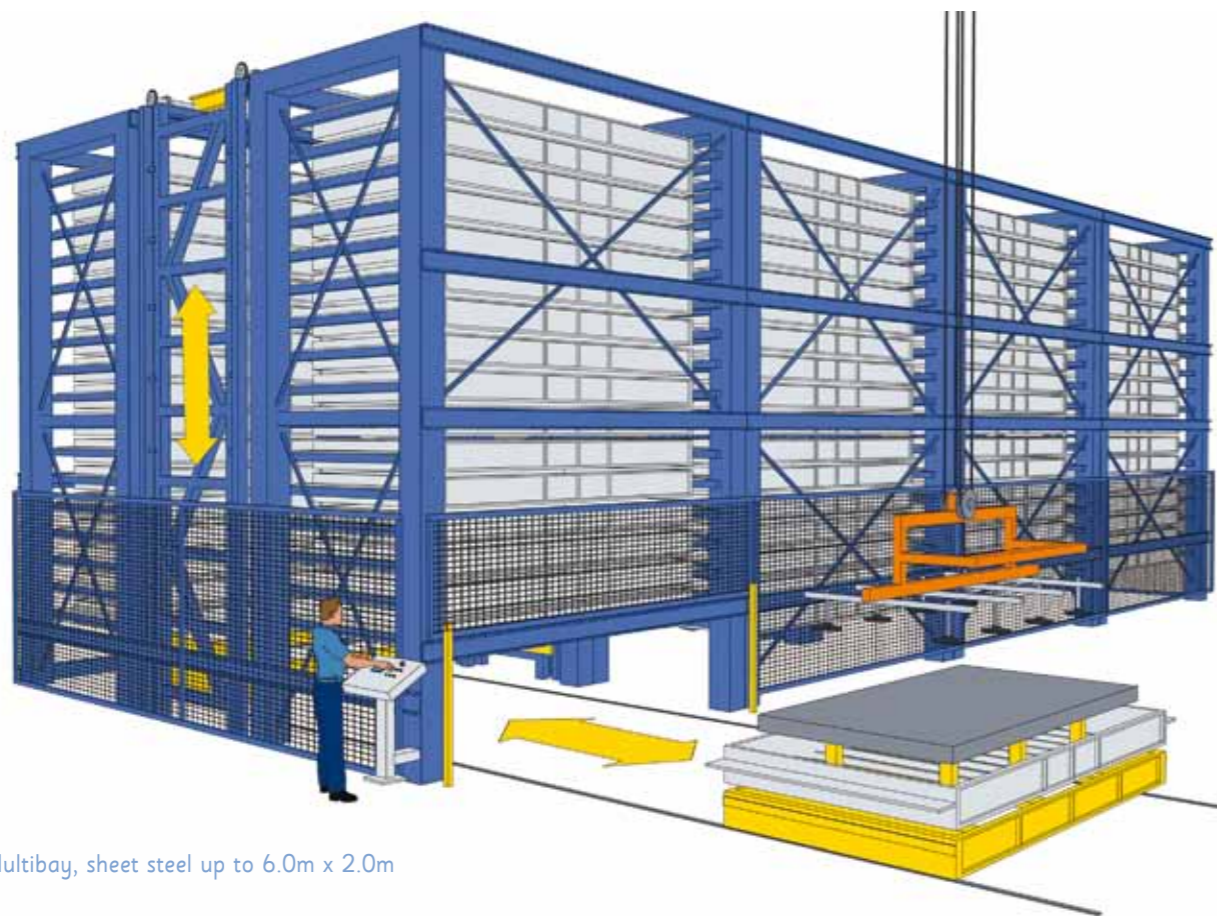
Long goods storage



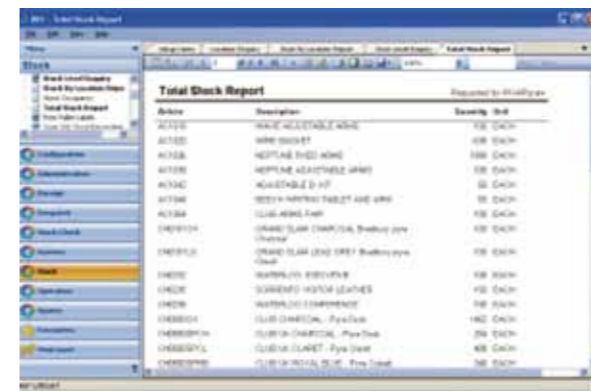
Multi frame version 2



Sheet steel storage



Multibay, sheet steel up to 6.0m x 2.0m



Simple key pad with stand alone or network-linked software via a PC with biometric security entry controls



Close up cassette with bar and dividers

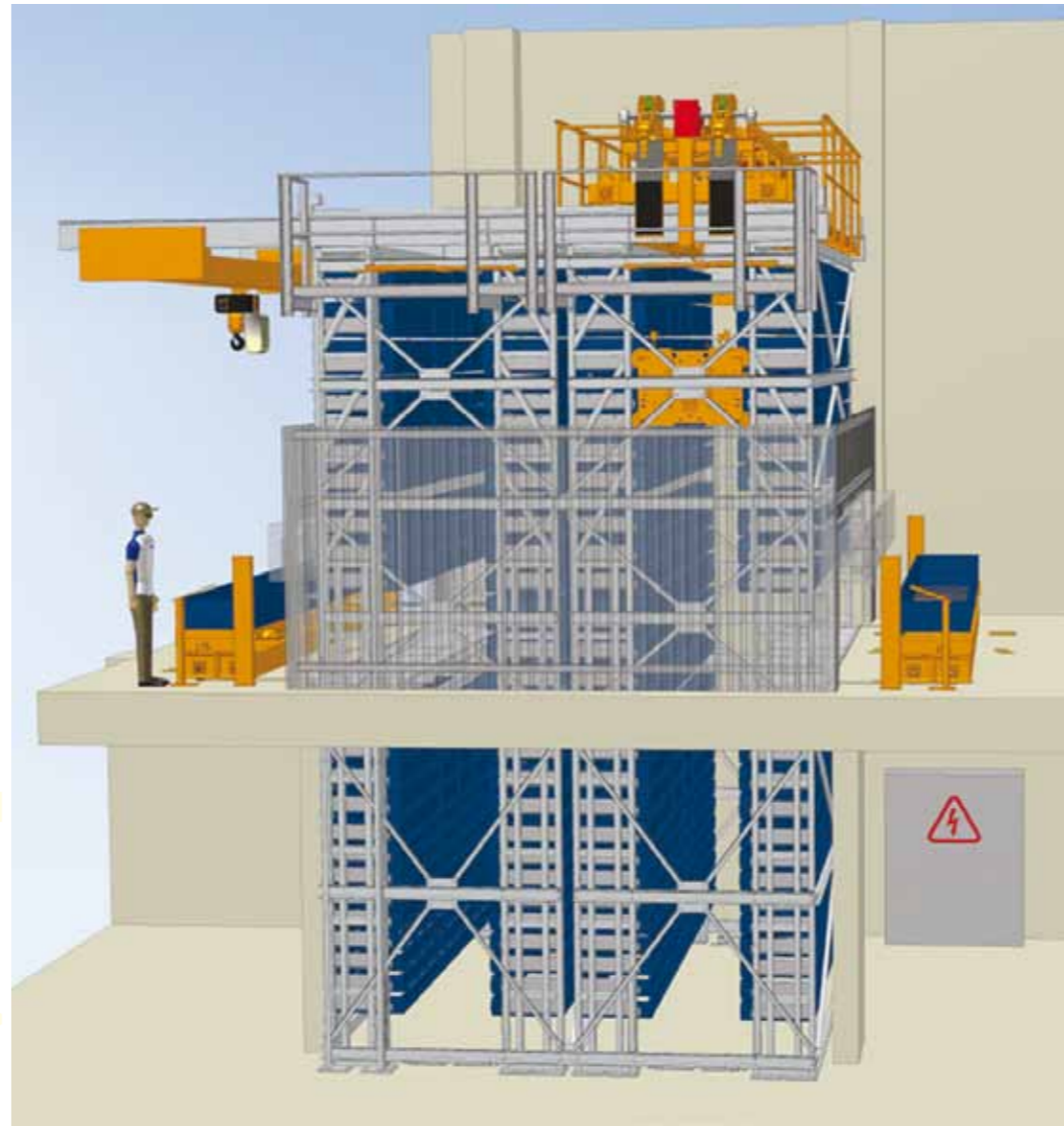
# TowerMat Heavy Duty Vertical Storage

TowerMat installed outside a building, picking from inside. Goods-in deliveries made via external access port.



Cassette for 4m x 2m sheet steel

TowerMat can be configured to meet almost any heavy storage application and to make maximum use of the most unpromising and challenging locations. Systems have been designed to provide external goods delivery with internal access, multi-level access points, in-ground construction and many other innovative concepts to wring the highest storage capacity from space available.



TowerMat two aisles, two storeys



TowerMat four frames side exit cassette



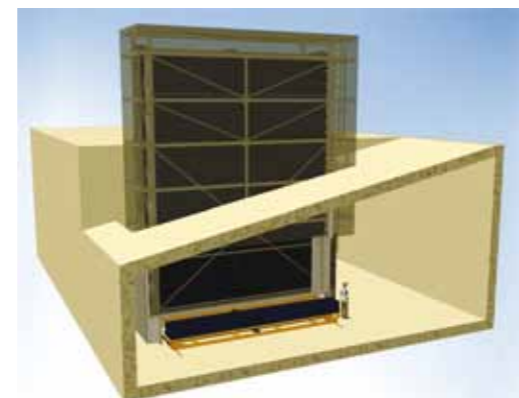
TowerMat two frames for bar storage



TowerMat four frames for bar stock



TowerMat two frames front & sideways



TowerMat through roof



TowerMat sheet two storey



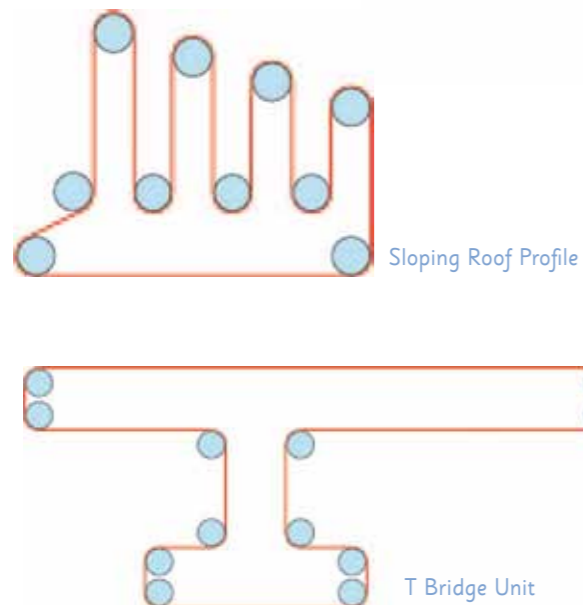
TowerMat 12 frames sideways exit

# Multi-Loop Paternosters

- **LONG, HEAVY AND AWKWARD LOADS**
- **CYLINDERS, REELS, CABLE, ROLLS & FABRICS**
- **CHALLENGING SPACES**



Mixed use with loading nose



Bridge Unit Cables



Multi Loop Paternosters are ideal for storing some of the most difficult and awkward products and materials including cable reels, cylinders, bar, tube and other long items. High-density storage carriers are presented to the operator at a comfortable ergonomic height for either manual picking or using a fork truck or overhead crane. A loading nose can present the selected product or item clear of the machine face and free of obstructions for safe, easy handling.

Steel carriers are rotated by heavy-duty chains that transport the entire complement of carriers inside a compact framework, travelling by the shortest path to the nearest access point, and making maximum use of the cube space.

Multi-Loop Paternoster installations can be configured into almost any shape or area to make effective use of space in such challenging situations such as under a sloping roof, between pillars or into deep and inaccessible corners and even between buildings. Bridge or 'T' units can free up valuable floor space while making maximum use of overhead space. Units can be manufactured in vertical or horizontal formats to fit the space available.



Stock can even be loaded from outside the building, with internal access for multi-level picking and mixed product storage. The structure can be placed fully inside, fully outside or between the two.

Able to store items up to 4,200kg and 12m in length, Single and Multi Loop Paternosters offer great storage potential in engineering and metal fabrication environments. The basic design can be produced to handle a variety of products and materials including pedestal, trough and suspended storage systems for cylinders, cable and reel holders, and mandrels for steel coil. Units for materials such as carpet and cloth can be fitted with an integral cutting table or bar.



Carpet storage



Cleanroom technology



Cable Reels



Cable drums

# Project Profiles

## UTILITIES

EDF Energy Networks uses five space-saving vertical carousel storage units in its Bury St Edmunds warehouse for parts storage in support of its field service engineers. The 4.9m high carousels provide almost half a mile (810m) of linear shelving and a total shelf space of 476m<sup>2</sup> in a machine footprint of only 40m<sup>2</sup>, sharply reducing the walking distance per item picked, with fast access to any item.



Power Engineering Services, E.ON UK, have installed a TowerMat heavy duty lift at their Coleshill premises to store bar lengths up to six metres and cut lengths in the cassettes which have a load of 5,000kg each with a payload of 140,000kg. The TowerMat has 28 cassettes to accommodate two bar height profiles up to 300mm.



The TowerMat is 6.3m high, 7.2m wide and 4.11m deep, plus a powered cart that delivers the cassettes into an access position at the front of the unit. A touch screen PC with inventory management and Biometric entry is interfaced to E.ON's SAP Host system. Bar type and dimensions are held locally and adjusted with any changes in length and quantity.

## PHARMACEUTICALS

As part of a wide-ranging solution for pharmaceutical filtration equipment manufacturer Millipore, Couzens Storage Solutions supplied a Vertical Carousel and a Modula Lift system alongside conventional pallet racking, shelving, archive storage and workbenches. The vertical unit provides 153m<sup>2</sup> of storage space in only 8.8m<sup>2</sup> and holds some 6,000 line items. The operator can call up parts required from a PC based picking list with a 30 light pick position indicator for fast, error-free picking.



Modula has 40 trays providing 81.5m<sup>2</sup> of storage with tray loads of 500kg and is used to store the larger and heavier items. Trays are presented to the operator in an external position for easy access and visibility.



## PACKAGING

An international company has installed a three loop Paternoster in its Midlands factory to store print cylinders for their range of printed packaging for their many product ranges. The InterMat has a front-loading nose to position individual cylinders for access by an overhead crane that transports them to a manufacturing station. 53 cylinders are stored in the unit in a space-saving footprint of only 15.58m<sup>2</sup>.



## MARINE MANUFACTURING

Two Horizontal Carousels have enabled luxury motor yacht manufacturer Sunseeker to cut parts stock by 25% while supporting a 50% increase in production. The Carousels are used to store high value items such as electrical goods and components, navigation systems, audio and television and sophisticated communications equipment.

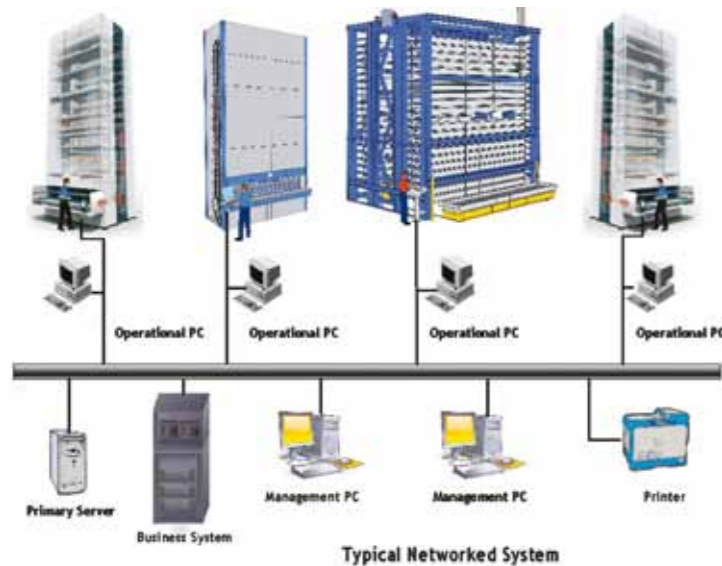
Sunseeker stores team now has the time to assemble kits and parts orders in advance and deliver them to the production line just before they are needed. Manufacturing staff do not need to leave the line, which is improving productivity, quality and delivery times.



A further six machines were installed – two vertical Carousels and four Lifts, all network linked remotely to the client's head office host system. In designing the complete storage system, Couzens also provided a space-saving mezzanine floor with an air-conditioned office, racking and shelving.

# Software

## SOFTWARE SYSTEMS FOR STOCK CONTROL AND MANAGEMENT



In cases such as picking from lists the data can be delivered directly from the MRP/ERP system and the operator simply presses a single key or scans a barcode to indicate that they have picked that item. This is automatically confirmed to the host system for updating. The result is greater efficiency and stock accuracy.

The vast majority of MRP/ERP systems have no standard facility for linking to automated storage devices and cannot therefore provide optimised picking sequences or efficient space management. Using our software as an interface between your system and the machines will provide these features – and more.

Couzens Storage Solutions has considerable experience of interfacing Carousels and Lift Systems with popular MRP systems, with standard or bespoke software modules available for all types of equipment. We are also able to provide computer hardware and accessories including bar code readers, printers and other equipment as part of a fully installed and complete turnkey package.

Our entire product range can be delivered and used with or without inventory management software. Whether you require a simple call for a storage level or pick to part number, list, description, kit or any other filter, it can be accommodated within the software system.

Our software is designed to reduce the amount of input required by the operators – and consequently eliminating much erroneous input. Information is entered only once and used by both MRP and ERP systems and the machines saving multiple entry processes and the inevitable risk of error.

### • INDIVIDUAL ITEM USAGE

Location of products in a machine or the entire stores

### • PICK FREQUENCY

Minimum and maximum stock levels

### • FREE LOCATION MATRIX

Access by individual operators to pick

All transactions are written to a date and time stamped log to provide stores management with instantly available information at the machine or on their desktop PC, allowing them to make decisions on issues such as shortages and orders.

Vertical and horizontal carousels, TowerMat and InterMat Multiloop have a call for storage level locations. PCs and software can be added at any time. Modula Vertical Lift has a touch screen PC fitted with on board software.

Security entry to the systems with Biometric entry is also available.

# Service & After Sales Support

## INSTALLATION SERVICES

Couzens Storage Solutions' trained technicians handle every aspect of delivery, installation and commissioning of the equipment and systems ordered by the client, including software and other accessories. They will also ensure that the client and designated operators are familiar with the machine's operation and functions, and are 100% satisfied that the package supplied meets their requirements.

## SERVICE & SOFTWARE SUPPORT

To ensure a lifetime of dependable service, trained and qualified service engineers are on hand to provide all the service support required to ensure years of trouble-free operation and a safe, productive working environment. Many carousels delivered and maintained by Couzens technicians are still delivering productive service some 20 years on. With practical experience of the high standards we provide, some clients have even asked Couzens technicians to take over the maintenance of other makes of machines previously purchased.

Services include full breakdown and repairs, emergency call out, remote monitoring and for clients on a full maintenance agreement, 24/7 back up.

As many types of carousel and lift are built on a modular framework we can easily adapt, extend, update and refurbish equipment originally supplied by Couzens as needs change.

## PARTS

In addition to the extensive stocks held by our suppliers we hold further back up supplies for immediate dispatch

in our Hemel Hempstead headquarters and in our service vehicles. We can also recommend on-site parts stocks for clients where relevant – for example where in-house staff are skilled and equipped to handle repairs and service tasks.

## LEGAL REQUIREMENTS

Health and Safety legislation affects almost every aspect of business and industrial operations and one of the increasingly important benefits of using Carousels and Lifts is safe and secure handling for both operators and the items stored.

In addition regular maintenance carried out by Couzens own skilled technicians ensure that users meet client responsibilities under PUWER and LOLER regulations.

## SERVICE

While we have standard service schedules that may suit many clients, others may prefer a service programme designed to meet individual needs.

## TURNKEY PROJECT MANAGEMENT

As well as designing and delivering highly productive automated storage and picking systems and software, Couzens Storage Solutions can source and integrate hardware and other items to provide a full turnkey installation ready for use.

Depending on the required specification we can provide scanners, printers, weighing machines, bar code readers and any other relevant, associated items, saving the client the need to separately source and commission additional accessories.





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COUZENS STORAGE SOLUTIONS