



WE MAKE THE WORLD MOVE

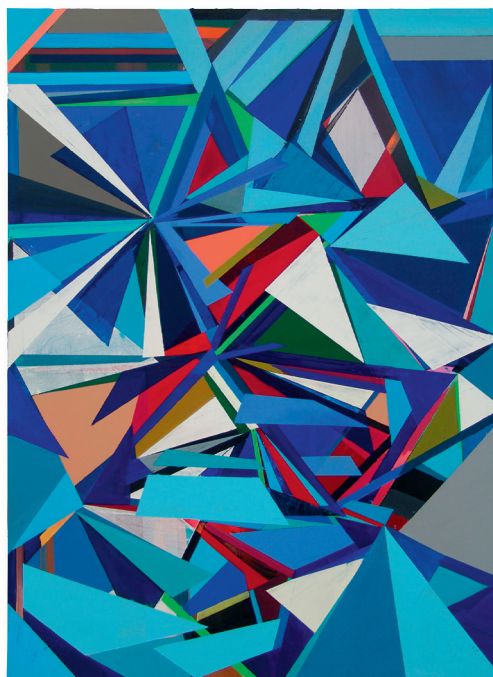


INTERROLL CARTON WHEEL FLOW CF 1212

WWW.INTERROLL.COM

INTERROLL
CORPORATE
ART

PACEMAKER FOR FAST MOVERS
COMPACT, DYNAMIC, EFFICIENT



Blue rhombus
Rebecca Michaelis

INTERROLL CORPORATE ART

At first glance, industrial products and works of art would appear to have little, if anything, in common. However, when one considers that creativity, optimisation, finetuning and the pursuit of perfection are qualities associated with both disciplines and that each project is driven initially by an idea, a moment of inspiration, a seed that requires nurturing, then one will recognise that artist and entrepreneur often share the same traits.

In combination, inspired, provocative art and innovative, state-of-the-art products provide a company with those distinctive contours, that unique cultural identity that no balance sheet, no income statement can capture.

It is precisely these intangibles, however, that have the capacity to infuse all aspects of life, lingering in the minds of staff and

capturing the imagination of the public. Art has a positive influence on the work environment and the internal processes governing these structures.

Each moment of interaction, even if controversial, generates dynamism, openness and creativity; it kindles a spark of innovation, rouses venturesome spirits and shows ways of breaking the shackles of convention and charting new territory.

The declared purpose of Interroll Corporate Art is to channel this immense creative potential, to create a dialogue that embraces art and business as vehicles of communication and to establish an environment in which the spirit of thought is allowed to flourish.

The mission: to accompany, advise and act.



Thickness
Nataly Hocke

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ART

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Consistent design from the initial concept through system integration to efficient operation: as the "Heart of Conveyor Technology and Logistics", Interroll's best-in-class solutions ensure high-performance unit load handling at every stage of material processing – power, precision, perfection.

Interroll is the most global core product provider for material handling solutions. The main industries are airport, food and beverage, parcel/postal/courier, distribution, manufacturing and healthcare.

This brochure presents the new Interroll Carton Wheel Flow CF 1212, a roller track solution offering superior benefits in the area of order picking and carton flow storage.

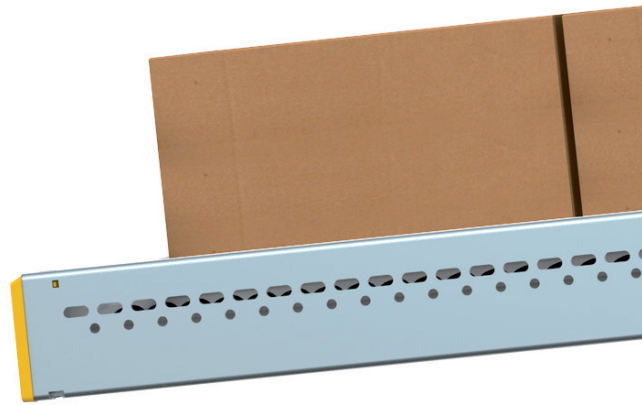
WE ARE EXPERTS IN PROVIDING POWER FREE SOLUTIONS. FOR TOTES, BOXES, CARTONS AND TRAYS.



We are definitely not the first people in history to use the advantages of sloping beds to move items around. You need only cite the building of the Pyramids or the Roman aqueducts in this respect. Something as simple as a soap box can also clearly illustrate the “energy less” principle of gravity that is all around us.

Using gravity in logistics and distribution requires experience, engineering and expertise, which we have gained over the years with our pallet flow storage.

Interroll developed a new system for materials handling and order processing for light loads. All sticking to the concept “Proven” – solid, reliable and simple.





**The main features of Interroll
Carton Wheel Flow CF 1212**

Unique wheel track

- Exceptional ease of flow and extraordinary robustness, and unique thanks to variable pitch capability between wheels within each track.
- When loaded the track profile closes on the wheel axles. This design function ensures the track never opens under load.

Unique beds

- Boltless: the installation of the beds does not require screws and, therefore, reduces installation time by up to 30 %.
- Strong loading beam: provides a rigid solution even for particularly wide shelves.
- Different models of intermediate beams: the engineering can be perfectly adapted to the load capacity and width of the bed.
- Impressive ergonomic drop out tray, even for 600 mm containers.

High compatibility and flexibility

- Universal connector:
Interroll Carton Wheel Flow can be integrated into all of the shelving systems of leading manufacturers.



KAIZEN AND CARTON WHEEL TWO PHILOSOPHIES SUPERBLY



Lean Production and Kaizen are only fully effective when appropriate structures are created for order picking and despatch at the end of an optimised workflow, such as this. “Live storage” is the key word here for modern, reliable and cost-effective distribution systems with the easy and resourceful, yet above all space-saving concept of so-called “First-In-First-Out” storage systems.

Here there is both a separate loading and unloading side.

The lanes are arranged according to product type, the containers run safely on sloping beds and move in an “energyless” manner to the picking area, where the employees pick the required goods from the containers.

In short, Interroll Carton Wheel Flow provides intralogistics enthusiasts with a distribution tool that wins them over with its technological and economical efficiency and seamlessly fits with the Kaizen philosophy.



FLOW. COMPLEMENTING EACH OTHER.

Two of the five “free delivered”

As everyone knows, the Kaizen philosophy comprises of five founding elements: Tidiness, orderliness, cleanliness, standardised clean up and discipline.

This results in faster working cycles, reduced stock holding, minimising error ratios, optimum ergonomics and eliminated waiting times.

Two of these five criteria are, as it were, “free delivered” with Carton Wheel Flow.

Tidiness (Seiri)

All of the products are allocated to specific dynamic lanes, according to their type, and can be quickly identified. By separating A articles as fast-movers and B articles as medium-movers, mistakes are more or less eliminated.

Orderliness (Seiton)

The picking area is designed in such a way that all products are clearly laid out, quickly identifiable and within each reach. This way, Carton Wheel Flow guarantees excellent availability of all products in the immediate vicinity of the picking area.

SHORT AND SWEET. BENEFITS THAT YOU SHOULD TAKE ADVANTAGE OF.

For engineers

- Optimum container flow on innovative Interroll wheel tracks with continuous steel axles
- Reduced torsion
- Compatible with Mini-load systems (loading by stacker crane)
- Boltless connections
- Ergonomically optimised picking processes

- Traceability thanks to production coding on each wheel track
- Automatic and accurate stock rotation and management based on First-In-First-Out (FIFO)
- Adaptable to Pick to light systems

For users

- Picking performance is increased by up to 65 %
- Walking distances are drastically reduced
- Space-saving of up to 35 %
- Return on investment within 2 years
- Zero energy consumption
- No maintenance costs
- Operating costs are significantly reduced
- Significantly reduced installation times as a result of boltless connections
- Easy stock control with FIFO
- Improved picking performance with Pick to Light (option)



The heavier, the better. Although, as always, there are limits here too. In any case, our profiles do grow with their work. This means that, with increasing loads, the side plates on the profile move inwards towards the wheel axle to create a rigid shape, without this affecting the smooth and quiet operation of the conveyor wheels in the slightest.

This is also the unique possibility world-wide of varying the gap between the wheels as required, so that the loads can be better distributed at critical points and the solution can be sold at the right price.

On the one hand this is possible thanks to the geometry of the track profile and, on the other hand, thanks to our special machines that we have had built so that we can produce this extraordinary static and flexible wheel spacing.

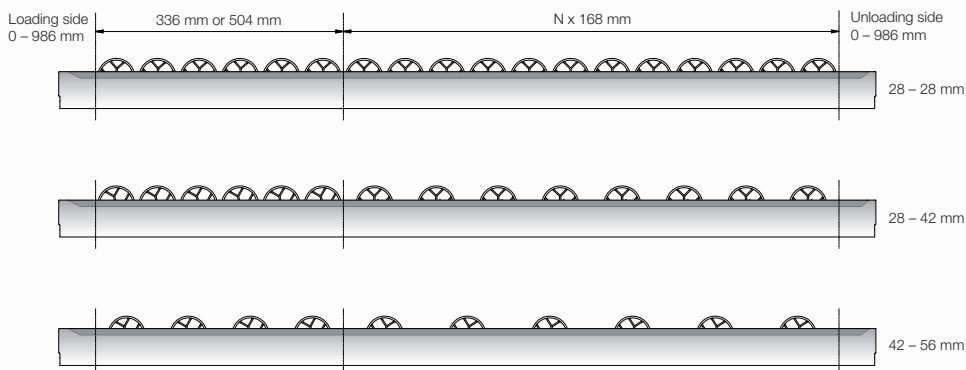
Technical properties of the Interroll wheel track

- Variable wheel pitch in the wheel track.
- Load-dependent closing of the profile
- Outstanding torsion-free stability
- Temperature operating ranges
-28° C to 40° C
- Length from 196 mm to 5,500 mm

THE NEW TRACK SH EVEN MORE IMPR

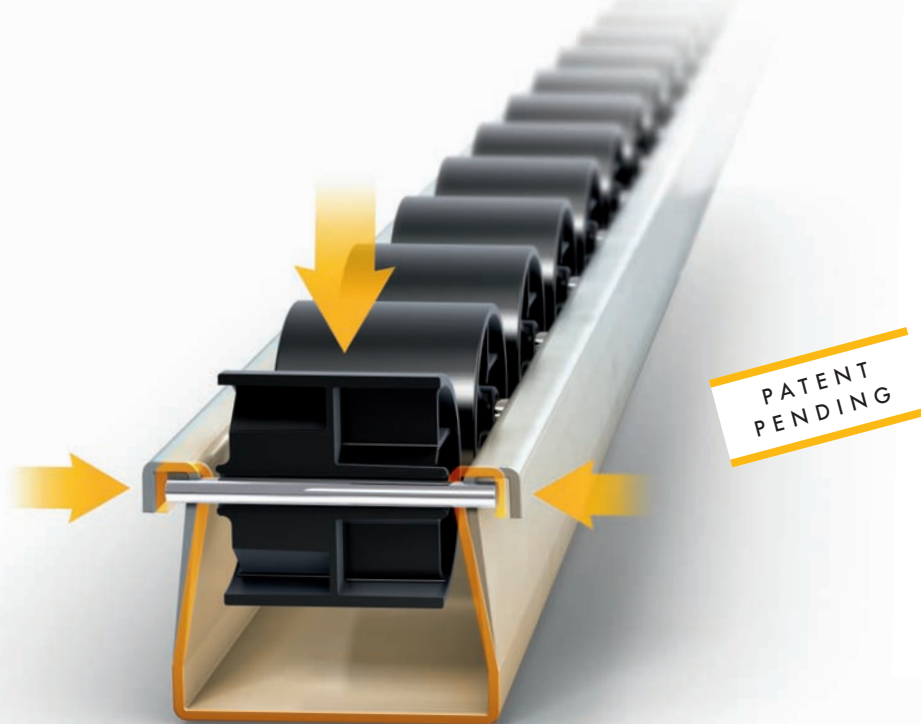


OUR STANDARD MODELS:



This is the pitch that is needed

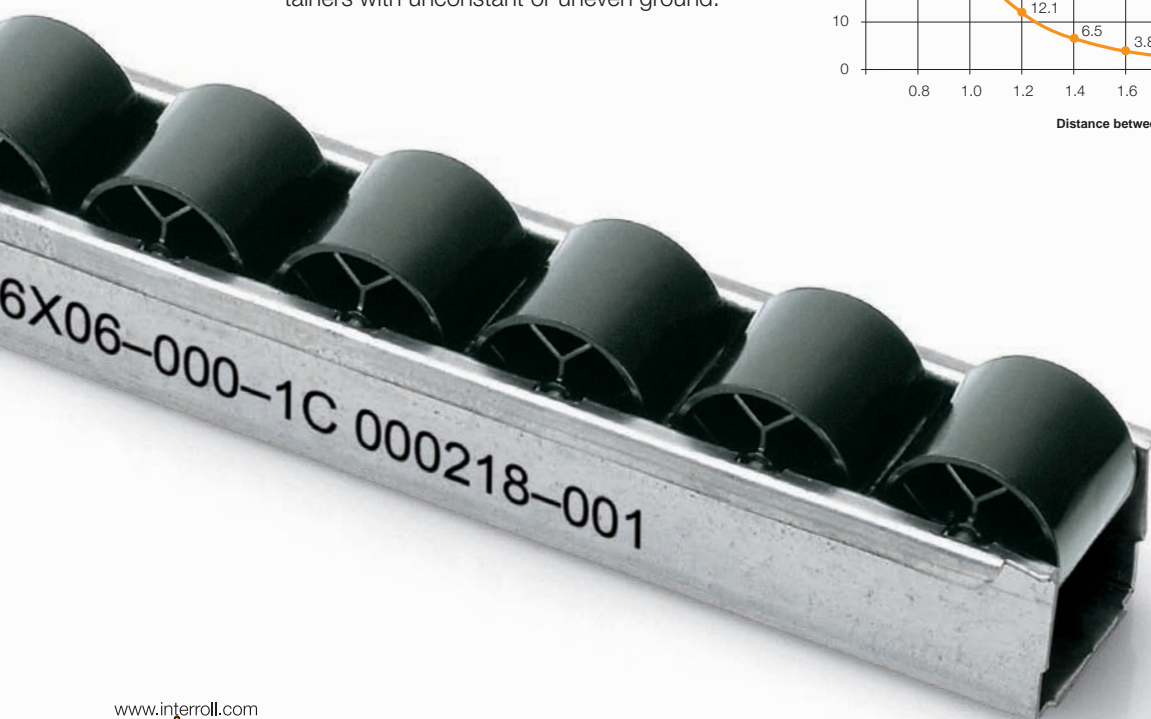
Interroll is the only company in the world to offer variable wheel pitch on one wheel track. The advantage of this configuration is that the loading side, which has to withstand the heavier loads, has greater strength thanks to the narrower configuration of the wheels. The loading side can be set up with a 28 mm or 42 mm spacing depending on weight of the containers.



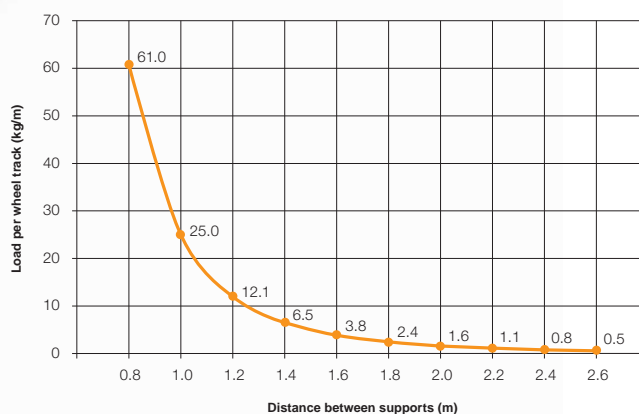
OWS ITS PROFILE.
ESSIVE WITH HEAVY LOADS.



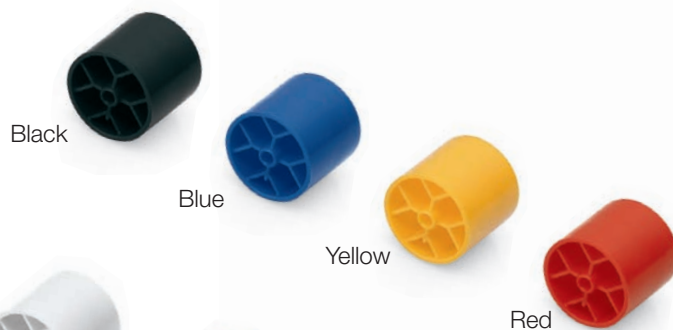
Staggered arrangement of the tracks
This option facilitates the restarting of containers with unconstant or uneven ground.



LOAD PER WHEEL TRACK



Standard



Optional



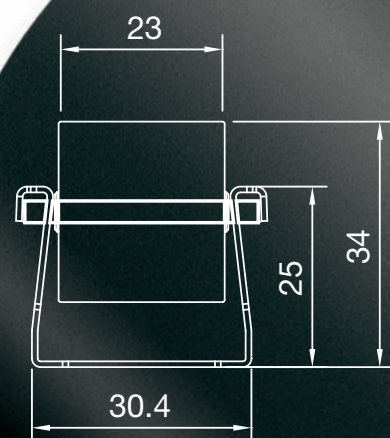
Interplay of colours

The effect of colour is a very complex matter. Of course, there are more emotions than there are colours and conversely, we link each colour to a different emotion, association and even an experience or signal. This brings us to our very special subject. We offer four colours as standard and two as option at any one time. This can be used to express your corporate identity, to brighten up your workplace or as colour coding within your picking operation. This enables you to combine something beneficial with something that looks good all in one.

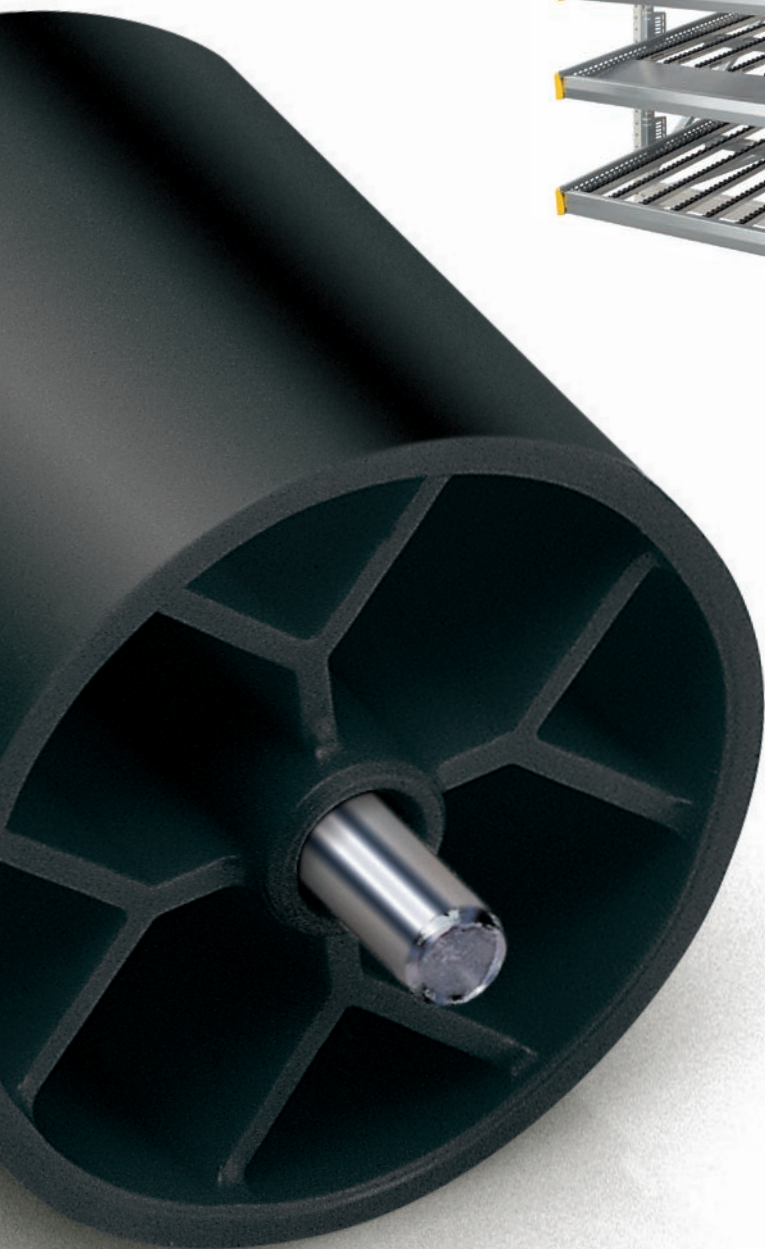
Interplay on wheels

Our wheels have got what it takes. Their precision injection-moulding ensures precise tracking of the goods and the high density polyethylene copes with nearly everything that may come your way in terms of storage and transportation. The extremely stable steel axle remains firmly connected to the profile and effortlessly supports the wheels under moving loads.

And, as experience often shows, these are not always light weights.



WE SHOW OUR TRUE COLOURS. AND ATTACH GREAT IMPORTANCE



Technical properties of the Interroll wheel track

- Load per wheel: 10 kg
- Highly durable, impact-resistant 3 mm steel axles throughout
- Secure casing for the axle in the profile's exterior flanks
- Robust high-density polyethylene (HDPE)
- Reliable, flow of goods without deviation
- Four standard colours

Options

- Two optional colours
- Brake clip: reduces the speed of heavy containers or delicate items at the picking location.
- Back stop: For use with automated storage and retrieval systems (Mini-load system). This reliably prevents goods from falling out at the loading area, in case the operator pushes the box to the behind.

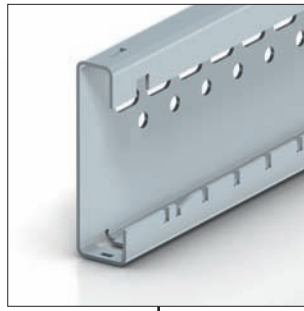


Brake clip



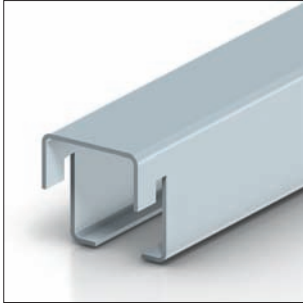
Back stop

TO THE STRENGTH OF OUR AXLES.



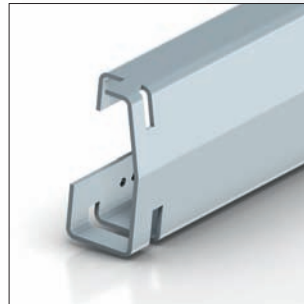
Side member

Designed for fixing without screws to the loading and unloading beams



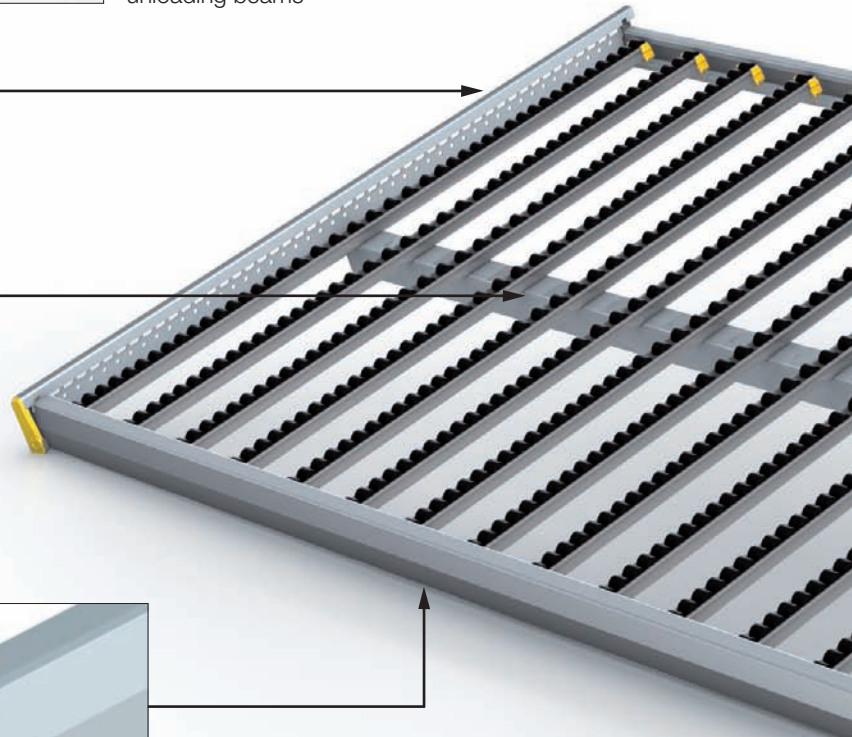
Intermediate beam

Installed without screws, different models to match different weights as best as possible



Unloading beam

The reinforced profile allows for particularly wide beds

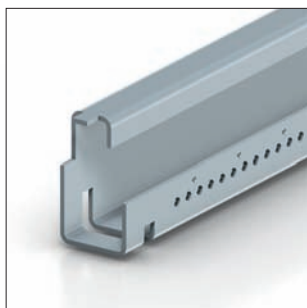


SNAP IN INSTEAD OF GET WE LET THE OTHERS WOR

Fastner's are a tricky business. Especially when the parts to be joined are crooked. So before you get all snappy, use this snap-in system instead. Convenient, accurate, safe and above all quick. The assembly of our Interroll beds without screws is 30 % quicker to install as a matter of course. One pleasing benefit that should take the pressure off your budget.

Installing Interroll beds

- Easy and quick to install
- 30 % shorter installation times
- Extremely low error ratios
- Only one person is needed for installation
- No tools are required
- Minimum number of fixing components



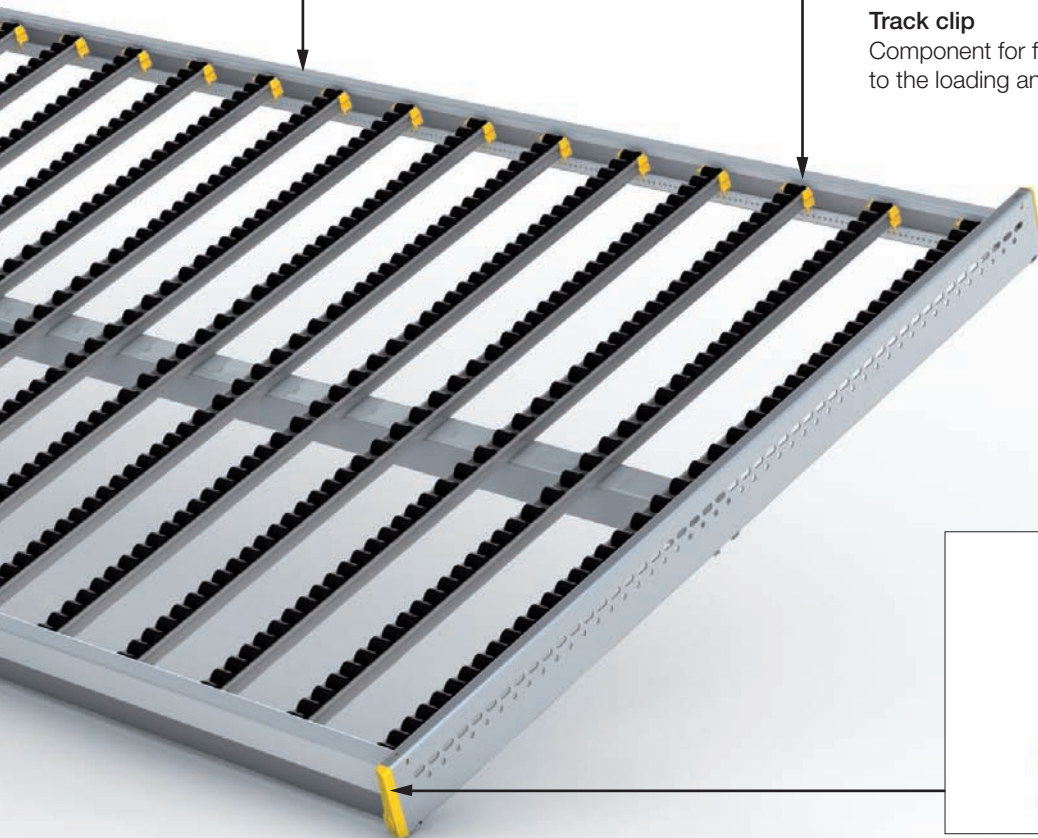
Loading beam

The reinforced entry profile allows for particularly wide beds. Alternate option available for LIFO solutions



Track clip

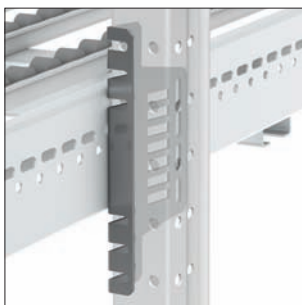
Component for fixing the Interroll wheel tracks to the loading and unloading beam



End cap

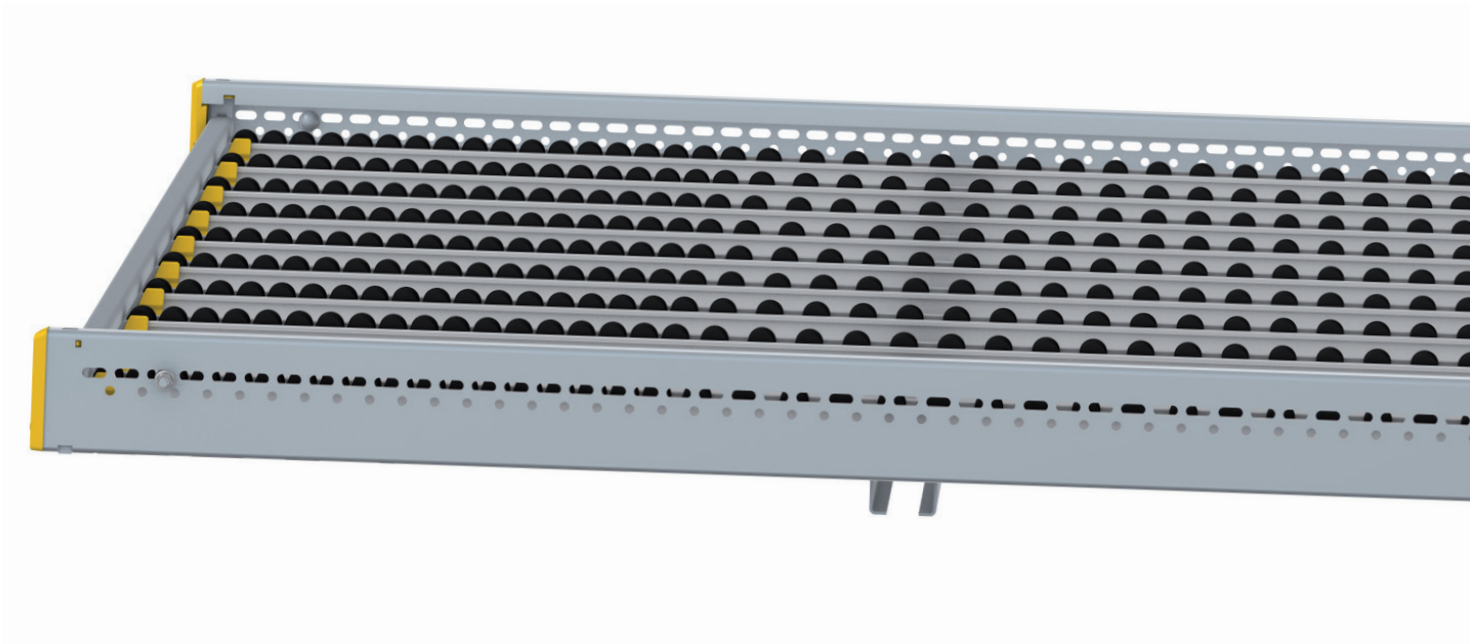
Component to protect against section damage as well as a connection between the loading and unloading beams and the side members

TING SNAPPY. K WITH SCREWS.



Universal connector

To secure the beds to all current types of static shelving



FIRST-IN-FIRST-OUT AT ALL LEVELS



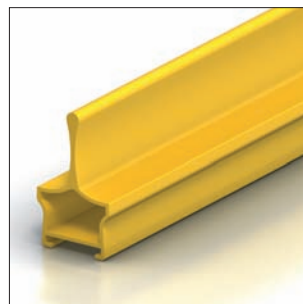
Entry guide

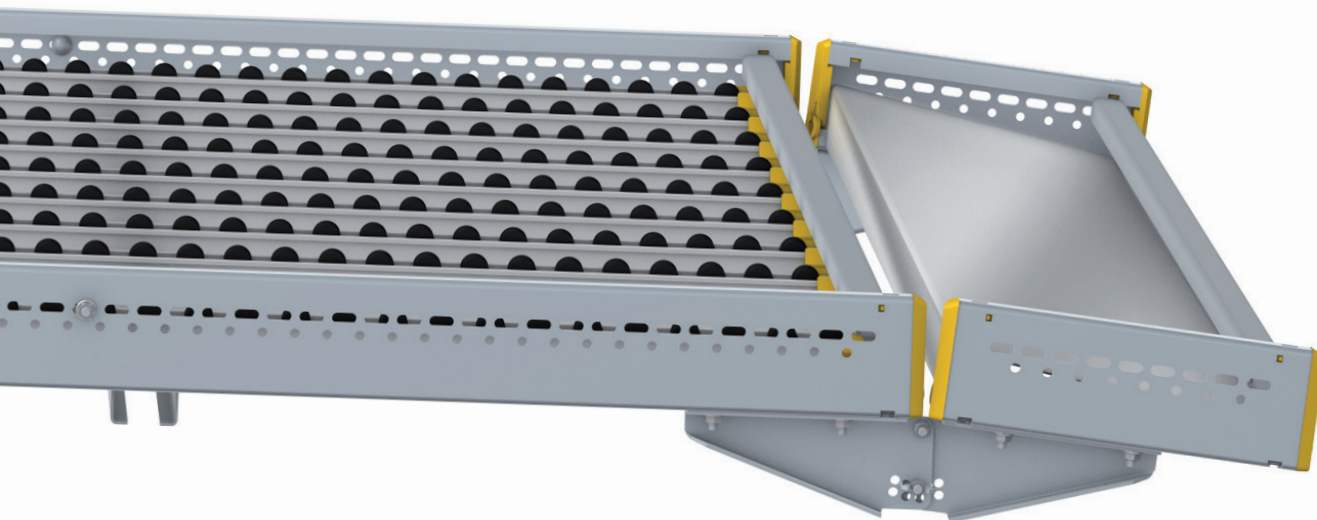
The order picker is reliably aided by these guide components when loading the wheel track with cartons and containers in line with the lane



Full length guide

Components for ensuring directional stability of the container flow

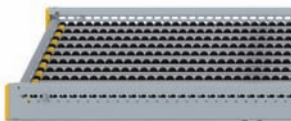




VELS WE ARE PULLING OUT ALL

LOADING

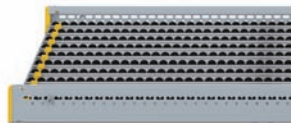
Standard
(Loading Regular) LF



With Loading Plate



Loading with
Stacker Crane LS



UNLOADING

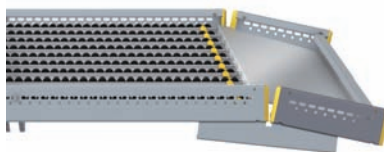
Standard
(Unloading Regular) UR



Unloading with 5 degree
inclined drop out tray U05



Unloading with 15 degree
inclined drop out tray for
400 mm long containers
U15-400



Unloading with 15 degree
inclined drop out tray for
600 mm long containers
U15-600



Unloading with adjustable
drop out tray tray UAD
Adjustment range: 6, 11, 17,
22, 28, 34 degrees



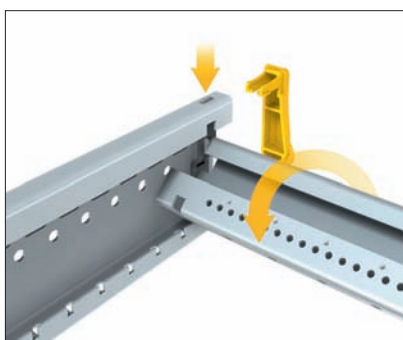
We have already discussed the advantages of the FIFO principle. Shorter picking times, space-saving, “energyless” moving of goods, allocation by product sort, error-free picking are all achieved with a separate feed-in and picking section for each shelving unit.

Whilst we are still on this subject:

The greater the range of containers to be stocked and the stocking methods themselves, the larger the range of components and modules that are required for this. The same applies to the opposite side, the picking area with its individually assigned picking areas and ergonomic

peculiarities. In short, we have a customised solution to meet any stocking logistics system, any container type and any picking process with components and modules that are optimised in terms of function and ergonomics.

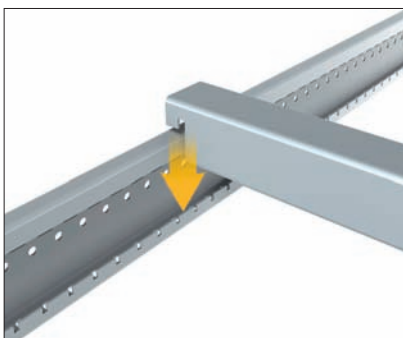
THE STOPS TO ACHIEVE THIS.



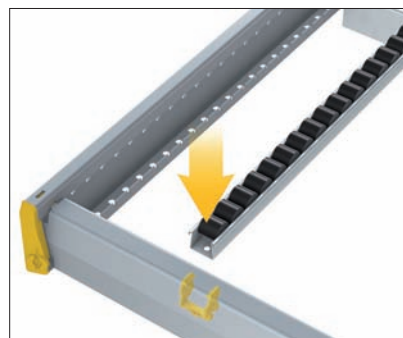
Loading beam



Unloading beam



Intermediate beam



Wheel track with fixing clip



1. Installation of side profiles



2. Installation of loading/
unloading beams



3. Installation of intermediate
beams



4. Installation of wheel tracks
and options



Carton Wheel Flow with end stop

Best suited for picking complete boxes and cartons.



Carton Wheel Flow with inclined drop out tray from 5 to 15 degrees

Ideal for picking individual products from boxes and cartons. This particularly ergonomic set-up offers a better picking posture combined with a minimal error ratio.

Manual picking requires by its nature both individual and ergonomic concepts and solutions. Interroll's innovative Carton Wheel Flow CF 1212 components open up all sectors of industry to unlimited possibilities for creating both the physical and logistical ultimate in design of customized picking areas.

Over and above the conveyors systems, feed systems like Mini-load and the convenient Pick to Light technology we can also provide you with a system, which will allow you to deal with all picking situations cost-effectively. Some examples shown on these pages are able to illustrate this.

YOU



Carton Wheel Flow combined with picking lane

This combination is best suited to different fast-moving products. Small quantities are picked from beds; complete units are taken from pallets.

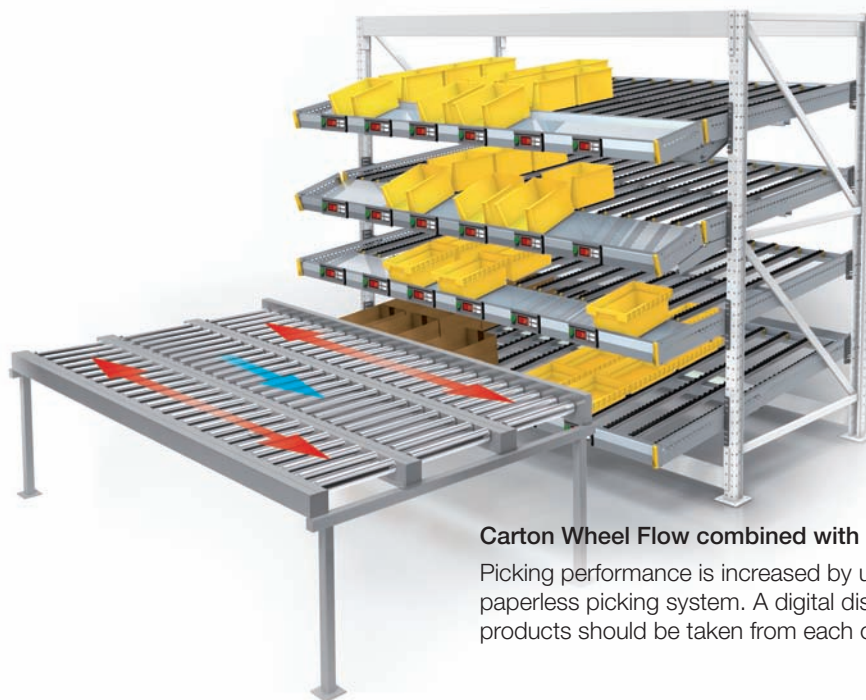


Carton V storage

If space is limited, beds can be used for the production of the shortest picking path. Moreover, for stock



cartons.
ing angle



Carton Wheel Flow combined with Pick to Light

Picking performance is increased by up to 50 % with this paperless picking system. A digital display signals how many products should be taken from each channel.

BUILD WHAT YOU WANT. WE H



Wheel Flow incorporated into a pallet flow system

is limited, the picking tunnel with Carton Wheel Flow can be integrated into the flow storage block. This way, products are available by First-In-First-Out (FIFO) via the route without any breakdown in the cycle. For, the flow storage channels provide ample volume of palletised products.



Carton Wheel Flow with simple face buffer

Pallets with goods are stored on top of Carton Wheel Flow bays for replenishment of lanes.





Carton Wheel Flow with integrated horizontal and driven conveyor

After the picking process, the picking container is pushed to the rear driven conveyor and thus moves to the next picking area or to despatch. There are also Carton Wheel Flow systems with separate (non-integrated) conveyors. This is displayed by the illustration on the left.



Carton Wheel Flow with horizontal non-driven conveyor

Ideal for picking small parts.

AVE WHAT YOU NEED.



Carton Wheel Flow in combination with Last-In-First-Out (LIFO) pallet flow storage.

This solution works well when space is at a premium. A pallet flow storage system is installed in the higher levels, which can be fed and picked from on the basis of the LIFO principle. Conventional pallet racking can be incorporated instead of LIFO technology.



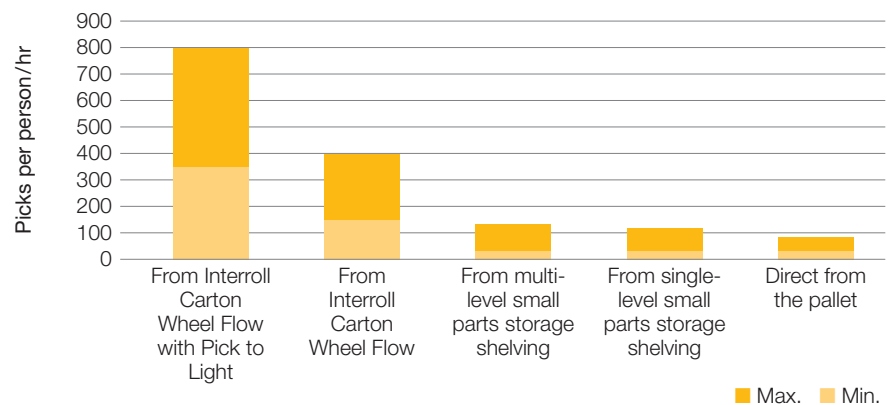
Carton Wheel Flow combined with a Mini-load system

The system allows loading with a fully automated stacker crane. Replenishment of channels is done by full units (full boxes or cartons).



FAST-MOVING PRODUCTS A CARTON WHEEL FLOW

MANUAL PICKING METHODS



Interroll Carton Wheel Flow performs outstandingly

It goes without saying that good picking performance will dramatically reduce logistics costs.

Carton Wheel Flow is far superior to traditional manual picking systems, as current statistics clearly confirm.

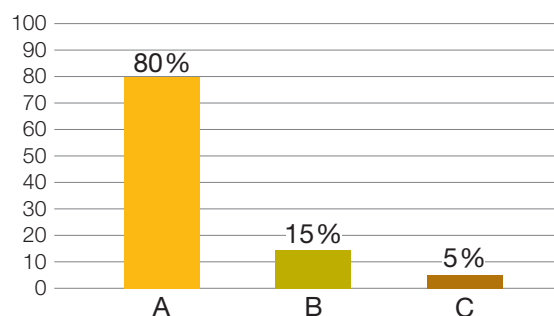


RE IN A HURRY. ENSURES THAT THEY MOVE.

Carton Wheel Flow with the highest throughput rates

The handling of products determines the access frequency and storage solution. In general a differentiation is made between A, B and C products, the access frequency of which is determined by Pareto analysis.

PARETO ANALYSIS



“A” stands for 75 % to 80 % of the total stock movement. These are fast-moving items with 1 to 14 days stockholding.

“A” + “B” stands for 90 % to 95 % of the total stock movement. B products are medium-moving items with 15 to 30 days stockholding.

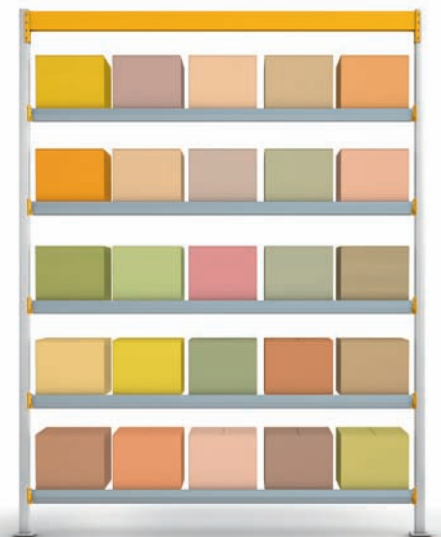
“A”, “B” and “C” stand for 100 % of the total stock movement. C products are slow-moving items with over 30 days stockholding.

Interroll Carton Wheel Flow CF 1212 reduces picking distances, increases picking performance per person and per hour and provides improved stockholding within the same amount of space. That creates room for additional projects and more money for future investments or simply helps you to save with a view to achieving a competitive edge. How this squaring of the circle is possible is clearly illustrated by the diagrams on this page without the need for much in the way of explanation.



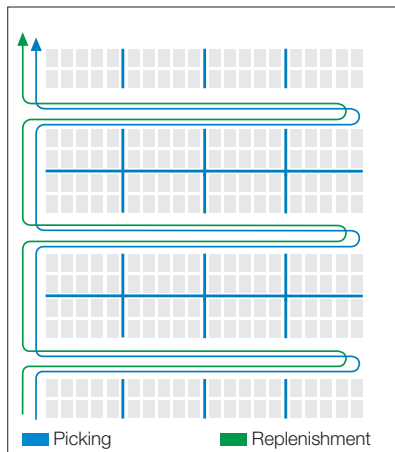
The channels, which carry only one product, ensure with their “single item” loads that there are no picking errors and, at the same time, ensure optimum stock control as each product can be visually correctly identified.

TIME AND SPACE MEAN HARD CASH. CARTON WHEEL FLOW HELPS TO MAKE SUBSTANTIAL

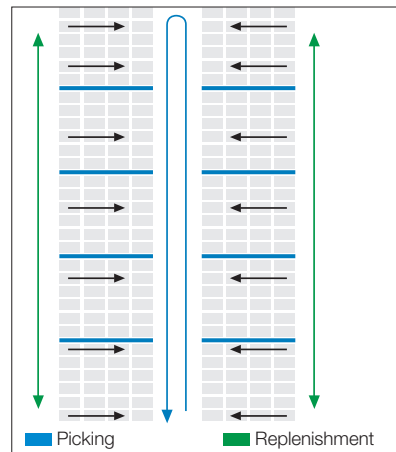


The pallet racking on the left stocks 6 pallets, that is to say 6 different products. Within the same floor area, Carton Wheel Flow racking on the right stocks 25 articles on five levels. Therefore, 19 more can be picked than from a conventional pallet rack.

SMALL PARTS STORAGE SHELVING



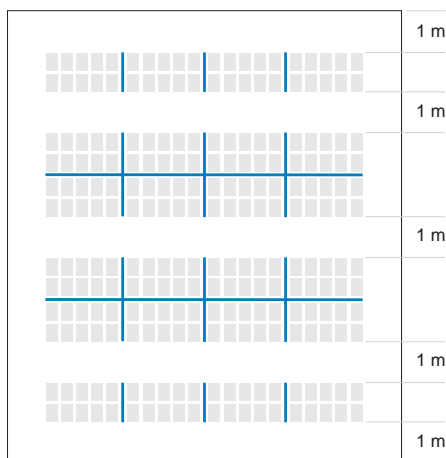
INTERROLL CARTON WHEEL FLOW



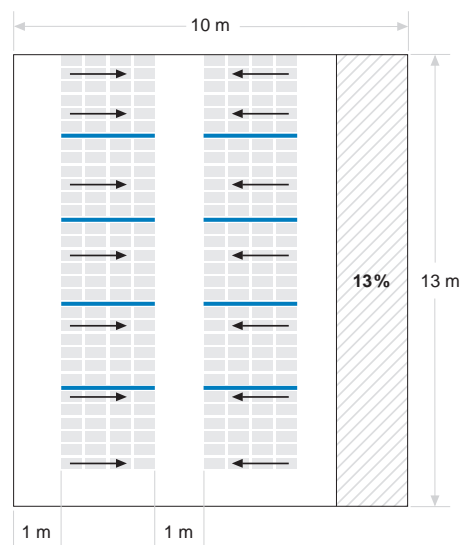
• Reduction of walking time*:

In the example on the left, picking through the whole shelving system equals to a walking distance of 60 metres. With Carton Wheel Flow, walking distance is reduced to only 27 metres, allowing a reduction of walking time from 40 % to 50 %.

SMALL PARTS STORAGE SHELVING



INTERROLL CARTON WHEEL FLOW



• Space saving*

In the example above, surface required for shelving system is 130 square metres. With Carton Wheel Flow, it is reduced to 113 square metres, which equates to a 13 % space saving.

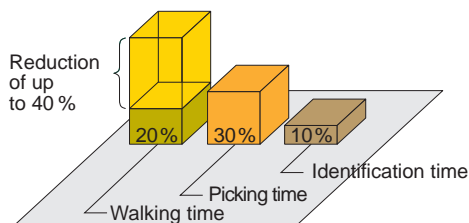
• Energy saving

Gravity is a free source of the energy, which we need to move your loads. Carton Wheel Flow beds are installed with a light and well balanced slope and ensure the homogenous material flow from the loading to the unloading side.

• Reduction of picking mistakes

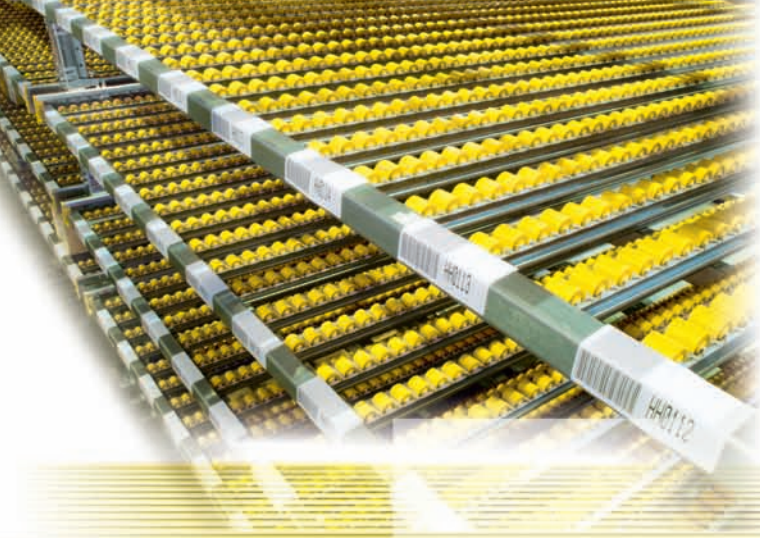
As one channel corresponds to one reference and therefore each item is at the right place, stock controls are superfluous and picking mistakes are dramatically reduced.

* Number of references and articles are the same in both solutions.



Saving time

SAVINGS.



There are many good reasons, why the following companies opted for a Carton Wheel Flow picking system. The technical features and economical advantages have already been described. That is one side of the coin. It is important for us to have an in-depth discussion with you with particular emphasis on workflow analysis. Then, when all details

EXAMPLE: MEDIA

EB GAMES IN MALMÖ, SWEDEN

- Project: New distribution centre.
 Products: Fast-moving interactive games
 Requirements: Improved picking performance
 Increased competitiveness.
 Solution: Interroll Carton Wheel Flow with 2,380 container spaces on 180 beds each with 28 integrated wheel tracks.
 For dynamic storage of 1,600 to 1,800 products.
 Advantages: 50 % higher picking performance; optimised Time-to-market process.



CARTON WHEEL FLOW COMES

EXAMPLE: COSMETICS

L'OREAL IN GAUTENG, SOUTH AFRICA

- Project: Optimisation of the picking systems.
 Products: Fast-moving cosmetic products like lipsticks, fragrances, shampoos, etc.
 Requirements: 30 % higher picking performance, 40 % improvement in usage of space.
 Solution: Interroll Carton Wheel Flow with 22 stock areas and 880 picking positions.
 Rack depths of 1.3 m and 2.3 m. Load capacity 500 kg and 900 kg.
 Advantages: 30 % higher picking performance; 40 % space-saving.



have been carefully agreed, we work out a concept that we can customise specifically for your intralogistics operation. We do not simply concern ourselves with the picking process but also with the peripheral dynamic pallet storage and product supply. We come highly recommended with the references cited below:

EXAMPLE: FOODSTUFFS

EDEKA IN BALINGEN, GERMANY

- Project:** Expansion of an existing distribution centre.
- Products:** Fast-moving dry foodstuffs (i.e. yoghurt, cream products and tinned food).
- Requirements:** Improved efficiency in product handling and storage of deeper products, improved picking performance.
- Solution:** Interroll Carton Wheel Flow with 135 beds (screwed into pallet racking frames), each 5 m deep and 2.7 m wide, with 5 % inclined picking positions. 44 wheel tracks per bed, laid as a carpet (without guide tracks). 500 mm long special position adaptor (REMA TEC solution) on the feed-in side.
- Advantages:** Efficient mapping of smaller quantities, doubling of the picking performance, optimal combination of conveyor technology, separation, restocking and picking.



WITH GLOWING REFERENCES.

EXAMPLE: FASHION

CORTEFIEL IN MADRID, SPAIN

- Project:** New distribution centre.
- Products:** Fast-moving emerging textile collections.
- Requirements:** Replenish the products on pallets every 2 weeks. Optimum product distribution to 1,255 subsidiaries in 47 countries.
- Solution:** Interroll Carton Wheel Flow with 2,704 beds. Part of the centre with pick by light technology and conveyor systems. 16,200 pallet locations for product supply.
- Advantages:** Significant increase in picking performance due to the combination of Interroll Carton Wheel Flow / conveyors.





EXAMPLE: HEATING AND GAS INDUSTRY

OEG IN HESSISCH OLDENDORF, GERMANY

- Project:** Extension of central warehouse.
- Products:** Components for the heating, electrical, plumbing and installation industries.
- Requirements:** Immediate order dispatch and delivery the following working day
- Solution:** Interroll Carton Wheel Flow in a "fast picking zone": two-storey flow racking system with a total of 20 picking stations and associated filling sections.
SKUs: plastic containers (800 x 600 mm conveyed length-wise, 600 x 400 mm conveyed crosswise)
- Advantages:** Optimised picking performance, minimised throughput times thanks to fully automatic storage workflows, no processing errors.



EXAMPLE: AUTOMOTIVE INDUSTRY

MG MOTOR IN BRIMINGHAM, UNITED KINGDOM

- Project:** Renovation of the distribution centre.
- Products:** Automotive parts.
- Requirements:** General store for spares.
- Solution:** A quantity of 176 Interroll Carton Wheel Flow CF1212 LR/UR type, beds with 12 tracks and full length guides.
- Advantages:** Maximised space utilisation, higher concentration of small parts ready for line-side picking, increased accuracy and productivity, optimised picking process and ergonomics.





EXAMPLE: FOOD DISTRIBUTION

EATALY DISTRIBUTIONS SRL,
ITALY

- Project: New distribution centre.
Products: Food and beverage articles.
Requirements: High logistic efficiency, just-in-time supply; exploitation of warehouse height.
Solution: Interroll Carton Wheel Flow with 126 beds of 2,700 x 2,292 mm (capacity until max. 700 kg) – 33 roller tracks each bed – and 18 beds of 1,800 x 2,292 mm (capacity until 500 kg) – 22 roller tracks each bed. Weight of SKUs ranges from 1.5 to 20 kg.
Advantages: Efficient storage and distribution in FIFO configuration; storage capacity increased by 60-70 %; considerable increase of order processing; radio frequency control; no human mistake.

