

PRODUCT PORTFOLIO

twi



Success through innovation

The logistics market calls for innovative ideas and methods. For more than 25 years TWI has set the standards with its picking systems for press and tobacco distribution, returns processing and as a pioneer in the field of logistic master plans. TWI has proved itself to be the partner of choice for the most demanding picking and logistics tasks. As recognition of this success we have been honoured with the German Innovation Prize and the Axel Springer Golden Distribution Award.

How does a medium-sized independent German company develop into one of the foremost suppliers in the field of distribution? The key to our success has been the ability to identify with the needs of our customers and to work as partners in the creation of innovative, flexible and reliable systems that offer lasting competitive advantages. As a member of Distripress we have a world-wide customer base.



Focus on our customers

We offer a one-stop package for consulting, continuous product development, high-quality production and reliable service. For the entire service life of our systems we remain partner to our customers. TWI works continuously to optimise existing systems and create new solutions based on our deep knowledge about the needs of our partners. The outstanding functionality of our high-tech systems is matched by their modern design. The in-house development of both software and hardware components allows us to maximize efficiency over all areas of the logistic process. Our commitment and expertise ensures the realization of high quality products and services. This is our task – for today and for the future.

Overview on TWI systems

Productivity and quality are the main elements in distribution. To manage increasing process complexity our key priority is to concentrate always on the overall view.

TWI offers systems for picking and packing as well as returns processing and track & trace. Not only do we have a deep understanding of the technology, we also speak the same language as our customers.

Processes in the warehouse

Order picking



TWI systems take care of many processes in the warehouse: e.g. Goods-in and preparation for picking at the press wholesaler and the connection to the Host system. A press wholesaler warehouse never sleeps, therefore 24h service from TWI, in combination with the 5-minute-rule, is essential.

Rapid, error free picking with the fast line TOP or single worker picking. All products and their accompanying data are prepared perfectly for the delivery to the retailer.

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AERO page 10 – 13



HIT System

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TWI200 Express

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TALOS page 14 – 15

A track & trace system between warehouse and point of sale, which ensures precise management of drop sequences while providing a constant overview of correct delivery. Drivers are guided by voice to the retailer's premises, based on GPS data, installed inside the HIT Handy.

TWI200 Express allows you to automate processes like crediting and sorting returns, for example with single work units for returns processing resulting in top quality and high productivity.



WINPICK page 16 – 17

TOP Picking Line



- TOP is the most successful picking line worldwide, working with open stacks as well as boxes
- TOP line offers high productivity as well as high picking quality
- TOP is reliable due to the 5-minutes-rule and provides an ergonomic and efficient working environment
- TOP is flexible regarding the daily volumes, number of titles and future changes of the configuration

The following features make TOP the fastest picking line world-wide, providing top packing quality and ensuring a quick ROI.

- > Open magazines or totes, or even both in the same dispatch, move on a buffered picking line, TOP allows the simultaneous packing of titles of any size, from paperbacks to the biggest newspapers, into totes or open stacks. This is also true for other products like books, toys, tobacco and other FMCG (Fast moving consumer goods)
- > TOP enables the start of new packages at any point along the picking line. The picking line's transport load is free of empty bundles, normally required to maintain the proper route sequence. This particular transport technique, called fly-by-birth is the reason for our outstanding productivity.
- > Smooth drive systems move the open stacks quickly and ergonomically to the picking person. Bundles never collide and always stop exactly where copies must be added.
- > The delivery note is printed on-line at the end of the picking process. This guarantees that the content of the note is exactly correct.
- > The TOP line is modular: it is built in 2m sections, each with at least 16 displays. Its length will be configured based on your requirements, e.g. number of titles in a dispatch. The number of titles in each zone for a picker is flexible for each single dispatch. So you will work with just the personnel needed for this dispatch.

- > Use one TOP picking line as if you have two lines and double your output: The picking line is extremely adaptable. When packing magazines the whole line is used; with the bundles moving through all the displays towards a high speed strapping machine. When packing newspapers the picking line is driven in two directions, with strapping machines at both ends.
- > Picking lines must be reliable. Our modular approach means that if a

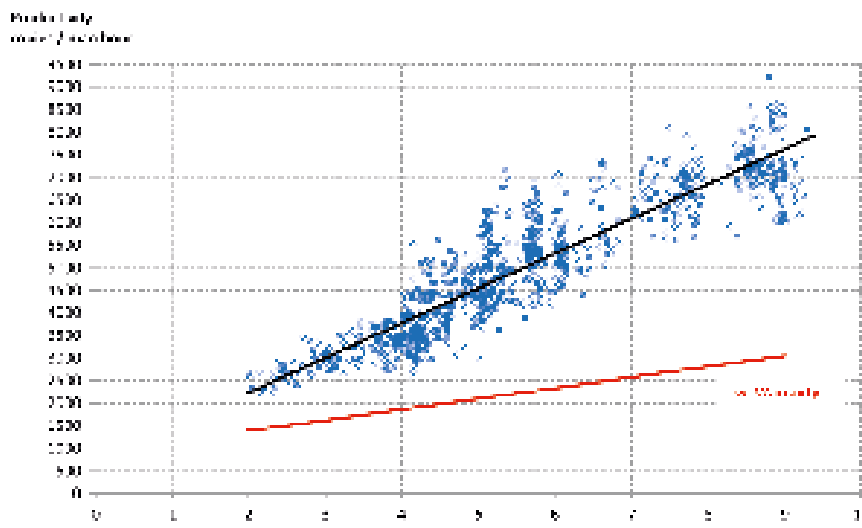
breakdown occurs a part can easily be replaced in just 5 minutes without tools and by semi-skilled workers. Systems are delivered with a set of spare parts and with built in redundancy for sensors and actuators to prevent complete stoppages. We are proud that none of our customers has ever had to cancel a dispatch.

- > Made of aluminium the whole system is based on a sturdy frame, specially designed for tough warehouse use. The TOP-system is assembled from 2

meter sections, first tested at TWI before being installed by us at our customer. The installation just takes a few hours and if you wish, we can do it during the weekend so your usual working processes are not interrupted.

- > Totes as well as bundles are monitored during the picking process. This acts as the database for a track and trace system and a perfectly integrated tote asset management system – the HIT-system (see page 16–17).

Productivity in magazine dispatch



Customer data

Average productivity in magazine despatch:

4.408 copies / man hour

4,72 copies / pick

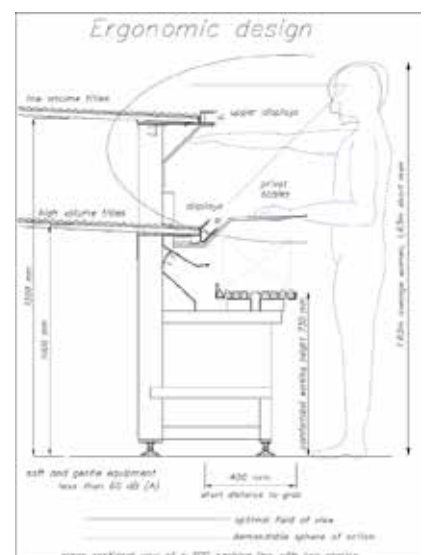
each blue square represents the characteristic data of one despatch

Picking rate
copies / pick

Excellent ergonomics, low energy consumption

The picking line's basic height meets ergonomic demands. Arms remain relaxed and backs straight when placing stacks onto the picking line. The transport of the goods is both very quiet and energy efficient because of the buffered picking line and integrated energy saving lamps. TOP significantly reduces your energy costs: A 20 meter TOP with laser printer needs just 4,8 kWh. This is approximately less than one Euro per hour, inclusive compressed air costs.

Recyclability is also an important design criteria. TOP as well as AERO, TWI200 and TALOS use materials which can be 98 % recycled.



Useful accessories for your TOP system



Carriages are mounted on a rail that runs under the normal flow rack. This means that high volume titles can be stored safely and securely, yet are quickly available to replenish the picking line.



Replenish displays at the rear of TOP show the title which has to be set up in this channel, for both the upper and the lower rack. The amount of copies will be shown as well. More information can be shown if required.



Displays with large LED's control the workflow. With optimal positioning directly at the title shelf large LED figures indicate how many copies need to be picked. When the acknowledgement button is pressed the next order immediately appears. With our **Blue Light** strategy it is possible to work on bundles that are still in a neighbouring pick zone which allows a much faster workflow, especially in situations with widely varying customer bundles in a single tour.

Zone check: To increase picking quality, especially for untrained pickers, we have developed the zone check system. A special set of scales checks the weight in each picking zone



Delivery note printer and dispenser

As soon as a bundle has received its last title, the delivery notes and other paperwork like return notes are printed online by two high-speed printers positioned at the end of the picking line. They are then automatically added to the right bundle by an automatic dispenser. Delivery notes can be printed with any customer defined layout.

If you use totes we can integrate a tote labelling system at the end of the TOP line either gluing labels onto the bundles or with paper labels that are slipped into a little window at the rim of the tote.



Quality check with final scales and automatic pusher

At the end of the TOP line the final scales checks every bundle or tote. After this, the delivery note is put onto the bundle and it then passes through the strapping

machine. The pusher receives the information from the scales as to whether the weight of the bundle is correct. If the bundle is correct, it moves straight on. If it is wrong, the pusher pushes it to the side. A member of the staff checks the bundle with the delivery note and makes any necessary corrections. Afterwards the bundle is strapped and repositioned in its correct place in the delivery. All incorrect bundles are identified, checked and corrected.



A bundle with the correct weight moves straight on.



The pusher elevates and pushes the bundle with the wrong weight sideways.

Third display level

Increase the number of titles for the TOP line with a 3rd display level underneath the TOP conveyor. Ideal for low volume titles and SBR titles. For example: at a 18m TOP line it increases the maximum number of displays from 128 to 156 without prolongation of the TOP line.

Advantages

Control station

The control station is situated behind the pusher to control the bundles that have been pushed out with the wrong weight. Your advantage: 100% correct bundles are leaving your warehouse and you get statistics regarding picking errors from each zone.



TOP intelligent scales

A second option to use the final scales is the mute tracking of the bundles. At the end of the dispatch you get a list of the bundles with the wrong weight. Your advantage: No need to weigh all titles before the start of the dispatch. This is automatically done during the dispatch by the intelligent algorithm.

- > All press-goods from books to daily newspapers can be packed at the same time.
- > Production in two opposite directions allows the processing of urgent routes first. Sharing titles or routes allows parallel production. Several pickers may pack the same title. This results in extremely high output quantities for the picking line.
- > Missing titles are directly registered and marked in the print-outs; the retailer knows why and how many titles are missing. The wholesaler's accounts department knows immediately which customers got which titles.
- > Adjustment to current demand, rearrange routes and drop sequences, deal with an urgent route first or pack special customers immediately.
- > You can print full bundle information at the same time on the delivery note and a full bundle list grouped by routes.
- > TOP can be moved easily.
- > Customer texts can provide additional information for individual retailers, groups of retailers or both.
- > A special display is possible for a route sequence e.g. adding a weekly invoice in each initial customer bundle.
- > The TOP-system's automatic mapping assistant allocates titles automatically to the desired number of picking zones. Knowing the exact number of copies per title allows the system to allocate them in a pyramid form so that all zones are averaged equally with respect to workload.
- > If you have too few or too many copies of a title you can adjust the supply for each POS. Special algorithms allow intelligent adaptation.
- > Status control gives information about each bundle, retailer or route. Percentage of workload remaining is also available as well as the estimated finish time. A log keeps a time stamp of each important milestone (start, bundle ready, reset, missing amounts, etc.).
- > Most important is our "five-minutes-rule". Here, you have the guarantee, that you can repair any failure in a short time by yourself; your delivery is never endangered.



AERO Automatic and Ergonomic Robot



- AERO combines the advantages of a picking line with the advantages of a pigeon hole system
- Throughput + 3000 copies per hour = outstanding efficiency
- Ergonomic picking as the customer compartment moves automatically to the picker
- The customer bundles sit in the revolving tower, the titles are in the title trolley sitting behind the title shelf with the displays. The green light of the acknowledgement button indicates the correct package.

For the increasing trend towards work bench picking TWI already offers the right solution: TWI has developed the world's most accurate and productive single person picking system, the AERO.

AERO combines the advantages of a pick by light tie-line with those of work bench picking. Up to 16 titles can be picked simultaneously into each customer bundle. The picker takes the goods out of an ergonomic four storey title shelf and places them directly in the customer bundles which are located next to the shelf.

The customer bundles are held in the round tower, which turns automatically beside the title shelf. After all six customer bundle of one tower segment are completed with those 16 titles, the tower turns a segment to present the next six bundle compartments.

Up to 16 titles can be picked at the same time from the title shelf. Under each title a display indicates the number of copies to be picked for the current customer bundle. The customer compartment is indicated by green lights on the acknowledge button next

to the AERO tower. After acknowledgment the copy quantities for the next bundle light up. After all customer bundles are served with all titles from the title trolley, the AERO tower has done a complete turn. Now the title trolley can be equipped with the next 16 titles. The titles and their shelf compartments are linked together with a barcode scanner. Alternatively an additional title trolley can be prepared with 16 new titles so that these can be picked into the same customer bundles.



Each compartment in the AERO tower is allocated to a customer

Titles that are often picked sit in the ergonomically most favourable middle levels, less frequently picked in the upper and lower shelves of the title trolley. After the delivery notes have been added, the bundles are strapped manually. The pickers on two AERO-stations share one strapping machine. Then they load their bundles into the delivery vans, ordered by (reverse) drop sequence number. The AERO tower can accommodate



The green light indicates the correct customer bundle

60 customers with a maximum of 120 bundles yet its footprint is less than three square meters! Optionally TWI also offers a bigger AERO with 192 bundle slots. Online printing delivery notes and automatic pack separation are only some of the many advantages of AERO. With AERO your workers will easily increase picking accuracy and productivity.



The customer bundles sit in the revolving tower, the titles are in the title trolley sitting behind the title shelf with the displays. The green light of the acknowledgement button indicates the correct package.



Installation of 9 AERO, St. Petersburg, Russia



AERO at Riepe



AERO at Wilhelmshaven

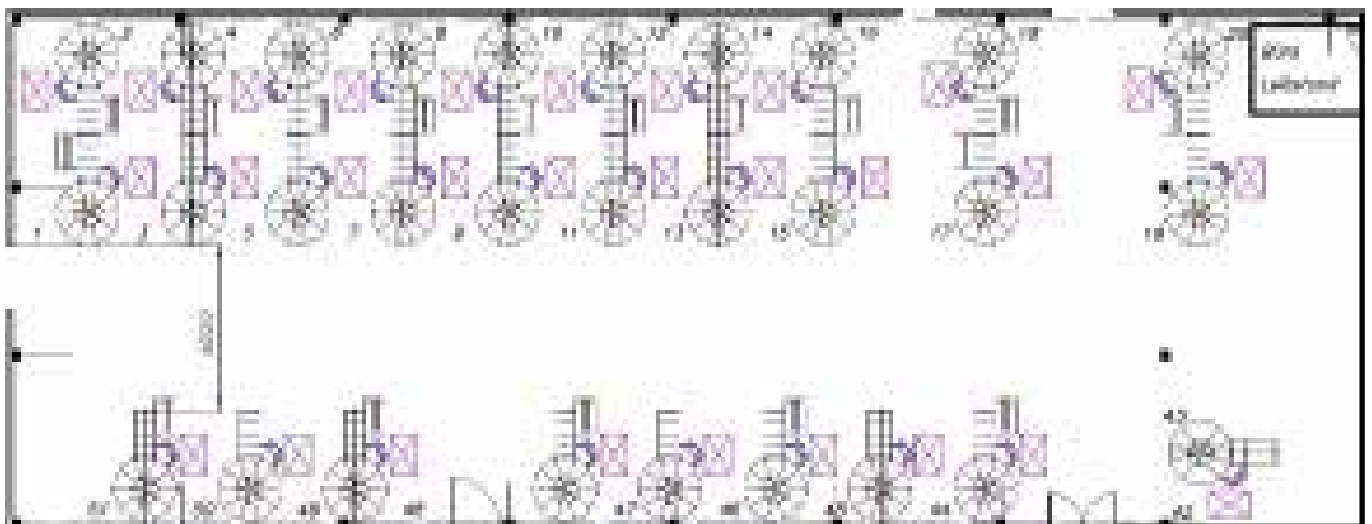


Quality control by weighing as an option

The Advantages of AERO

- > Intelligent design results in 30 meters of shelves with a footprint less than 3 square meters
- > Instead of having to walk 10 meters for one title as a conventional work bench, the picker can reach 16 titles with just one single step
- > High productivity, simple operation, transparent workflow
- > Preparation of the products in the goods-in department or directly at AERO
- > No lost space in height because the displays sit in the bundle compartments
- > Vertical side panels ensure optimal bundle separation
- > 16 titles instead of only 1 title per bundle contact
- > More customers than compartments on a tower due to the clever “last-batch strategy”
- > Either automatic-dynamic or manual pack separation
- > Quality control by weighing as an option
- > Number of compartments per tower can be adapted in a project
- > Space-saving installation for challenging building structures
- > On-line printed delivery notes
- > Individual statistics for each worker
- > Only 230 Volt alternating current and a network connection necessary
- > Combined server with other TWI systems, e.g. TOP tie-lines
- > No down time longer than five minutes
- > Minimum space requirement, optimum ergonomics and high productivity (3.500 copies/manhour at 6,0 copies/pick) through simplicity and compactness

AERO can work at your premises



Schematic layout of a wholesaler's warehouse – each AERO serves one or more routes

TALOS Automatic Packing System



- TALOS is an automatic packing system for single worker picking
- TALOS drives automatically to the next picking place and combines pick-by-light and pick-by-voice
- TALOS is flexible and can be used for shelf and pallet picking

TALOS is an automatic packing system for single place picking. Motor-driven vehicles automatically drive the copies precisely in front of each customer compartment and show the correct pick numbers with eleven bright displays. After acknowledgement TALOS continues

to drive until all titles are completely distributed. First the front side of a mobile shelving system is filled, then TALOS turns around and fills the back. Not only the main function, picking, is done by TALOS but also the delivery driver is guided by GPS with the HIT

Handy to exactly the right retailer. TALOS also announces the parcels and full bundles to be delivered, scans the return boxes from the retailer and allows complete fleet management through track & trace.

TALOS advantages

Experience has shown that TALOS achieves excellent packing quality plus a high picking and department productivity thanks to the five main TALOS features:

- > TALOS drives automatically to the next correct compartment
- > Every picker works independently at his own speed
- > Each picking action is acknowledged and only then does TALOS move on
- > Even when TALOS is moving, the picker gets all the information both visually and acoustically
- > Up to 20 titles are distributed simultaneously on each run

TALOS for re-deliveries and SBR stock picking



The picker acknowledges the action, on top of the display mast new numbers appear for the next action.



Comfortable shelf for boxes for route picking, full boxes can be exchanged easily.

TALOS can be used for the picking of re-deliveries and SBR picking (Sales Based Replenishment) directly from your stock room.

TALOS can do the picking either for routes or directly for retailers. Each automatic circuit of TALOS collects items



The display mast shows the number of copies to be picked. Each box is reserved for one route.

for 20 routes or 100 retailers at the same time.

TALOS reads the barcode which is posted at each shelf and so knows which titles are stored in any part of the stock room.

The display mast indicates the number of copies to be picked at each shelf level. At the top of the mast a display shows the number of the route box where the copies must be put. In addition, all information is announced by voice output in the native language of the picker.

Every pick is acknowledged by the confirmation button. After this the next copies to be picked are shown and announced. When picking in a column of the shelf is done, TALOS automatically drives forward to the next column of the shelf where the process repeats itself.

TALOS drives through the whole shelving area until all the items for the recorded routes are collected in the boxes.

Finally, delivery notes are attached to the route boxes.

Advantages

- > Fast: 2 TALOS can process 3200 copies for 34 routes (=1800 retailers) in 1.5 hours. This means 3 man hours for 3200 copies, out of approx. 5000 stored issues
- > Safe: every picking is acknowledged, nothing can be forgotten
- > Structured: your stock room is clearly structured; every title has its own space in the warehouse administration system
- > Standard process: SBR (Sales Based Replenishment) titles and re-deliveries are picked in the same workflow
- > Correct storage: incoming new titles are stored with TALOS at the correct place in the correct shelf
- > Additional deliveries: collected in the returns department and stored with TALOS on the right shelf
- > No more forgotten returns: return titles are collected with TALOS from the stock room, no return title can be forgotten on a shelf



The brain of the system: HIT-Handy inside TALOS

WINPICK Workbench for Intelligent Night Pick



- The WINPICK (Workbench for Intelligent Night Pick) system is an easy and fast system for packing newspapers and magazines
- High-quality electronic components and software made in Germany
- Bright displays directly at each customer compartment
- Your existing shelf system can be upgraded with the technology
- Robust and long-term usage, due to the 5-minute-rule

Picking with the WINPICK system is most effective, flexible and easy!

Bright shining displays with three buttons sit directly at each retailer compartment. These buttons allow amount reductions per customer or the pack separation together with the automatically printing of that parcels delivery note.

The number of retailer compartments per shelf is variable. So it is possible to have shelf-systems for routes with 40/50/60 or even more point of sales. For future changes it is possible to

modify the station size in steps of 10 compartments. It is also easily possible to combine two workbench stations to one big station e.g. for special Sunday routes. The two stations with e.g. 60 compartments each will then behave like one big station with 120 boxes.

Each station is equipped with a robust electronic control unit, which is connected via TCP/IP network with the central server.

A graphic display shows all necessary information like route information and function keys.

Working with system is easy so that either own staff or subcontractors can use work it immediately. Like all TWI products the WINPICK system is designed according to the 5-minute rule. So unskilled persons are able to change e.g. a display without tools and without any configuration changes. The new display identifies automatically its position in the display grid and failure interruptions are short. As the control unit works independently it is possible to work at the station even during malfunction case, e.g. a power-down at the server.

Advantages

- > Usually the picker puts new titles into the compartments in the mode “compartment = retailer”. Optionally the system allows also picking out of the compartments in the mode “compartment = title”. This can be used e.g. for magazine picking during the day time.
 - > The customer bundles are picked ergonomically, therefore the bundles with the highest volumes are sitting in the middle of the shelves. After all titles have been packed, the right drop sequence is created during the shelf’s clean-out while the delivery note is printed.
 - > Bright shining displays directly at the compartments.
 - > Bundle or customer related changes directly with the display buttons.
- > After a power down the system works again within seconds.
 - > High quality TWI components and the 5-minute-rule result in high availability.
 - > Optional quality check with the scales is possible.
 - > The system is robust, designed for a long life and flexible. It provides long-term investment- and planning security.
 - > Flexible combination of two stations to one big station.
 - > A goods-in workbench for keyamounts, low volume titles and deliveries from other sources on route-level is optionally available.
 - > It is possible to control the WINPICK system and TOP lines with one server.



Graphical display with connection to the server, barcode scanner and printer for delivery notes.



WINPICK in Munich, Germany



Compartment display with big LED figures and 3 buttons

HIT – Highly Integrated Press-Logistics



- HIT Track & Trace system with GPS (Global Positioning System)
- HIT is the link between the distribution of new titles and the collection of the return titles
- The HIT database combines the TWI picking systems with the TWI returns systems, especially for tote box tracking
- Easy implementation and easy usage by the driver

HIT (Highly – Integrated – Transport) is the first press logistics concept worldwide which integrates the distribution of new titles and the returns pick-up.

With HIT every parcel reaches the right retailer quickly and safely. No parcel with unsolds will be lost. Your whole logistics process will become completely transparent and reliable. HIT logistics uses GPS navigation information to track and control your press goods.

TWI has patents for press logistics in 17 European countries and the USA.

The HIT Handy allows the perfect route track. The driver is guided automatically in his native language to each retailer. The route taken is registered with time and place stamps set by the GPS system. Route tracking is completed with the barcoded customer bundle to provide a safe parcel trace. This ensures the correct delivery of all boxes or bundles at the correct retailer and the accurate registration of boxes filled with unsold returns.

The combination of HIT Handy and barcoded customer parcel creates the perfect track and trace system, the HIT logistics.

Box picking is an international standard. Nowadays add-ons on many magazines make picking difficult as well as the strapping of the bundles. Box picking is an elegant solution. An example of how TWI follows your needs and the requirements of your local market.

TWI200 EXPRESS Automated Sorting System



- TWI200 express is the most secure and rapid system for returns processing using barcode recognition
- Zero-error principle = transparency and confidence for personnel, retailer and publisher
- Throughput + 2000 copies per hour = outstanding economic efficiency
- Reliability = 100 days autonomous working, double sensors and activators, 5-minutes-rule
- Six automatic outlets = no title knowledge required

The TWI200 EXPRESS works by scanning barcodes of newspapers and magazines. It is equipped with a voice output facility and 6 automatic outlets. The TWI200 system is excellent for staff

without any title knowledge. The job of sorting is done automatically by the sorting mechanism of the machine and not by the person. This is the guarantee for zero errors. Error-free operation

increases retailer and publisher confidence in the correct calculation of returns and so produces less work for the customer service department.

Workflow

The stacker brings the packages of customer returns to the workstations. Each operator unpacks the products and places the returns note or package sticker under the scanner. After reading the barcode, the TWI200 system says "new customer". As an option an automatic

customer change with a capacity sensor or a tote switch is possible. The operator now scans the first copy and the drive belts pull the copy long to transport it away. If a code cannot be read, the hook of the "no read" outlet jumps up and stops that copy. It then goes, to-

gether with the returns slip, to a manual rework station or the operator searches for the title in the database. We recommend doing the manual rework at a special workstation with experienced staff.

Advantages

- > The TWI200 express machine is ideally suited for use by inexperienced staff and represents the perfect “money counting” machine as the decision-making aspect of sorting is removed from the operating personnel. That’s how the high speed is achieved.
- > Using the machine is child’s play and requires no knowledge of the titles. The possibility of error is eliminated by the systems design, which allows the operator to concentrate fully on a high throughput rate. These twin benefits of high productivity and outstanding quality combine to make the TWI200 express an exceptionally sound investment.
- > The system has an extremely simple design, with between 1 and 30 stations positioned to the right and left along a conveyor belt.
- > The system checks all customers and all title barcodes. It knows in advance which titles are to be collected and which barcodes are printed badly or incorrectly.
- > Each workstation is provided with a loudspeaker which gives a verbal output of all necessary information. In order to achieve this high level of user-friendliness, a great deal of time and effort has been invested in the development of intelligent software.



These pictures show the scanning and transportation and the “no read” outlet

Function

Four sensors and the no read outlet are installed in the touchdown zone. The sensors reactivate the scanner since it is deactivated after each successful read operation.

This deactivation process eliminates the possibility of duplicate credit entries. If the no read outlet catches a copy because the barcode has not been read or there is no scan at all, the unit says: “no”.

In any case the transport of the copy is stopped. It is taken from the no read outlet and either a further read operation is attempted or it is simply placed in the no read bin for manual rework.

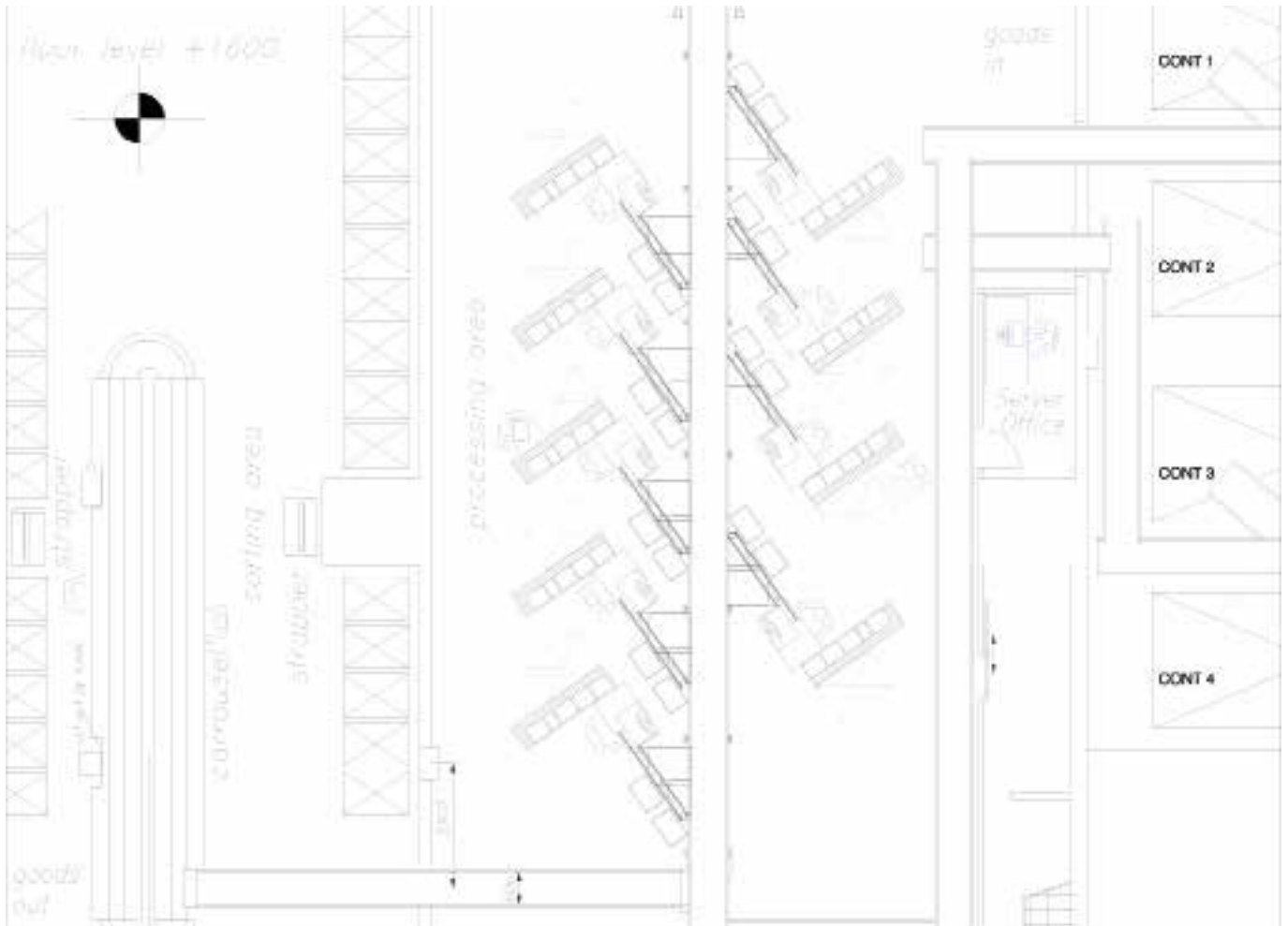
Because most of the copies are waste the final height of the conveyor belt is 1.2 m to allow waste containers to be placed underneath.

The four other outlets for collecting copies are 350 mm long and sort alternately to the left or right side.

With this, four big boxes, each 70 cm wide, can be filled or the copies are transported by conveyors to sorters.

Design

- > Each basic workstation consists of a strong base frame of anodised aluminium sections mounted on 4 swivel wheels with brakes. The design of the workstation – the base of the table is 74 x 70 cm – makes it ideally suited to situations where space is at a premium. The self-supporting sorting arm is 2 m long.
- > The workstation consists of 3 levels. The top level supports the PC Monitor and an adjustable laser scanner which points down towards the operations level. The scanner is top-quality with 2400 scans/sec, 7 fields and 24 lines, specially designed to read press barcodes. The second level is an aluminium working table which ends directly in the touch-down zone. Finally, behind the touchdown zone there is the no read outlet, four roller outlets and the final outlet at the end of the conveyor.
- > Because most of the copies are waste we recommend the outlet at the end of the conveyor be used for these goods. The working stations are placed at the desired angle to the waste conveyor.
- > All key elements of each workstation are provided in duplicate to ensure redundancy – in particular the actuators and sensors. With the five minutes rule you have the guarantee, that you can fix any break down in 5 minutes by yourself. As with our other systems, integral remote diagnosis and remote maintenance are provided via a modem connection to our central computer. This ensures outstanding operating reliability.
- > A workstation only needs a 220V connecting cable and a data cable to the HUB. This means that a complete installation needs, at most, one day. Further advantages are extreme flexibility, allowing installation in the smallest spaces, and the extremely low operating costs.



Schematic layout of a wholesaler's warehouse with TWI200 and sorting conveyors



TWI200 EXPRESS at Ifoton, Limburgerhof, Germany

Basic principles

Returns processing means counting money for other people. The retailers account is credited by the publisher. Since a recheck is not possible, it is very important that all parties have confidence in the returns processing operation.

- > Human error must not be able to falsify the results
- > The possibility of duplicate credit entries must be eliminated
- > Non-recognized copies must be recorded
- > Every single copy must be properly identified
- > Automatic monitoring of the correct functioning of the outlets



Automatic customer changing and recognizing with sensor and scanner



TWI200 MULTI with extra long sorting arm



TWI200 EXPRESS at MSP, Moscow, Russia

TWI – Tabacco & FMCG picking



- Pick-by-light for best sellers on high speed picking lines
- Pick-by-voice for low sellers for an unlimited number of articles
- Pick directly into the cardboard or box which will be used for delivery, no repacking necessary
- Quality assurance at the packing station and during picking by scanning and single acknowledgement
- Optimized dispatch according to route priorities, volume pack-separation to all available boxes
- Individual interface to any host system like e.g. SAP, Navision and others
- Most ergonomic high-speed picking through sophisticated design



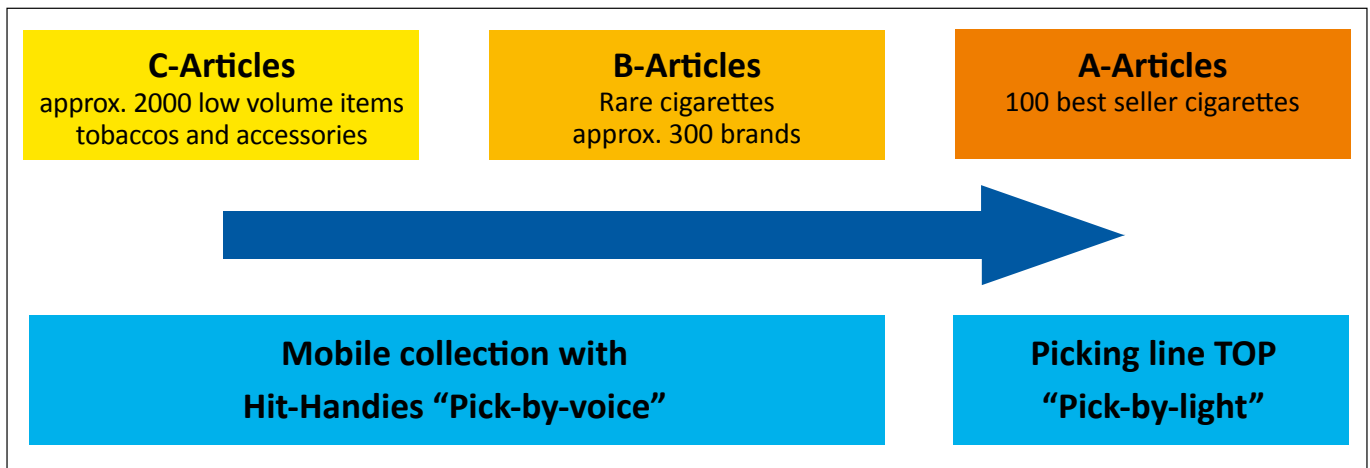
Pick trolley in warehouse



Picking with the HIT-Handy



Scanning the barcode



The TWI tobacco and FMCG system is the ideal picking system for all kind of warehouses with a high number of articles.

Immediately before starting the orders the system calculates the minimum amount of outgoing colliers using all available box sizes and avoids empty volumes. Reusing empty original cardboard boxes reduces the cost for new ones. The process separates big order amounts in master cases.

According to the ABC-analyses picking starts in the pick-by-voice section with HIT-Handys. The picker loads up to twelve empty boxes onto his ergonomic trolley for a productive parallel process and the HIT-Handy guides him efficiently on the shortest possible way through the aisles to the first required article. For error-free picking, he scans the article EAN barcode and only after a correct scan he hears the number of SKU together with the box number on his trolley. A scan of the box barcode accomplishes that order line. In case of customer price change restrictions the picker may change the originally ordered price. Once the picker completed his trip, he weight-checks his boxes and feeds them on a conveyor to the pick by light TOP-line, where the boxes get filled up with bestsellers. The pickers at

the TOP-line create typically many other boxes containing only bestsellers.

A display at each article informs on the required quantity and allows price changes or amount reductions.

The picker acknowledges each order line by pressing a button. At the end of the TOP-line all boxes for the order are completed and in the right sequence. They enter a buffer conveyor leading to the final quality check.

The inspector weights each box and in case it is out of tolerance, he quickly checks the content by scanning them. A digital camera stores a photo of each box together with a record of the content. Prints of an address sticker and an individual content note for each box complete the process. Then a tap-

ing machine seals and closes the boxes feeding them to the palletising point, where they are packed route wise and each pallet is completed with a printed pallet content note. The TWI server sends a result file including the boxes real content and any price or amount changes directly to the host system for invoicing together with other deliveries. The whole system is extremely noiseless. It transports all kind of cardboard boxes and plastic totes. For optimized route picking the system provides many administration tools for the internal and external logistics with statistics for warehouse management and accounting.

The system grants a high flexibility regarding changes in the daily workload as it enables the optimum disposition of workers according to the workload individually for each day.

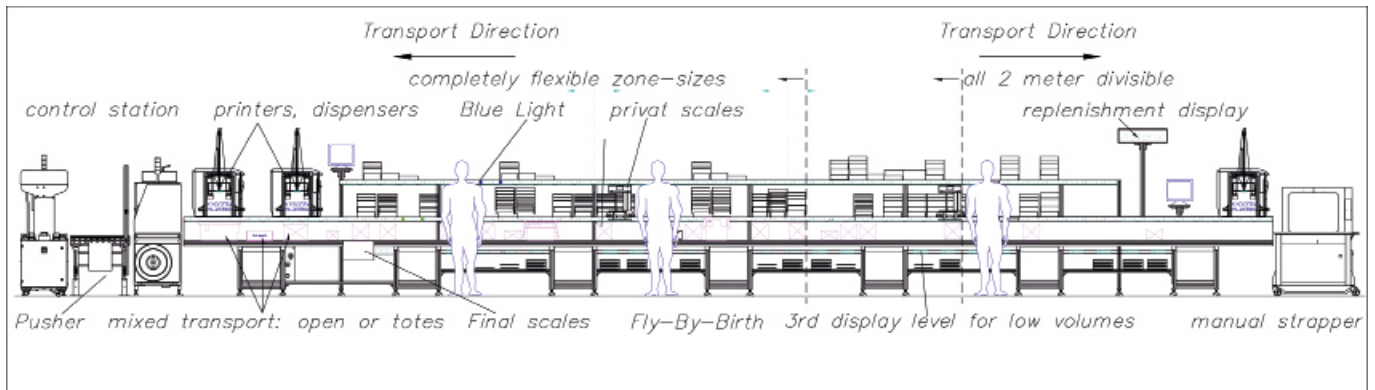


Pick by light on the TOP line



Digital photo of the content of each shipment

And how will your project with TWI be?



- Thorough analysis of your requirements based on your picking and returns figures
 - A reliable offer, free of charge, including warehouse layout planning
 - Project planning determining the scope of delivery and concluding a long-term partnership
 - A detailed project scheduled with a fixed installation date – flexible if our customer need to change unexpectedly the date
 - No price changes or additional costs later in the project
 - One well-skilled TWI project manager for all your questions
 - High motivation of the TWI team for a successful project, installation and go-live
 - Manufacturing of high-tech machinery made in Germany
 - Detailed planning of the individual interface and the site requirements
 - Consulting our customer regarding warehouse layouts and site requirements (e.g. conveyor belts, compressors)
 - Peripheral components like printers and strapping machines are standards of the shelf – often existing ones can be integrated
 - All systems are completely build up at TWI and thoroughly tested for at least four weeks prior to the delivery
 - For a smooth installation: Factory acceptance test in Karlsruhe by the customer with real data and real customer products
 - Hands-on training of customer's personnel in Karlsruhe before installation, with their new system
 - Quick and professional installation, usually over a weekend
 - Training the personnel thoroughly – only when people can work with the system, then TWI goes home, not earlier
- And after installation?**
- For the entire lifetime of the system:**
- 24/7 Hotline service on 365 days a year
 - All spares on site
 - Easy to take care of, no technicians are required, low energy assumption
 - Sustainability as systems can be extended or used for other business areas as well
 - Additional enhancements and new developments can be installed later on
 - High durability: TWI systems are robust and built for a long-term usage
 - All TWI systems can be easily moved within a few days
 - TWI is your long-term partner for service, moves, enhancements and using the system for new business areas



Satisfied customers



Graeme Underhill
Operations Director Bertrams
Smiths News Group, UK:

“We have been operating TWI TOP packing and HIT tracking systems throughout our 52 distribution centres since 1998. These systems have enabled us to im-

prove customer service levels significantly while maintaining efficient distribution costs. TWI has been an excellent business partner for us and we have complete confidence in their ability to deliver world class systems – so much so that we have been developing further systems with them to handle magazine unsolds and newspaper packing.”

TWI – advantages

- High Quality “made in Germany”
- One reliable partner for hard- and software as well as project management
- Famous 5-minutes-rule to exchange all major spare parts
- TWI provides an outstanding 24/7 Hotline service on 365 days a year and always with direct support from a well-skilled expert of the TWI team
- Experienced and professional team
- For all systems: Easy assembly and disassembly in case of moving or prolongations
- Stable value through flexible utilization
- Silent, minimal energy consumption and 98% recyclable
- TWI has a high reputation for press and tobacco picking systems worldwide
- TWI systems are robust and built for a long-term usage
- TWI provides at the installation a set of standard spare parts for utmost security
- TWI systems are permanently developed and improved
- TWI is a stable family-run company with a mix of young and experienced colleagues which has successfully done the generation change
- TWI keeps promises!
- TWI’s high motivation and our solidarity with our customers make us the right partner

TWI supplies and supports world wide



Fast and error-free picking with TOP packing line

Semi-automatic picking line with high flexibility, great packing quality, outstanding productivity. For magazines, newspapers, and tobacco – the solution for all packing jobs.

AERO – Automatic and ergonomic robot

AERO combines the advantages of the picking line and pigeon hole picking with its compartment tower and title shelf. Ergonomic picking of up to 16 titles together straight away into each customer bundle.

TALOS – Automatic packing system with flexible shelving

Motor-driven vehicles automatically drive the copies precisely in front of each customer parcel and show the correct pick numbers visually and acoustically. Perfect for distribution of time critical titles and re-delivery.

HIT – Highly integrated transport for your logistic system

The bridge between distribution, logistic and returns department. Track and Trace your parcels and trucks with GPS technology. Fast delivery, no installation at the retailer, all data ready from day 1!

TWI Contact

twi GmbH
Industriestraße 6
D-76189 Karlsruhe

T (+49)(0)721 95077-0
F (+49)(0)721 574832
www.twi-Germany.com
info@twi-Germany.com

The TWI 200 express – returns processing

TWI 200 express crediting and sorting of returns with the highest quality. Manual bar code returns system, high productivity and a secure process. Productivity of 2000+ copies / hour exceeded in operation!

Tobacco packing – outstanding achievement in quality and productivity

Control over the whole consignment, from delivery to the retailer or the vending machine. Slow-moving items are picked through a secure, speech-based hand held computer, fast-moving items are picked on the display-based TOP system with automatic parcel transport.

