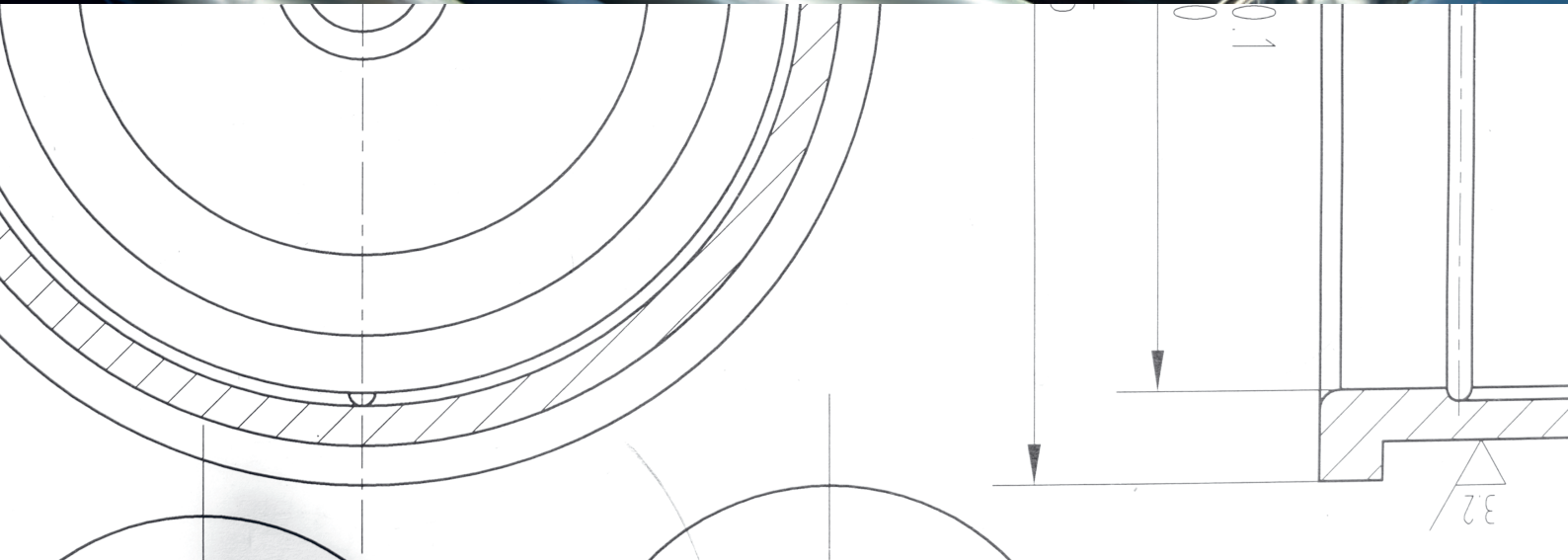


your warehouse_
in motion



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PHOTOMECHANICS: WAREHOUSE SOLUTIONS

Photomechanics is a globally distributed company with headquarters in Serbia and production in Russia that manufactures warehouse conveyor and sorting systems and integrates them into the warehouses of customer companies.

Photomechanics actively conducts research and development in the field of high-speed sorting of goods. This area is the responsibility of Sorters LLC, a subsidiary and a resident of the Skolkovo Innovation Center, a Russian high tech hub. The company also builds 360° photo studios and numerically controlled training machines for children.

The factory is located in St. Petersburg, Russia and has three physical sites: an office, a production area equipped with modern CNC machines, and an assembly area. This ensures operational efficiency and low dependency on suppliers. The high quality of our products is assured by skilled personnel. All key specialists, including programmers, are employed internally within the company. More than 70% of all equipment components are made in-house resulting in shorter delivery times.

A significant portion of the profits is reinvested in the development of new solutions and components, some of which are protected by patents. By 2022, the company has designed and built more than 25 systems, including 20 conveyor and sorting systems. The company's customers always come back for their next projects, because Photomechanics' solutions help them win new audiences through fast, accurate order picking and sorting, even during peak loads.

Photomechanics is one of the few companies on the market that has all the necessary expertise and technology to act as both a manufacturer and an integrator. Each sphere has a high level of sophistication.



PRODUCTION. SOFTWARE. MAINTENANCE

Production

Photomechanics' production capacity allows us to manufacture high tech storage and other smart systems for warehouses in our own facilities on equipment that enables all the technological processes required for the production of conveyor equipment: laser cutting, sheet metal bending, turning, milling, metalwork, riveting, and welding. Our production facilities are equipped with clean and well-maintained workspaces for assembly tasks. And to guarantee the highest standards of quality, we have a dedicated quality assurance department in place.

The company carries out full production of various kinds of conveyors designed by in-house engineers: belt, roller conveyors, conveyors for parcels, trays, for removal of empty packages, for heavy and light loads. The product range also includes several types of sorters. All of the equipment is used in the projects of Photomechanics customers.

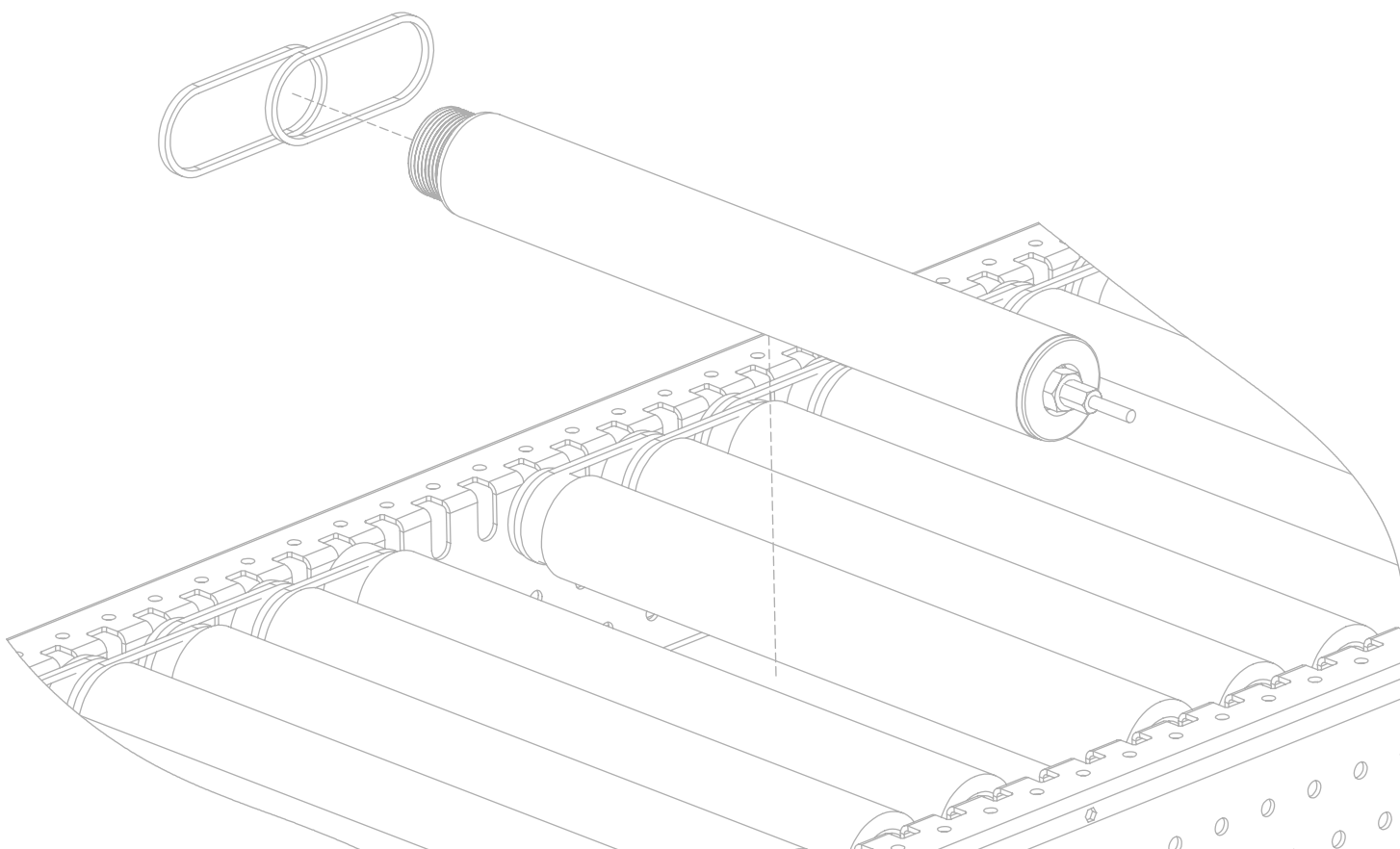
Only approved components from well-known manufacturers are used in the production process, and a developed network of suppliers and partners helps to ensure smooth delivery of parts. Quality control is carried out at all stages of production.

In-house production
in St. Petersburg since 2011



Preassembly of modules is carried out
at a facility in St. Petersburg

Installation of conveyor
equipment at a site



Conveyor Control System (CCS) software

The key feature of the Conveyor Control System (CCS) software from Photomechanics is its architecture and technology stack, which is based on modern tools and approaches for creating Enterprise level software products. The CCS is based on modern, up-to-date approaches. Generally, the control system of conveyor and sorting equipment is perceived by the customer as a small addition to the hardware that controls the drives, monitors the state of the sensors, starts and stops the conveyors. However, the Photomechanics CCS is a full-fledged software product that performs a number of functions:

Sorting management on any type of conveyor sorter, including those manufactured by third parties.

Product tracking on lines at all times thanks to a sensor system and an intelligent position control system.

Advanced reporting of all operations with products on the conveyor line: placement by an operator, scanning, weighing, label printing, sorting. The CCS web interface allows the entire conveyor system to be operated intuitively from any tablet or computer.

Photomechanics support interface: equipment and sensors can be inspected remotely, and 95% of all faults can be fixed remotely as well. If the problem cannot be solved remotely, technical experts can swiftly travel to the site. The support service provides control over the peripheral equipment, indicates congestions in the system and the fullness of the sorting targets.

The supervisor interface displays the status of all conveyors and sensors, indicates congestions in the system and the fullness of the sorting targets. It also configures the sorting targets. The interface allows you to manually bind a pallet to a sorting target and add a box to a pallet. The program makes it possible to track the status and path of any box in the system, unload a report, track the statuses of orders, and print a packing list for a pallet.



Maintenance and customer support

After the system is put into operation, Photomechanics experts ensure the highest possible availability of equipment for solving the customer's business tasks 24/7. Maintenance services and customer support include:

Regular servicing: on-site service; remote system monitoring; preventive measures; training of customer's personnel.

Emergency servicing: 24/7 online support service; remote troubleshooting; urgent on-site visits.

Life-cycle support for systems: system expansion, modernization, relocation, provision of spare parts.





Photomechanics' timing standards: reaction to failures – 30 minutes, diagnostics – 1 hour; temporary solution (remotely) – 2 hours; on-site visit of a specialist – arranged individually. 95% of all faults are resolved remotely.

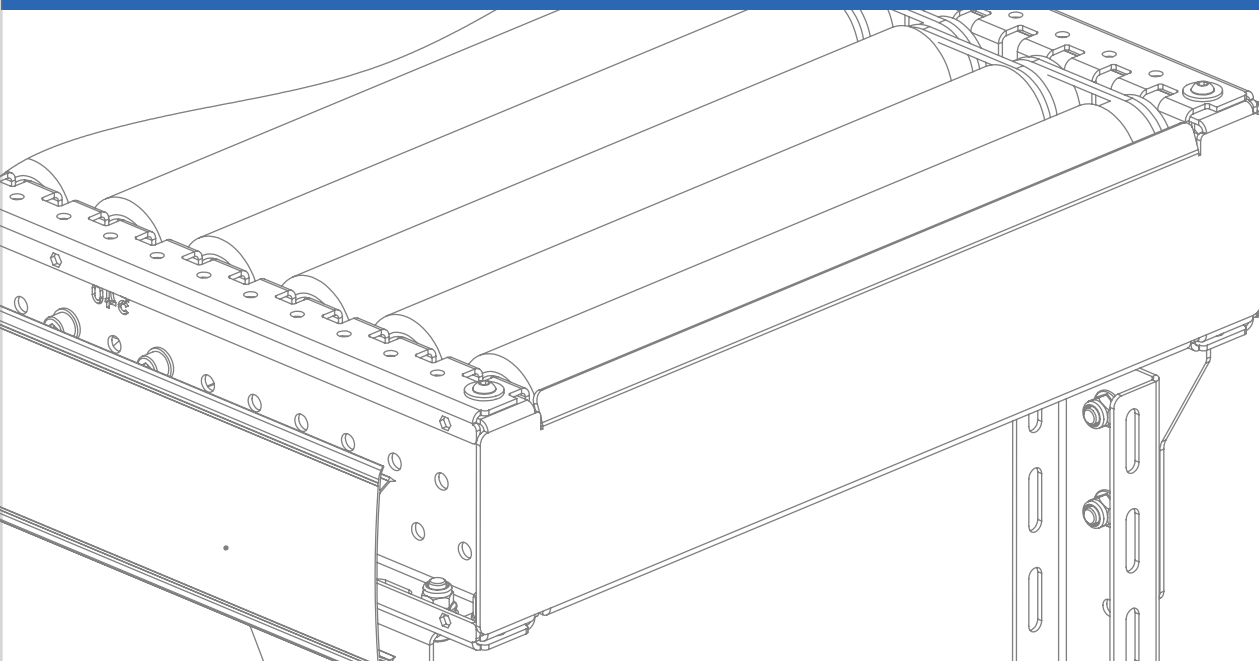


INDUSTRY-SPECIFIC SOLUTIONS

Photomechanics has implemented more than 25 projects of varying degrees of complexity in the Russian and U.S. markets. Over the years the company has acquired unique experience in designing and building systems. We successfully managed replacements of components in the face of changing global landscape and continue to deliver previously ordered systems on time.

Photomechanics offers a systematic outlook that will allow you to line up the necessary actions to achieve your goals. The manufacturing resources of the company will deliver the scheduled project in the shortest time possible, and the installation team will assemble and launch the solution. Finally, the IT department will take care of all the integration aspects. Industry-specific solutions are tailored to bring automation to online stores, retailers, distributors of cosmetics and pharmaceuticals, and delivery services.

-  ONLINE STORES
-  RETAIL
-  PHARMACEUTICAL DISTRIBUTION
-  COSMETICS DISTRIBUTION
-  TRANSPORT AND DELIVERY





Online stores

Benefits of automation:

- Increase in productivity of the packing and sorting area by 200%;
- No mistakes in order picking;
- Automatic exchange of weight and dimensions with shipping companies;
- Offsetting of peak loads;
- Reduced dependency on personnel.

Applied solutions:

- Pick-To-Tote semi-automatic order selection system;
- Conveyor systems;
- Weight and dimensional control stations;
- Sorters;
- Multi-order picking carts;
- Conveyor Control System software.

Retail

Benefits of automation:

- Increase in productivity of the packing and sorting area;
- Sorting by route;
- No mistakes in order picking;
- Automatic exchange of weight and dimensions with shipping companies;
- Reduced dependency on personnel;
- Transparent and predictable process.

Applied solutions:

- Multi-order picking carts;
- Conveyor systems;
- Pick-To-Tote semi-automatic order selection system;
- Automatic weight and dimensional control stations;
- Sorters;
- Conveyor Control System software.



Pharmaceutical distribution

Benefits of automation:

- Sorting goods into orders;
- Packing the orders;
- Labeling;
- Weight control for order picking.

Applied solutions:

- Conveyor systems;
- Sorting systems;
- Pick-To-Tote semi-automatic order selection system.



Cosmetics distribution

Benefits of automation:

- Special solutions for multi-order picking;
- Increase in productivity of the packing and sorting area by 200%;
- Delicate handling of goods;
- No mistakes in order picking;
- Reduced dependency on personnel.

Applied solutions:

- Sorters;
- Automatic weight and dimensional control stations;
- Pick-To-Tote semi-automatic order selection system;
- Multi-order picking carts;
- Intelligent visual control systems for order picking;
- Conveyor Control System software.



Transport and delivery

Benefits of automation:

- Fast processing of incoming flow;
- Minimization of sorting mistakes;
- Fixation of weight and size;
- Photo fixation of goods;
- Handling of peak loads.

Applied solutions:

- Sorters;
- Automatic weight and dimensional control stations;
- Conveyor Control System software.



SORTERS_



Photomechanics:
Warehouse solutions

Production.
Software. Maintenance

Industry-specific
solutions

Sorters

Conveyor systems

Our projects

MULTI-BELT

The Multi-Belt sorter is recognized for its ability to handle goods with care, its ease of use, high load capacity, affordability, and ease of scaling.

In addition, the Multi-Belt module from Photomechanics is well suited for separating and combining flows, and can serve as a transfer element at the intersection of tracks in a complex conveyor junction. This is a popular solution in industries where order picking is done semi-automatically. Online stores and pharmaceutical distributors use plastic trays for small items, enabling them to sort goods of various sizes

Benefits:

- Speed of up to 2,000 boxes / trays per hour;
- Weight control from 50 g to 25 kg;
- Precision and care sorting, ensuring there is no rough handling or impact on your goods;
- Automatic binding of orders to pallets, automatic generation and printing of documents for pallets;
- Can be driven either entirely by electric motors or by pneumatics;
- Integration with WMS via REST API or any other suitable option;
- Web interface for manual addition / removal of goods in a pallet, generating reports, order management, etc.;
- An integral part of a complex conveyor system;
- Low cost;
- Short delivery time;
- Maintenance and customer support;
- Remote diagnostics and monitoring.

Application:



ONLINE STORES



RETAIL



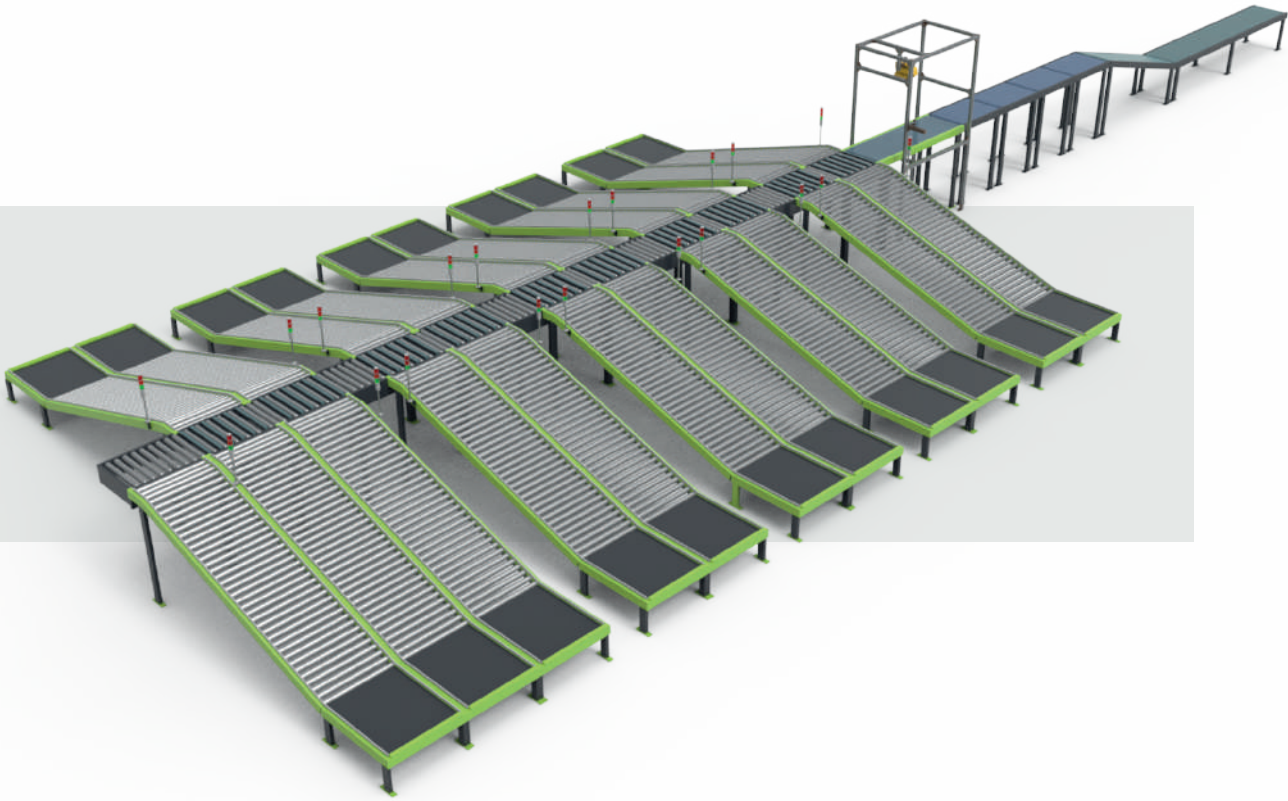
PHARMACEUTICAL
DISTRIBUTION



COSMETICS DISTRIBUTION



DELIVERY



2000
pcs/h

50 g - 25 kg
weight control



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Warehouse solutions

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Industry-specific
solutions

Sorters

Conveyor systems

Our projects

SWIVEL

When it comes to a wide range of sizes from 100 to 1,000 mm and heavy weights (up to 25 kg) with high sorter speed requirements, the Photomechanics swivel roller sorter is the right solution. It consists of several rows of rotating drive rollers. They redirect products at 30° or 45° angles for sorting. Then the load is slowed in the roller buffer area.

Benefits:

- A system with a wide range of weight and size characteristics of goods;
- Speed – up to 4,000 pcs/h, 8,000 pcs/h – for two-level sorting;
- Handling of products of up to 1,200 mm in length and 25 kg in weight;
- Photo fixation of products;
- Automatic binding of orders to pallets, automatic generation and printing of documents for pallets;
- Can be driven either entirely by electric motors or by pneumatics;
- Integration with WMS via REST API;
- Web interface for manual addition / removal of goods in a pallet, generating reports, order management, etc.;
- Maintenance and customer support;
- Remote diagnostics and monitoring.

Application:



ONLINE STORES



RETAIL



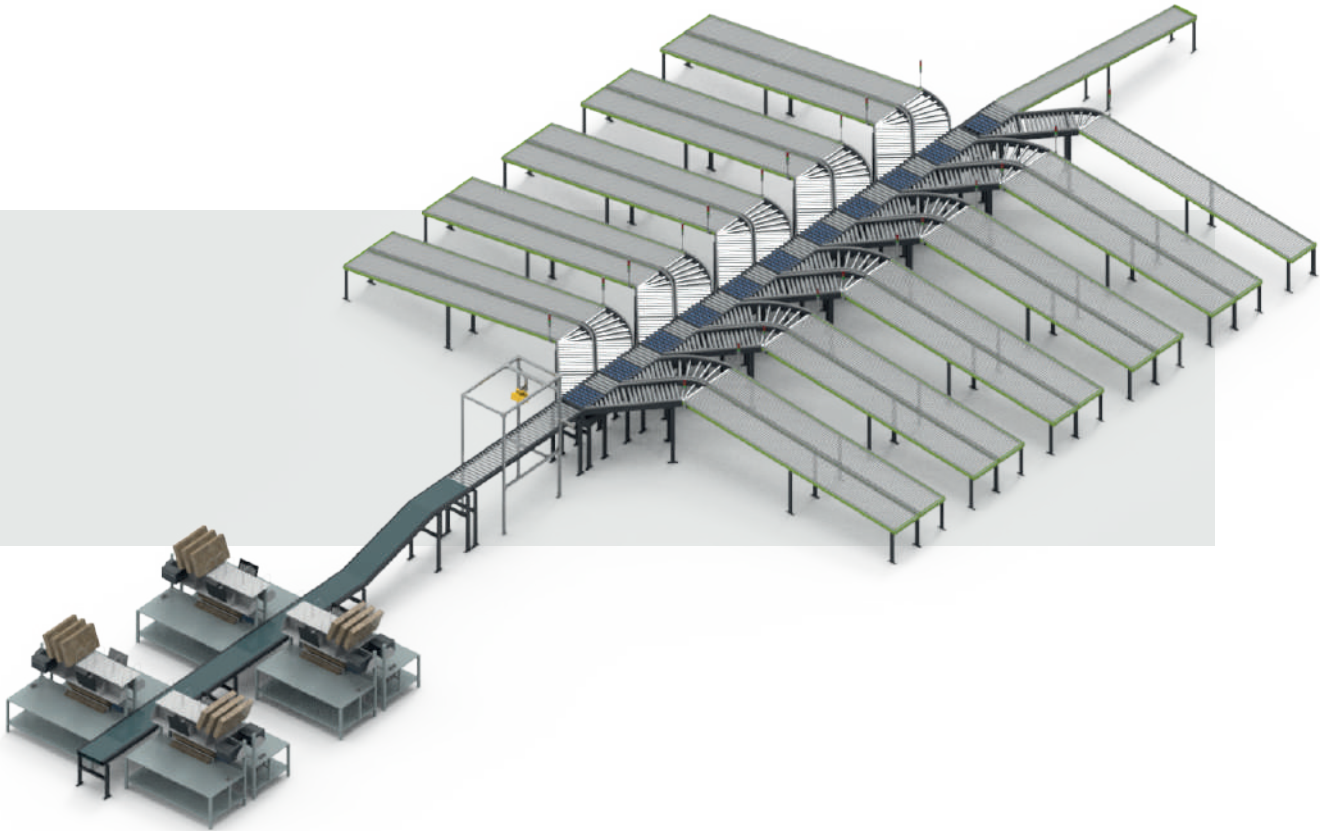
PHARMACEUTICAL DISTRIBUTION



COSMETICS DISTRIBUTION



DELIVERY



Handling of products of up to 800 mm in length and 25 kg in weight



Photomechanics:
Warehouse solutions

Production.
Software. Maintenance

Industry-specific
solutions

Sorters

Conveyor systems

Our projects


TILT-TRAY

The Tilt-Tray sorting technology is based on the mechanism of tipping trays. It demonstrates high efficiency in processing goods and is not demanding in terms of type and quality of packaging. Photomechanics pioneered production of these sorters in Russia with the highest degree of domestic manufacturing.

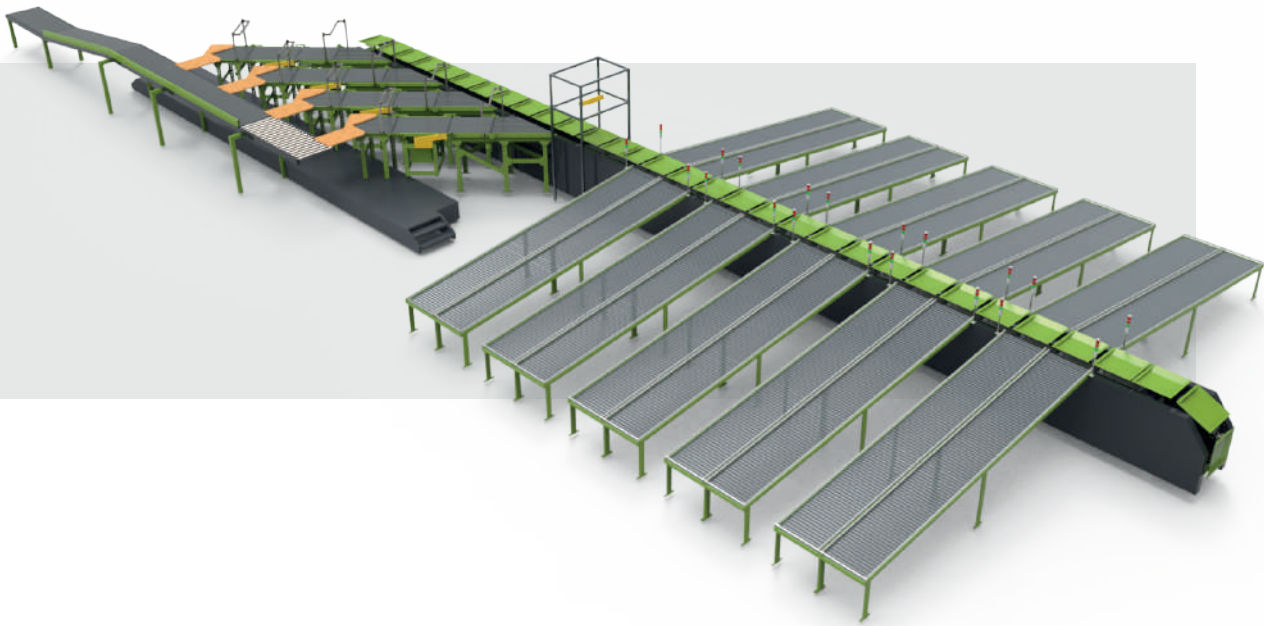
Benefits:

- Speed of up to 5,000 pcs/h;
- Weight control from 50 g to 20 kg;
- Rejection of goods that did not pass quality control;
- Capacity to handle round, cylindrical, light, and small goods;
- Short delivery time;
- Automatic binding of orders to pallets, automatic generation and printing of documents for pallets;
- Can be driven either entirely by electric motors or by pneumatics;
- Integration with WMS via REST API or any other suitable option;
- Web interface for manual addition / removal of goods in a pallet, generating reports, order management, etc.;
- Maintenance and customer support;
- Remote diagnostics and monitoring.

Application:

-  ONLINE STORES
-  RETAIL
-  PHARMACEUTICAL DISTRIBUTION
-  DELIVERY





5000
PCS/h

50 g - 20 kg
weight control



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Conveyor systems

Our projects

CROSS-BELT

The Cross-Belt is the fastest yet sufficiently careful sorting tool. Photomechanics launched production of this sorter in Saint Petersburg in 2021 and was the first to manufacture this technology in the domestic market. Three systems manufactured by Photomechanics are currently installed and operating successfully.

Benefits:

Speed – up to 7,000 pcs/h;

Automatic weight and dimensional control from 50 g to 20 kg;

Rejection of goods that did not pass quality control, photo fixation of products;

Low noise level;

High energy efficiency;

Automatic binding of orders to pallets, automatic generation and printing of documents for pallets;

Can be driven either entirely by electric motors or by pneumatics;

Integration with WMS via REST API or any other suitable option;

Web interface for manual addition / removal of goods in a pallet, generating reports, order management, etc.;

Maintenance and customer support;

Remote diagnostics and monitoring.

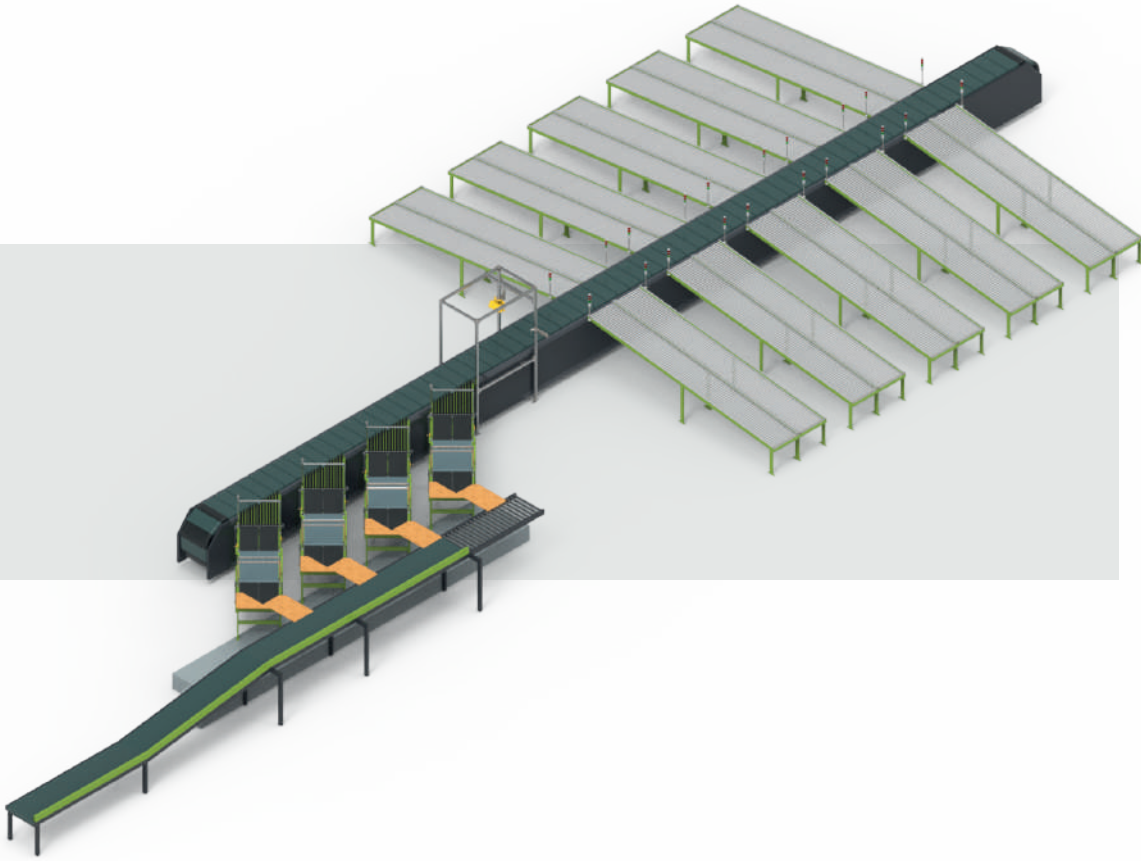
Application:



ONLINE STORES



DELIVERY



7000
pcs/h

50 g - 20 kg
weight and dimensional control



Photomechanics:
Warehouse solutions

Production.
Software. Maintenance

Industry-specific
solutions

Sorters

Conveyor systems

Our projects



CONVEYOR SYSTEMS _



Photomechanics:
Warehouse solutions

Production.
Software. Maintenance

Industry-specific
solutions

Sorters

Conveyor systems

Our projects

AUTOMATIC WEIGHT AND DIMENSIONAL CONTROL STATIONS

Working with carriers requires accurate data on the weight and size of orders. Automatic weight and dimensional control stations from Photomechanics take measurements at a rate of 3,000 pcs/h. Moreover, the systems are equipped with a photo fixation feature to deal with missing or lost orders.

Benefits:

- Capacity – up to 3,000 pcs/h;
- Weighing accuracy – 10 g;
dimensional Accuracy – 5 mm;
- Ability to scan the dimensions of non-Standard shaped goods and packaging;
- Ability to process light and small goods;
- Rejection or presorting of orders in two directions;

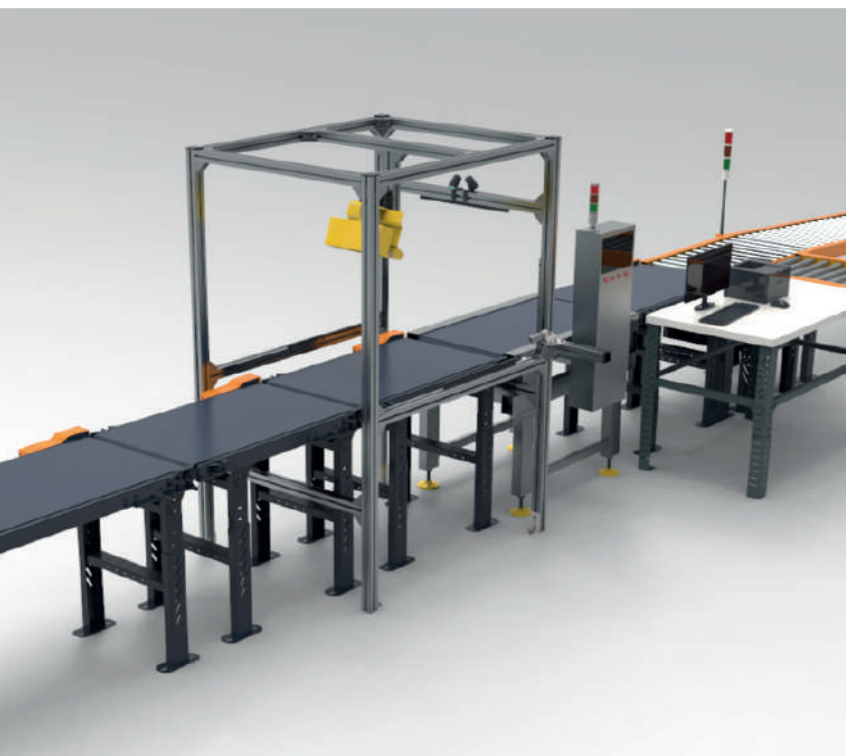
Photo fixation of goods on the conveyor belt to investigate missing orders;

Automatic transmission of reports to WMS;

Elimination of mistakes and human errors;

Can be either a stand-alone unit or part of a larger system;

12-month warranty.



Application:

-  ONLINE STORES
-  PHARMACEUTICAL DISTRIBUTION
-  COSMETICS DISTRIBUTION
-  DELIVERY

Pick-To-Tote SEMI-AUTOMATIC ORDER SELECTION SYSTEM

The semi-automatic order selection station implements the Pick-To-Tote principle, increases picking speed by 3-4 times thanks to the ergonomic picking unit, short distances to goods, and elimination of the need to carry the order to the consolidation and packing tables. The solution has proven itself in pharmaceutical distribution and is now becoming popular in e-commerce, e-grocery, and retail and local distribution centers. It is operated by the Conveyor Control System (CCS) software.

Benefits:

- Capacity of up to 1500 pcs/h;
- Picking in a container for ordering;
- No picking errors;
- Careful handling of goods;
- Increase in productivity by 3-4 times;
- Ergonomic workplaces.

Application:



ONLINE STORES



PHARMACEUTICAL DISTRIBUTION



COSMETICS DISTRIBUTION



DELIVERY



MULTI-ORDER PICKING CARTS

A warehouse employee can pick several orders simultaneously instead of picking just one, which reduces unnecessary running through the warehouse. Advanced versions of Photomechanics carts allow for weight control during the picking process and are equipped with Put-By-Light systems that speed up the process. They combine high efficiency and ease of maintenance. Use cases include pharma, cosmetics, and electronics distribution.

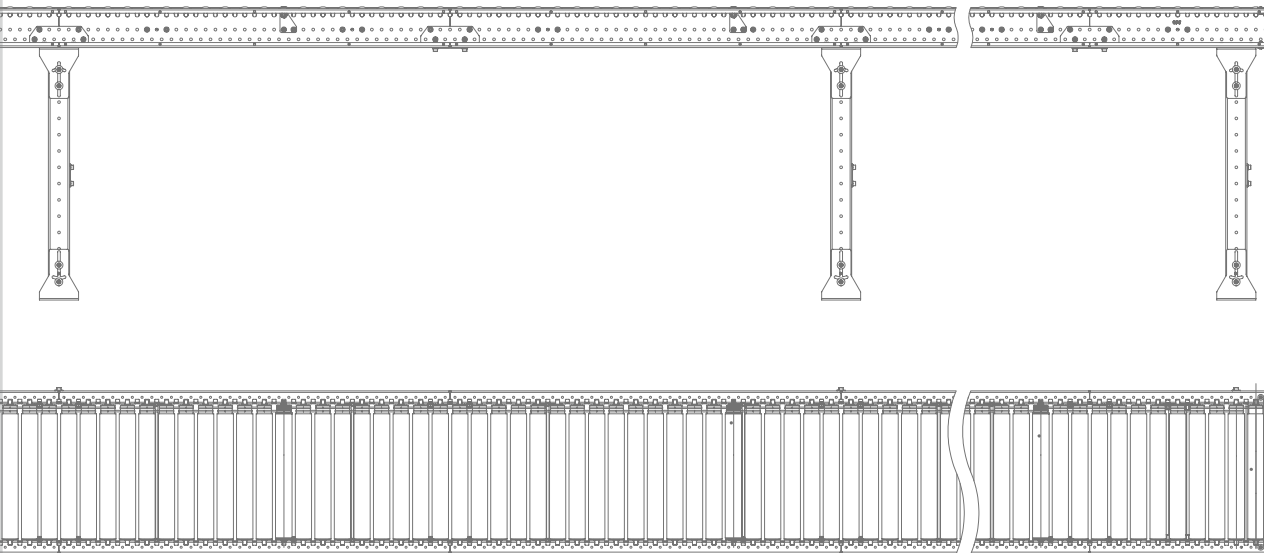
Benefits:

- Increased employee output;
- The ergonomic design of the cart ensures high productivity;
- Weight control of orders prevents mistakes;
- Advanced software;
- Flexible process scalability.

Application:

-  ONLINE STORES
-  PHARMACEUTICAL DISTRIBUTION
-  COSMETICS DISTRIBUTION
-  DELIVERY





Photomechanics:
Warehouse solutions

Production.
Software. Maintenance

Industry-specific
solutions

Sorters

Conveyor systems

Our projects



OUR PROJECTS_



Photomechanics:
Warehouse solutions

Production.
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Our projects

RETAIL

NOVEX, a leading company in Siberia's wholesale and retail trade of cosmetics, perfumes, household chemicals, and household goods, manages over 25,000 items and owns 270 retail outlets in seven regions of Siberia.

Due to an increase in orders, the company's Barnaul site needed to increase warehouse capacity, picking efficiency, and optimize it without stopping operations. Photomechanics proposed a solution: a multi-level conveyor system with a directional sorter that serves two independent parts of the mezzanine.

The system allows for goods to descend from the third, second, and first floors to the ground floor, with a layout conveyor on each mezzanine floor. At the ground floor junction of two box flows, boxes are fed into the line one by one and sorted by an automatic scanner with 20 physical targets and six virtual sorting targets. The sorter's two barrels are equipped with Put-To-Light racks with scanners, enabling up to three transport directions to be bound simultaneously.

This solution not only increases the Barnaul site's warehouse capacity and picking efficiency but also streamlines the sorting process and minimizes disruptions.



The automation project took place in two stages (6 and 8 months). The NOVEX site in Barnaul achieved the following results:

Performance was increased for up to 1,500 pcs/h;

Advanced sorting technology guarantees careful package handling, preventing any rough treatment or impact on goods;

20 sorting locations plus one anomaly location;

Implementation of an interface for the configuration of sorting criteria;

Establishment of a remote diagnostics and monitoring system;

Provision of multiple software support functions to optimize workflows.

The project was implemented in 2021.



COSMETICS DISTRIBUTION

Photomechanics was tasked by a leading Russian logistics market provider to undertake several projects involving the full range of services for supply chain management, such as warehousing, transportation by all modes of transport, packing, and customs clearance. The collaboration resulted in the successful implementation of two projects in succession which improved logistics operations, efficiency, and supply chain management through streamlined processes.

Additionally, the projects increased productivity and cost-effectiveness in transportation and warehousing, improved packing and customs clearance processes for optimal customer experience, and developed a long-term partnership between Photomechanics and the logistics market leader.

During the implementation of the first project, it was decided to equip the warehouse with a multi-level mezzanine with conveyor and sorting systems. The second project's solution was to equip the downward-operating mezzanine conveyor system with ergonomic packing tables and light, maneuverable carts for multi-order picking. The timeline for the two projects was 5 and 7 months, with launch in 2018.





Results of the first project:

- Site capacity was doubled;
- Throughput – increased to 1,700 pcs/h;
- Weight control from 50 g to 10 kg;
- Rejection of goods that did not pass quality control;
- 15 sorting and 45 virtual targets;
- Seamless integration of a Put-To-Light system;
- Remote diagnostics and monitoring system was put in place.

Results of the second project:

- Site capacity increased by 200%;
- Productivity – by 1,400 pcs/h;
- Weight control from 50 g to 6 kg;
- Our processes ensure goods and items remain undamaged throughout entire process;
- Automatic binding of orders to pallets, automatic generation and printing of documents for pallets;
- Integration with WMS via REST API;
- Web interface for manual addition / removal of goods in a pallet, generating reports, order management, etc.

The projects were completed in 5 and 7 months.
The launch took place in 2018.

TRANSPORT AND DELIVERY

Photomechanics was approached by a federal logistics operator working with online stores. The company delivers 20 million parcels annually through more than 10,000 pickup outlets and terminals in a grocery retail chain. To ensure capacity, the operator has equipped more than 20 sorting centers across Russia. The client has set the goal of increasing the capacity of the sorting centers while reducing dependency on outstaffing.

Photomechanics experts offered to integrate a Cross-Belt high-speed sorter with a precise scanning and rejection system. The following results were achieved:

- Section capacity increased by several times;
- Throughput reached 7,000 pcs/h;
- Weight control from 50 g to 10 kg;
- 20 or more sorting targets;
- Rejection of goods that did not pass quality control;
- Seamless integration of a Put-To-Light system;
- Remote diagnostics and monitoring system was put in place.

WE ARE TRUSTED BY



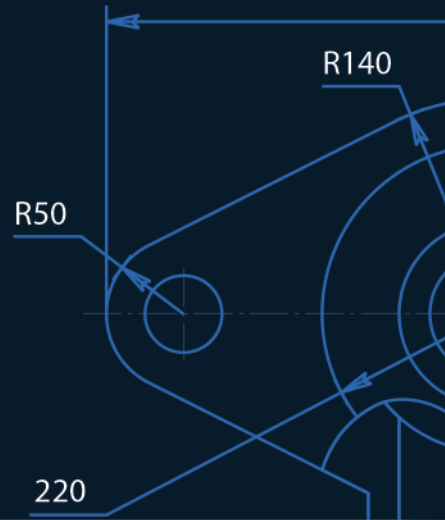
We are engineers. It's in the DNA of our company.

We maintain the highest quality of production at all stages. This is possible thanks to our own dedicated production facilities, equipment, and highly qualified personnel. All key specialists involved are our in-house employees, including programmers. 75% of all components are manufactured internally resulting in shorter delivery times.

We always think ahead. That's why we spend up to 15% of our annual revenue on the development of new solutions and components, some of which we protect with patents.

your warehouse_
in motion

your warehouse in motion



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