

CASE STUDIES





ESTABLISHED IN

STM 1981
TES 1985



PLANT AREA

6000 m²



EMPLOEES

220 persons



ENGINEERS

30 persons



MANAGEMENT

29 persons



MACHINING

32 persons



INSTALATION

70 persons



ADMINISTRATION

25 persons



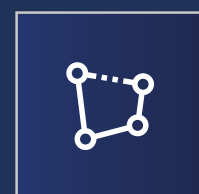
ELECTRICAL ENGINEERING

6 persons



CNC

30 items



PLOT AREA

4,5 ha



IMPLEMENTED PROJECTS

about 50 every year

COUNTRIES WHERE OUR MACHINES ARE INSTALLED:



Algeria
Angola
Antigua and Barbuda
Armenia
Azerbaijan
Belarus
Benin
Burkina Faso
Cameroon
Canada
Central African Republic
Chad
Congo
Cyprus
Czech
Djibouti
Egypt
Eritrea
Guinea
Hungary
Iran
Iraq
Israel
Ivory Coast

Kazakhstan
Kosovo
Kyrgyzstan
Latvia
Liberia
Libia
Lithuania
Mali
Mauritania
Netherlands
Nigeria
Poland
Romania
Russia
Senegal
Sierra Leone
South Africa
Tajikistan
Tanzania
Togo
Tunisia
Turkmenistan
Ukraine
USA
Uzbekistan

COMPLETE FILLING LINE FOR MINERAL WATER BASED ON SYNCHROBLOCK IN MASSPOL, POLAND



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CHECK 3D TRIP
CLICK BUTTON



About the Client

Masspol mineral bottling plant (manufacturing and water intake) is located in the town of Zubrzyk in Beskid Sadecki region of Poprad Landscape Park. The company offers mineral and spring water packed in 500, 700, 100, 1500 and 5000 ml bottles, manufactured as part of implementing product, process and eco-innovations.



Product: still mineral water



Packaging: PET bottle (5000 ml)



Capacity: 4000 bph



Solution: Increasing the number of bottles on the pallet – from 108 to 162!

Project Requirements

It's yet another STM Group realization for this client. After delivering two blow molding machines, a time has come to make another profitable development. This time, our client needed an energy-saving technology for PET production to be eligible for receiving EU funds. The project involved manufacturing a complete turnkey filling line for PET bottles.



Implementation

- ✔ Suggested solution: Synchronblok Combifill 4/16/6 FlowMatic BIG. The machine features 4 molding cavities, 16 filling nozzles and 6 capping heads
- ✔ Low energy consumption: 13W/5l bottle
- ✔ Innovative system for recovering compressed air, delivering air (up to 10,5 bar) to all peripheral devices in both, STM line and an adjacent line for 1,5l bottles at 18 000 bph
- ✔ Original bottle design – taller and slimmer than the classic model – for higher packing efficiency
- ✔ Dedicated palletizing system with 2 rotating plate pallet wrappers at the stacking places – wrapping occurs without pallet transfer
- ✔ Palletizing capacity – up to 25 pallets per hour
- ✔ Project was co-financed with funds from the Intelligent Development Programme 2014-2020



COMPLETE FILLING LINE FOR BEER BOTTLING AND CANNING FOR DARUVAR BREWERY



CHECK VIDEO
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CAN FILLING LINE



CHECK VIDEO
CLICK BUTTON
PALLETIZING SYSTEM



CHECK VIDEO
CLICK BUTTON
PET BOTTLE FILLING LINE



CHECK 3D TRIP
CLICK BUTTON



About the Client

In the very center of the Croatian town of Daruvar, there is a brewery of the same name. Founded in 1840, it is the second oldest brewery in the country. As the only one outside of the Czech Republic, it produces beer according to traditional Czech technology, which makes it unique in this field. In addition to beer in glass bottles, the company also offers it in PET bottles and cans, produced as part of the EU project "Improving the competitiveness of Pivovar Daruvar d.o.o. through investments in digital and green transformation."



Product: beer



Packaging: aluminum can (330 ml + 500 ml) + PET bottle (2000 ml)



Capacity: 15 000 cph + 3 000 bph



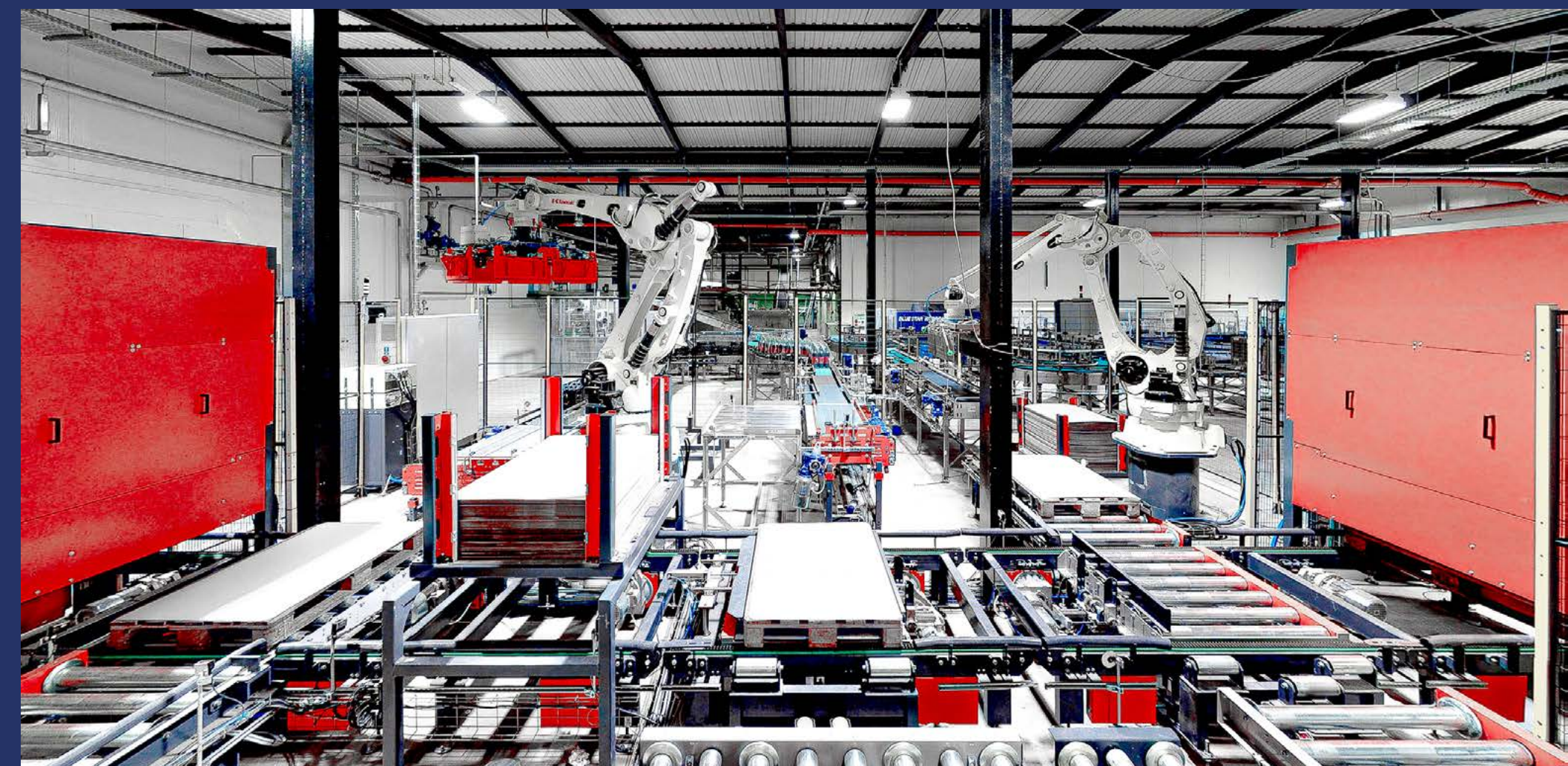
Solution: Installation of two bottling lines without interfering with the existing system



Solution: Adapting a new palletizing and depalletizing system for the existing glass bottle filling line – process automation

Project Requirements

Modernizing the production of Daruvar Brewery required designing a system that would take into account the existing line for bottling beer in returnable glass bottles, as well as all the piping and media connections that had evolved over the years of the brewery's operation. The project included the construction of two complete canning and PET bottling lines as a turnkey solution.



Implementation - Can Filling Line

- ✔ Suggested solution: Arrow CAN 40/6 ISO. The machine features 40 isobaric filling nozzles and 6-head seamer
- ✔ Low oxygen pickup - about 35 ppb
- ✔ Efficient pasteurization thanks to dynamic pasteurizing unit which adjusts the conveyor speed and temperature
- ✔ Water recovery system
- ✔ Quick change of can format - from 500 ml to 330 ml
- ✔ Packing system adapted to 3 formats: 6x4 items on a tray with foil or 3x2 and 2x2 packs wrapped in foil only- up to 30 packages per minute



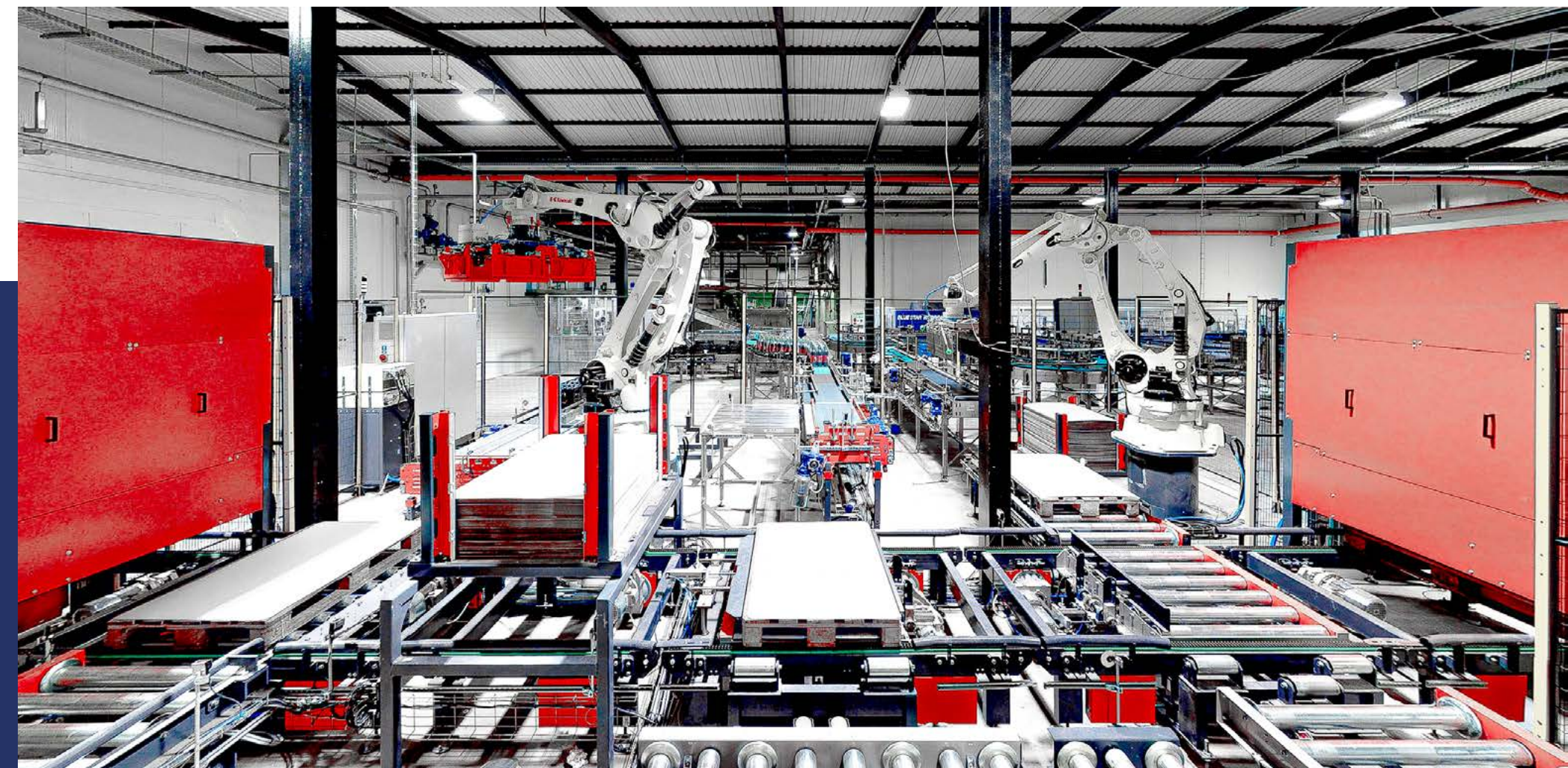


Implementation - Palletizing System

- ✔ **Complex palletizing system based on two robots - maximum efficiency up to 59 pallets/hour**
- ✔ **Can line works independently, while second robot works on either PET or glass line**
- ✔ **Palletizing cans with the capacity of 15000 cph**
- ✔ **Palletizing PET bottles with the capacity of 3000 bph**
- ✔ **Depalletizing crates with empty returnable glass bottles with the capacity of 20000 bph**
- ✔ **Palletizing crates with full returnable glass bottles with the capacity of 20000 bph**
- ✔ **Project co-financed with European Funds as part of the Recovery Assistance for Cohesion and the Territories of Europe - REACT-EU**

Implementation - PET Bottle Filling Line

- ✔ Suggested solution: Arrow PET 20/40/8 ISO Beer. The machine features 20 rinsers, 40 isobaric filler nozzles i 8 capping heads
- ✔ Innovative system for recovering compressed air (up to 10,5 bar) to be reused by the blow molding machine Blueline 3 Standard
- ✔ Double evacuation of oxygen before filling
- ✔ Low energy consumption: 6W for a 2-liter bottle





The particular goal of this investment was to become independent of external services for beer bottling and canning, and to increase production efficiency by using green and digital technologies as well as innovative business processes, resulting in:

- reducing energy consumption by 5.93% kWh/hl
- reducing beer loss in production by 22.96 l/hl
- reducing the sewage load by 0.094m³/hl
- increasing revenue from sales and exports by 26%
- maintaining the existing 53 employees and employing 15 new ones

COMPLETE OIL FILLING LINE FOR WILMAR



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About the Client

Wilmar is a Polish company in the food industry, located in Lower Silesia. Founded in 1990, it specializes in rapeseed processing. The company combines the exceptional and versatile properties of this plant with action for sustainable development. Wilmar delivers products developed within its own research department and with technologies created from scratch. The quality of Wilmar's food products is guaranteed with the implementation and certification of the FSSC 22000 quality control system. This confirms that thanks to the cooperation with STM Group, oil packaging meets the most demanding safety criteria.



Product: rapeseed oil



Packaging: PET bottle (500ml, 1l, 2l, 3l, 5l, 10l) + glass bottle (0,5l, 0,75l, 1l)



Capacity: 8000 bph for 1-litre bottles



Greenfield Project: system implemented from the ground up

Project Requirements

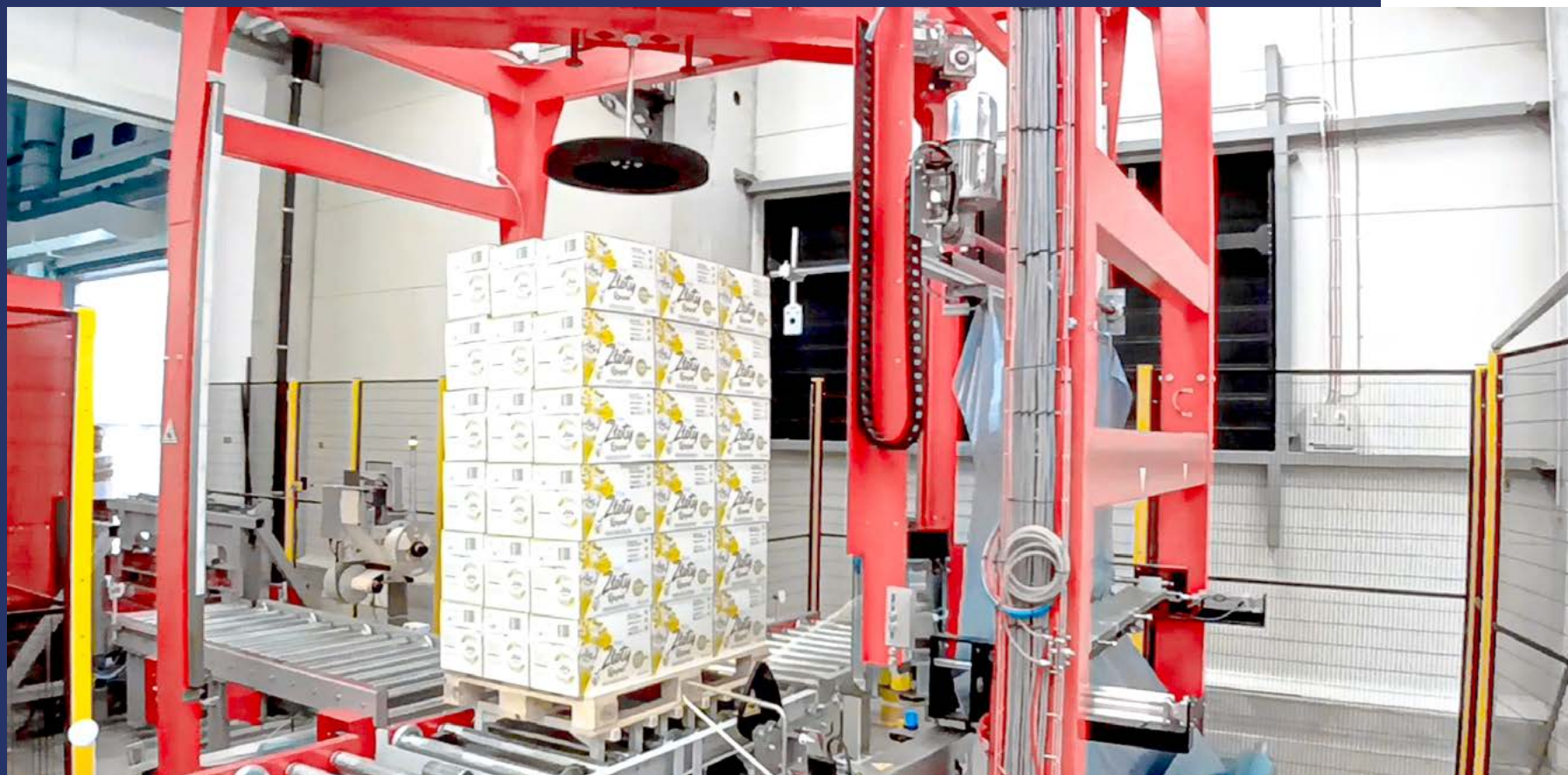
This ambitious project involved designing and manufacturing bottling lines for glass and PET containers in 9 different formats! Moreover, the energy-efficient solutions implemented in the project, paved the way for the company to obtain EU funding.



Implementation

- ✔ **2 Blow molding machines**
 - **Blueline 6 Hitech (500ml – 2l bottles) - capacity up to 10 500bph**
 - **Blueline 1 BIG MAX (3l – 10l bottles) - capacity up to 1100bph**
- ✔ **Innovative system for recovering compressed air, delivering air (up to 10,5 bar) to all peripheral devices on the manufacturing site.**
- ✔ **2 Monoblocks**
 - **Arrow PET/Glass UNIV 20/6 Weightmatic (500ml – 2l bottles) featuring 20 filler nozzles and 6 capping heads - capacity up to 8100 bph**
 - **Arrow PET 9/3 Weightmatic BIG (3l – 10l bottles) featuring 9 filler nozzles and 3 capping heads - capacity up to 1100 bph**





Implementation

- ✔ **3 Labelling machines:**
 - For application of “wrap-around,” self-adhesive labels
 - For application of self-adhesive labels on square containers
 - For “hot glue” application of paper labels

- ✔ **Carton packaging using the “wrap around” method - up to 15 packs per minute**

- ✔ **Automatic palletizing based on a robot with a universal gripper for both cardboard boxes and PET bottles + pallet wrapper with a rotating arm**

- ✔ **EURO and DHP pallet handling**

- ✔ **Additional module for covering the pallet with film from above**

- ✔ **The project was co-financed from the Rural Development Program for 2014-2020.**



COMPLETE FILLING LINE FOR WATER AND CARBONATED BEVERAGES FOR URGA WATER



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About the Client

The founders of the 885 water brand (obtained from a depth of 885 feet/170m) set themselves the goal of following European Union guidelines: “bottled at the source.” The Latvian company started operating in 2021 and currently produces carbonated and still mineral water in 500 and 1000 ml bottles.



Product: water & soft drinks



Packaging: PET/ BIO PET/ R PET bottles (500 ml + 1 500 ml) with a Sport Cap



Capacity: 6000 bph



Greenfield Project: system implemented from the ground up

Project Requirements

The main goal of the project was to achieve maximum process automation to reduce service costs. It involved building a complete PET bottling line as a turnkey solution in a completely new production hall.

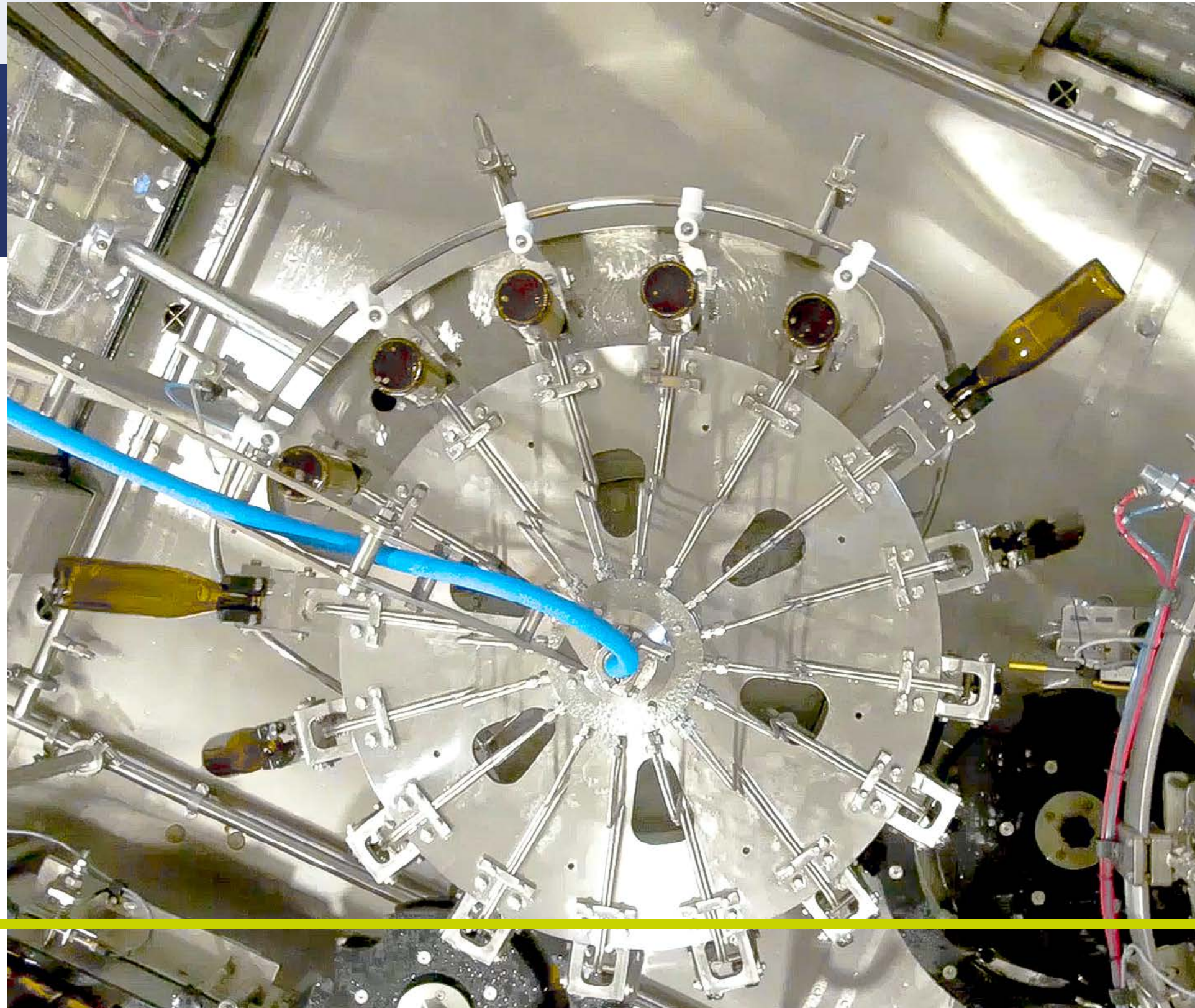


Implementation

- ✔ Suggested solution: Blow molding machine Blueline 4 STD + Triblock Arrow PET 20/40/8 ISO. Machines feature 4 blowmold cavities + 20 rinsers, 40 filler nozzles and 8 capping heads
- ✔ Automatic process control control in the blow molding machine, allowing for remote machine diagnostics
- ✔ STM JG6 Flowmix mixer with a capacity of up to 9,000 l/h
- ✔ STM Mega Roll 9T labeling machine with a capacity of up to 10,000 bph
- ✔ Eco-friendly label adhesion
- ✔ Packaging system adapted for 2 formats: 3x4 and 3x2 packages wrapped in foil - up to 30 packages/min
- ✔ Bottle made of 25% recycled plastic
- ✔ Downsizing line operation to 3 people



COMPLETE HYBRID LINE FOR BEER CANNING AND PETBOTTLING FOR BROWAR ZAMKOWY



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CHECK 3D TRIP
CLICK BUTTON



About the Client

Browar Zamkowy is one of the oldest breweries in Poland, founded in 1567 on the castle hill in Raciborz. With an annual production capacity of 60,000 hl, this historic brewery is constantly expanding its operations, opening two new bottling lines in 2021. In order to meet the demands of consumers and grocery store chains, the facility, which until then had specialized in producing beer in returnable glass bottles, has undergone another stage of evolution.



Product: beer



Packaging: glass bottle (330 + 500 ml) & aluminum can (500 ml)



Capacity: 4500 bph + 3500 bph & 6000 cph



Solution: designing as many shared stages for both filling processes as possible

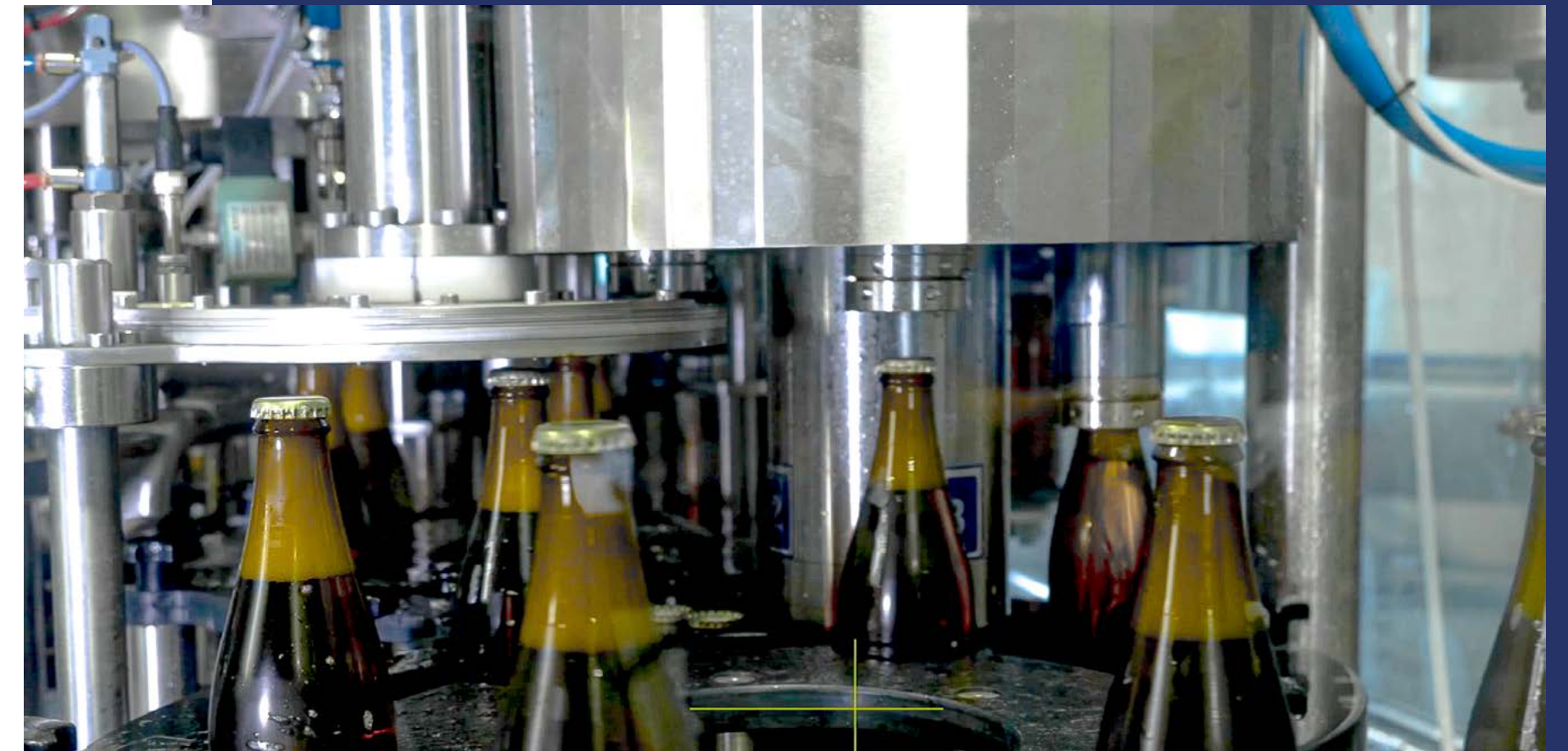
Project Requirements

Designing two production lines on a 230 m² space was a significant challenge. To meet the customer's expectations, we proposed the installation of hybrid equipment. We opted for universal machines that would be able to handle various packaging formats, thus taking up less space.



Implementation

- ✔ Suggested solution for glass bottles: Arrow Glass ISO Beer 16/16/4. Triblock featuring 16 rinsers, 16 isobaric fillers and 4 capping heads
- ✔ Suggested solution for aluminum cans: Arrow Can 16/2 ISO Beer. Machine featuring 16 isobaric fillers and 2 seamers
- ✔ 4 universal devices for both lines: depalletizers, filling level inspector, air knives and labelling machines
- ✔ Flash pasteurizer with a capacity of 3000 l/h to minimize the use of space
- ✔ Conveyors installed at 3 meters high to fully utilize the space above
- ✔ Innovative system for dosing nitrogen in the cans before seaming
- ✔ Minimizing oxygen pickup in bottled beer down to 100 ppb thanks to double oxygen evacuation before filling



FILLING LINE FOR THE BEST MINERAL WATER IN MUSZYNA, POLAND



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CHECK VIDEO
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INTERVIEW



About the Client

MILA MUSZYNA is a new brand of premium mineral water which has been extracted from the Milusia borehole in Muszyna since 1936. It comes from healing water deposits located at a depth of 176 m. The water has been ranked first in NutriRank mineral water quality among 197 brands for 15 years. The ranking of mineral waters is calculated taking into account the mineral content of the water in question in relation to the body's daily mineral requirements. The recommended amount of calcium in the water should exceed 150 mg, and magnesium 50 mg per liter, otherwise 0.05 for each such component is subtracted from the NutriRank value.



Product: mineral water



Packaging: PET bottles (500 ml + 1000 ml)



Capacity: 4500 bph



Solution: Implement PET bottle filling line

Project Requirements

The project contains the design of PET bottle filling line with a capacity of 4,500 bottles per hour for MILA - MUSZYNA brand. This is a significant contribution by STM GROUP to the development of the premium mineral water segment in the domestic market.



Implementation

- ✔ A set of plate conveyors
- ✔ Saturator STM mod. JS6 for carbonated water production
- ✔ Newtek labeling system with optical orientation using cameras and embossing recognition system
- ✔ Triblock STM mod. ArrowPet 16/24/6 ISO for bottling carbonated or non-carbonated beverages
- ✔ Mobile CIP station



COMPLETE FILLING LINE FOR BEER BOTTLING FOR FABRICA GRIVITA BREWERY



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About the Client

In the heart of Romania - Bucharest there is located the most modern craft brewery Fabrica Grivita. The brewery's history dates back to 1869 when a German entrepreneur opened the first brewery in Bucharest and made it famous throughout the country. However, since 2019 Fabrica has been operating as an independent brewery as well as a tap-room. Their beers are available on taps and filled into glass bottles in a wide range of locations across the country, from craft beer bars and specialist shops to several online platforms.



Product: beer



Packaging: glass bottles (330 + 500 ml)



Capacity: 6000 bph – 7000 bph



Solution: Comprehensive fully automatic beer bottling line from depalletizing to palletizing

Project Requirements

The project required us to take a comprehensive approach to a modern bottling line in a craft brewery. Current times are setting the trend for fully automatic lines, even small and medium outputs. This project confirmed this trend of robotization and process automation.



Implementation

- ✔ **Full-Height, Fully Automatic Depalletizer:** The TES STM DPL-S-GLASS-6 depalletizer by TES STM GROUP ensures a streamlined start to the beer bottling line, reducing the need for extensive manual labor. This depalletizer is seamlessly integrated with a vertical conveyor, transporting bottles efficiently from a high level to the beer bottling machine's conveyors.
- ✔ **Beer bottling machine for beer in glass bottles – STM ArrowGlass 24/24/6 ISO BEER:** Designed for precision and efficiency, this glass bottle filler employs double pre-evacuation using a vacuum pump, high-pressure hot water fobber, a proportional main product valve and carbon dioxide modulation valves. The system fills each bottle with beer, maintaining a smooth and efficient production process while minimizing oxygen pick-up for the highest product quality.
- ✔ **Quality Control Mechanisms:** Advanced quality control measures include a fill level inspector for accurate product quantity verification and a checkweigher for full box inspection. These automated processes ensure that each bottle and box meet stringent quality standards.





Implementation

- ✔ **Air Knives for Drying:** After the beer bottling and fill level checks, containers pass through TES STM GROUP's air knives, efficiently drying the containers before label application.
- ✔ **Cutting-Edge Labeling Technology:** Integrated with the beer bottling line, Newtec's state-of-the-art labeling technology provides accuracy and reliability. A 3-head self-adhesive labeler applies up to three labels per bottle—front, back, and neck label.
- ✔ **Wrap-Around Cartoning Machine:** Atlanta Packaging's Raffaello wrap-around cartoning machine expertly packs beer bottles into cardboard boxes at a stable speed of up to 15ppm.
- ✔ **Palletizing System – TES STM GROUP's PAL0:** This system, although it is our simplest palletizing system, it is based on a gripper of our production and a robot. This system is compact and allows palletizing at one of two storage locations, where the second location is operated by an operator at the time (taking a full pallet, bringing an empty pallet).

COMPLETE FILLING LINE FOR BEER BOTTLING FOR TARNOBRZEG BREWERY, POLAND



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About the Client

Tarnobrzeg Brewery is the first new-wave brewery in Poland, rebuilt in the premises of the old Tarnobrzeg brewery, which operated for 120 years until its closure in 1979. The passion, talent and commitment of the founders contributed to the reactivation of beer production in a new, refreshed form in line with the philosophy of boiling beer with natural methods from the best ingredients. Currently, Brewery Tarnobrzeg's beers are available in more than 30 locations across Poland.

Project Requirements



Product: beer



Packaging: glass bottles (330 + 500 ml)



Capacity: 4200 bph



Solution: Comprehensive fully automatic beer bottling line from depalletizing to palletizing

The project involved reactivating the Tarnobrzeg Brewery through a major technological upgrade. The main driving force was the implementation of a complete filling line for beer bottling with a capacity of 4,200 bottles per hour. A joint project between STM GROUP and ZipTech allowed the brewery's production capacity to be significantly increased, which currently stands at around 20,000 hectolitres per year, placing the Tarnobrzeg Brewery at the forefront of Polish craft breweries in terms of modern technology and production capabilities.



Implementation

- ✔ Triblock 16/16/4 ISO EPV BEER,
- ✔ Semi-Automatic Depalletizer,
- ✔ Self-Adhesive Labeller UNO ADE PRO,
- ✔ Data Printer, Flat Conveyors XPP,
- ✔ Infeed table for empty bottles,
- ✔ Collection Table for finished product.
- ✔ The whole system allows for the production of the highest quality beers at a volume of 20,000 hectolitres per year and places the Tarnobrzeg Brewery among the leaders of Polish craft breweries in terms of modern technology and production capabilities.





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