

## COMPLETE LINES



#### **ABOUT THE COMPANY**

The subject of STM's activity is designing and producing complete filling lines for glass, cans and PET bottles. We deliver turnkey solutions, including accompanying machines which are intended for PET bottle blow molding, depalletizing of glass containers and aluminum cans, filling, packing and palletizing all kinds of beverages and other liquids, including the chemical ones. Depending on Client's individual needs and requirements, in our offer one can find not only single filling machines but also whole filling lines as well as comprehensive consulting which covers the manner of positioning the equipment and selection of certain elements.

#### **HISTORY**

STM was established in 1981. Back then, our specialization comprised repair and refurbishment of filling machines. As the company was growing and started opening for the new markets, the offer of STM broadened including also installation of filling lines. At the beginning of 80's, as one of the first companies in Poland, STM started completing PET bottles production lines with the output of up to 12000bph. As time was passing, we were offering machines with higher and higher performance: 24000bph. We also started working on production of our own filling machines and the machines for PET packaging production. Today STM is a stable company with over 40-year long experience in designing and implementing new technologies for food industry.

TES was established in 1987 as a typical engineering company, which since the beginning aimed at the highest quality of tasks providing equipment guaranteeing the most modern technologies in the packaging industry:

- robotic automation systems for technological sections of any processes
- dedicated machines and devices for defined applications
- blow molding machines to make PET containers from preform

In the year 2015 STM and TES joined together to form STM GROUP, which allowed us to offer complete bottling lines using the many years of experience of both companies. Shortly afterwards, HTG, our branch company for the African markets, joined the group. Recent years have also brought a very rapid development of our beer machines and the creation of STM BEER, a department dedicated to the most difficult and complex bottling medium - beer.

#### STM GROUP'S TECHNICAL BASE

Currently STM GROUP employs 220 engineers and technicians. We have a production plant with total floor area of 6000 m2. We have a cutting edge technical base including a vast machine park with over 30 CNC machines and a professional construction office equipped with state of the art software ensuring high quality of manufactured products and enabling to control management of implemented projects on an on-going basis.



#### **ESTABLISHED IN**

STM 1981 TES 1985



#### **PLANT AREA**

6000 m<sup>2</sup>



#### **EMPLOEES**

220 persons



#### **ENGINEERS**

30 persons



#### **MANAGEMENT**

9 persons



#### **MACHINING**

32 persons



#### **INSTALATION**

70 persons



#### **ADMINISTRATION**

25 persons



#### **ELECTRICAL ENGINEERING**

6 persons



#### **CNC**

30 items



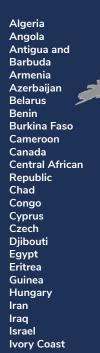
#### **PLOT AREA**

4,5 ha



#### **IMPLEMENTED PROJECTS**

about 50 every year



#### **COUNTRIES WHERE OUR MACHINES ARE INSTALLED:**



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 LINES**

**CHECK VIDEO** 

Our core business is complete filling lines - turnkey solutions. Beginning with a depalletizing or blow molding machine, we are able to provide the complete technological line up to palletizing. Most of the crucial machines are of our production like blow molding machines, filling machines, labeling machines, conveyors or palletizers. We select other equipment from our reputable partners. For so many years of work, we have developed standards and excellent service conditions for external machines. We are the largest Polish integrator of bottling equipment. The most important aspect is that we are the ones who take responsibility for the whole line and we carry the manufacturer's warranty for all the equipment in the completion. Of course, all the machinery standards of the European Union are the basis of our operation. We work with the best and we work for the best. Join the ranks of our satisfied customers!





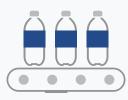


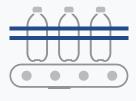


• COMPLETE FILLING LINES • BLOW MOLDING MACHINES • FILLING MACHINES • MIXERS AND SATURATORS









SYRUP ROOM

PACKING AND PALLETIZING

LABELLING

CONVEYORS



 ROBOTICS AND AUTOMA-**TION SYSTEM** 



DEPALLETIZING



CIP



DRYING

#### **DEPALLETIZING**



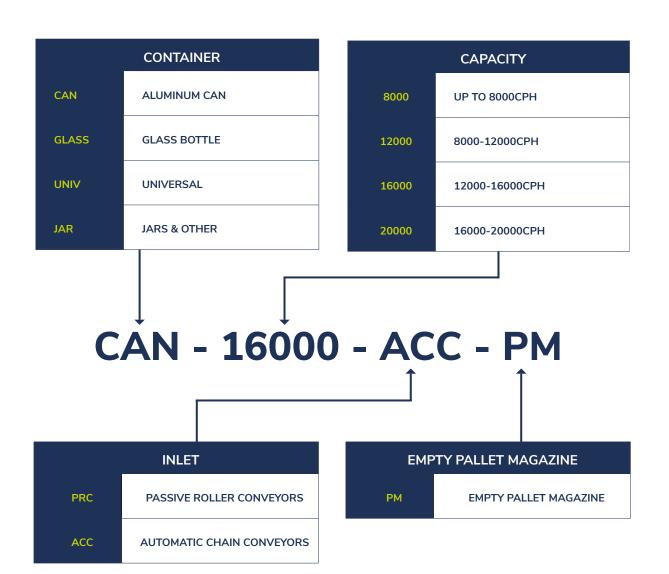








#### **POSSIBLE CONFIGURATIONS:**



#### PET BLOW MOLDING





CHECK VIDEO CHECK 3D TRIP

#### **MAIN ADVANTAGES:**



**HIGH EFFICIENCY - 99%** 



**LOW ENERGY USE:** 1,5W\* FOR 0,5L BOTTLE



**FURTHER SAVINGS DUE TO** SIGNATURE AIR RECOVERY AND RECUPERATION SYSTEMS



**UNIQUE HIGH EFFICIENCY** 2000 BOTTLES/HOUR FROM ONE CAVITY

- ALL ELECTRIC BASED ON SERVOMOTORS
- SMOOTH OPERATION
- HIGH CAPACITY
- **OVER TOP QUALITY BOTTLES**
- MINIMIZED MAINTENANCE TIME
- QUICK MOULD CHANGE
- SIMPLIFIED BOTTLE NECK CHANGE SYSTEM
- **ONLINE MONITORING**





#### AIR RECOVERY SYSTEM

An option in the machine, makes it possible to save 20-50 % of air consumption for blow moulding.

Savings unique on the global scale are possible thanks to the advanced Eugen Seitz valves and sets of containers and sensors to control the recovered air pressure and the appropriate airflow pattern.

It is also possible to design a dedicated air recovery system to supply a complete bottling line or other plant equipment.

# SAVINGS from: 20% to: 50% LOWER USE OF COMPRESSED AIR

#### MULTIFLEX SYSTEM

An option in the machine, that enables the use many preform neck sizes on one blow molding machine. Complete neck changeover time takes 1-2 hours, depending on the size of machine.



#### PREFERENTIAL HEATING SYSTEM

Thanks to the high-precision system of temperature control and preform transfer in blow moulding machines it is possible to produce a variety of packages and bottles, both asymmetrical and oval, without compromising their quality and aesthetics.



# HEATING DIRECTION FAST ROTATION SLOW ROTATION HEATING DIRECTION Cold cone hot zone preform transfer direction

#### ULTRAMODERN HOT FILL VERSION

The machines in the BLUELINE HF series can produce PET containers resistant to liquid temperatures of up to 88 °C.

Special design and material solutions led the way of the BLUELINE machines of the HOT FILL series to the market of highly specialized machines and expanded the range of their applications as a result.

It is a proven solution used in the production of natural juices, ecological products and liquids preserved in high temperatures.

#### Implementation method:







liquid nitrogen application



heated up blow moulds



additional cooling of the container after lowering the moulds



lower air consumption, "Hot filling+" compared to "classic hot filling"



using standard bottle bottom



low bottle weight



PET container cooled with compressed air using a stretching rod

### **PET BLOW MOLDING - PARAMETERS**

		PET B	OTTLE 2-STAG	E STRETCH B	LOW MOLDING	i		
Model	Number of cavities	Volume	Max height	Max diameter	Max neck diameter	Efficiency 500ml	Efficiency 1500ml	POSSIBLE OPTIONS
Blueline 2 STD	2		345	125	38	3600	3200	MF, DG
Blueline 2 HT	2					4000	3500	MF, DG, PH
Blueline 3 STD	3	200-2500ml		105		5600	4800	-
Blueline 4 STD	4			125		6600	6200	MF, DG
Blueline 4 HT	4					7500	7000	MF, DG, PH
Blueline 6 STD	6			105		10000	9000	MF
Blueline 6 HT	6					12000	10500	MF, PH
Blueline 8 HT	8	200-2000ml		92		16000	14500	MF, PH
Model	Number of cavities	Volume	Max height	Max diameter	Max neck diameter	Efficiency 5000ml		POSSIBLE OPTIONS
Blueline 1 BIG	1		360	175	48	1100		MF, PH, DG
Blueline 2 BIG	2					2200		MF, PH, DG
Blueline 3 BIG	3	1-61				3300		MF, PH, DG
Blueline 4 BIG HT	4					4000		MF, PH, DG
Model	Number of cavities	Volume	Max height	Max diameter	Max neck diameter	Efficiency 10000ml		POSSIBLE OPTIONS
Blueline 1 MAX	1		410	240	48	800		MF
Blueline 2 MAX	2	1-12				1500		MF
Blueline 3 MAX	3					2200		MF
		PET BOTTLE 2	-STAGE STRE	TCH BLOW MO	DLDING – FOR I	HOT FILL		•
Model	Number of cavities	Volume	Max height	Max diameter	Max neck diameter	Efficiency 500ml	Efficiency 1500ml	POSSIBLE OPTIONS
Blueline 4 HT HF	4	200-2500ml	345	105	38	4500	4200	MF
Blueline 6 HT HF	6		345	105		7200	6300	MF
Blueline 8 HT HF	8		345	92		9600	8700	MF
		PET	CAN 2-STAGE	STRETCH BLO	OW MOLDING		,	
Model	Number of cavities	Volume	Max height	Max diameter	Neck - lid diameter	Efficiency 250ml Efficiency 2 petaloid champagne b		
Blueline 10C HT	10	200-1000ml	205	85	lid 200/202	10000 8000		000

#### FILLING MACHINES

#### ARROW MACHINES SERIES – FILLED WITH INNOVATION

The highest quality and simplicity of operation allows our equipment to be used efficiently in various climate zones and implemented to process a variety of liquids, packaging units, capping types and hygiene levels.

#### **MAIN ADVANTAGES:**

- NECK HANDLING ALLOWS FOR QUICK AND EASY FORMAT CHANGEOVER – UP TO 10 MINUTES
- REDUCED MAINTENANCE TIME AND COST
- MAXIMUM HYGIENE WITH SIGNATURE ARROW PURITY SYSTEM APS®
- OPERATOR FRIENDLY 15" TOUCH PANEL WITH AUTO DIAGNOSTIC SOFTWARE
- PRECISE BOTTLE POSITIONING
- LOTS OF OPTIONS DEDICATED TO CUSTOMERS REQUIREMENTS



## FILLING - CAN



**CHECK VIDEO** 

**STM CAN** series machines feature devices equipped with isobaric filler valves with mechanical or pneumatical steering.

MACHINES are designed for filling and seaming PET or aluminium cans of regular cylindrical shape.

Seamers are suitable to seam a wide range of round containers filled with still drinks, beer or carbonated soft drinks.

Filler and seamer are mechanically synchronized, with only one drive, which can smoothly guide the filled containers to the seamer without spillage.

#### **Output Range:**

Fillers are from 16 to 60 valves with speed from 6.000 to 40.000 cans per hour

#### **Application:**

RTD, CSD, beer, carbonated and still water, alcopops and wines

#### Volumes:

All cans based on common worldwide standards (slim, sleek, standard)

#### Capping:

200 and 202 lid

#### Filling valve:

You can choose between simple in maintenance mechanical steering valve or a sophisticated modern electro-pneumatic.







## FILLING - ISO ISOBARIC



**CHECK VIDEO** 

ISO series machines feature devices equipped with isobaric filler nozzles, designed for filling all types of carbonated fluids even very foaming like beer.

It has an innovative design and is equipped with special features for both filling and moving the bottles, which guarantee great advantages in terms of performance and operating flexibility. The valve is also able to fill non-carbonated products.

Filler nozzles feature simple design that ensures high level of hygiene and ease of use. Parts in contact with the filled product are made of AISI 316L stainless steel. Machines in their standard version are suitable for CIP. Depending on the model, ISO series machines can be prepared for PET containers as well as GLASS containers.



Fillers are from 12 to 72 valves with speed from 3.000 to 24.000 bottles per hour

#### **Application:**

RTD, CSD, beer, carbonated and still water, alcopops and sparkling wines

#### Volumes:

0,2-2,51

#### Packaging:

Glass, PET bottles



#### Capping:

Plastic screw cap, crown cap, ROPP, sport cap, snap-on

#### Filling valve:

It is made of stainless steel and are easily accessible for cleaning purposes. Special mechanical type is dedicated to high foaming products and beer as well. It is equipped with innovative residual evacuation system.







## FILLING - NC NON-CARBONATED



**CHECK VIDEO** 

NC series machines are devices equipped with "overflow" filling valves, for non-carbonated products, such as still water and still beverages.

Filler nozzles feature simple design that ensures high level of hygiene and ease of use. In case of NC series machines the bottle always remains at the same height, which provides smooth transfer of the bottle.

Machines in their standard version are suitable for CIP and feature intermediate tank with circulation pumps.

Depending on the model, NC series machines can be prepared for PET containers as well as GLASS containers or HDPE containers.

Parts in contact with the filled product are made of AISI 316L stainless steel.

#### **Output Range:**

Fillers are from 9 to 72 valves with speed from 3.000 to 30.000 bottles per hour

#### **Application:**

All non-carbonated liquids from Food & Beverage Industry

#### Volumes:

0,2-51

#### **Packaging:**

Glass, PET or HDPE bottles

#### Capping:

Plastic screw cap, crown cap, ROPP, sport cap, snap-on

#### Filling valve:

The high flow capacity filling valves are reliable, easy to disassemble and extremely comfortable design.





## FILLING - HF



CHECK VIDEO

Hot-fill Machines are based on over-flow filling valves technology fill requires proven technical solutions to ensure long shelf life and product safety. Our machines can work with liquid nitrogen used in PET containers and classic hot-fill popular in glass bottles. We have invented special isolated receivers to maintain the crucial parameters required by high temperature technology.



Fillers are from 9 to 40 valves with speed from 3.000 to 20.000 bottles per hour

#### **Application:**

All non-carbonated liquids from Food & Beverage Industry intended to hot-fill filling process

#### **Volumes:**

0,2-2,51

#### Packaging:

Glass, PET bottles

#### Capping:

Plastic screw cap, crown cap, ROPP, sport cap, snap-on

#### Filling valve:

Our valves are equipped with a number of termo sensors to ensure the most precise and safe filling in high temperatures.







## FILLING - WM WEIGHTMATIC



**CHECK VIDEO** 

WM series machines feature devices equipped with two-phase weight filling valve for high precision from +/- 0,2 up to 2 grams per volume container.

It's great solution for expensive products which should be fill without any losses like edible oil or ESL milk.

Great advantage is contactless filling method thanks to risk of contamination is reduced to minimum, all surfaces which have contact with product are made of AISI 316L stainless steel.

Our proprietary STM program manages that machine ensures tremendous repeatability of every package poured.



Fillers are from 9 to 40 valves with speed from 3.000 to 22.000 bottles per hour

#### **Application:**

Dairy products, edible oils, juices, water, dense products

#### Volumes:

0,2-2,51

#### Packaging:

Glass, PET bottles

#### Capping:

Plastic screw cap, crown cap, ROPP, snap-on

#### Filling valve:

Weight filler nozzle can fill various products of different properties, aerated products do not affect the accuracy of net weight filling.

It does not affect the temperature, viscosity and foaming as well.







## FILLING - FM FLOWMATIC



CHECK VIDEO

FM machines called also Flow Matic are equipped with electronic flow meters manufactured by Endress+Hauser.

Flowmatics are designed for non-carbonated clear liquids like juices, milk, water.

Filled bottles are never in direct contact with valves surfaces, parts in contact with product are made if AISI 316L stainless steel.

Our proprietary STM program manages that machine ensures tremendous repeatability of every package poured even to +/- 0,2% of rated volume.

#### **Output Range:**

Fillers are from 9 to 40 valves with speed from 3.000 to 22.000 bottles per hour

#### **Application:**

Dairy products: juices, water, milk, sensitive products

#### Volumes:

0,2-2,51

#### **Packaging:**

Glass, PET bottles

#### Capping:

Plastic screw cap, crown cap, ROPP, snap-on, sport cap

#### Filling valve:

Extremely clean valve is perfect for cold filling of sensitive products.

This is controlled by individual flow rate gauges, each fitted to its respective delivery valve, through which the quantity of product to be poured into the bottle is dosed with extreme precision.





#### FILLING SYNCHROBLOCK



Combination of classic blow molding machine and Filling line with additional equipment for increased hygiene protection. Designed to handle both weight filling and volumetric filling

#### **Advantages:**

- Reduction of space in the production plant
- Bottling with significantly hygienic
- No possibility of secondary contamination
- Reduction in electricity consumption (no buffer and transfer zones)
- No rinser reduced water consumption



Filling Section – From 12 to 24 valves with speed from 3.000 to 10.000 bottles per hour

Blowing Section – From 2 to 6 cavities with HiTech full electric machine in standard

#### **Best Solution for Sensitive Products:**

- ARROW PURITY SYSTEM (according to the 2006/42/EC machinery directive EN 1672-2, all parts of the filling valves do not come into contact with the product),
- Self-draining table for transferring all potential contaminants into the outlets,
- HEPA CLASS H14 inlet air filter system for the machine, filtration efficiency 99.995 % for particles size 0.3 micrometre.





**JUICE** 

**MILK AND DAIRY** 





OIL

**WATER** 



#### **PROCESS MACHINES**

#### **MIXERS, SATURATORS & MIXOSATURATORS**

#### **ADVANTAGES OF ALL STM'S PROCESS MACHINES:**

- Maximum hygiene
- Reduced maintenance
- High quality components
- Automatic controlled
- Made of stainless steel AISI 316L and AISI 304
- Modern solutions and indispensable technologies adapted to guarantee the highest quality
- The machines are made in compliance with EHEDG standards concerning hygiene and adapted to support CIP.
- High stability of the saturation process ensured by electromagnetic E+H flow meters and constant-pressure modulating valves
- The process of carbonated water/drink production is controlled by means of a B&R controller that is easy to operate, while at the same time being technologically advanced. The control algorithm requires only to be given the syrup concentration in a drink and the quantity of prepared drink.









#### **MIXERS**

JG FlowMix Series - capacity 3000-20000l/h of ready product

- Deaeration of water
- Mixing water and syrup in the required proportions
- Cooling down the drink before carbonation (if required)
- Carbonation of the beverage (if required)

#### **CARBONATORS**

JS Series- capacity 3000-20000l/h of ready product

- Deaeration of water
- Cooling down water before carbonation
- Carbonation of water

#### **PROCESS MACHINES**

#### SYRUP ROOM, CIP

#### **SYRUP ROOM**

- Complete system to process crystal sugar, sugar syrup or artificial sweeteners
- Capacity 3000-20000l/h of ready product, with the design matching our premix machines
- Sterilizers, homogenizers, sugar feeders, process vats and other auxiliary devices are made of materials designed to be used in food processing industry, mainly stainless steel AISI 304, but also AISI 316L.



#### CIP

- Wide variety of CIP systems suitable for all industrial washing needs
- Three possible automation options:
  - Automatic CIP PLC controlled
  - Semi-automatic CIP
  - Manually operated CIP
- JAD heat exchanger
- CIP pressure pumps.
- Control of return temperature and pH value.
- · Special dosing system for cleaning concentrates.
- Mixing water with detergent in flow by dosing pump.
- Insulated tanks for caustic washing.
- CIP self-washing programme



#### **OPP & PAPER LABELLING**

#### STM MEGA ROLL - ROTARY OPP LABELER

- Production speed 9000 to 12000 bph
- 9 to 12 plates
- Hot glue technology
- For wrap-around OPP labels
- Optional: paper cut with hot glue
- Label positioning system for highly repetitive application and working with different labels
- Adapted to work with the top hot glue applicators available on the market
- Protection system to prevent glue from being applied to a drum without a label





**CHECK VIDEO** 

#### **Options for OPP labelers**

- Double reel for quick sticking of labels during reel changeover
- Compact machines with huge possibilities

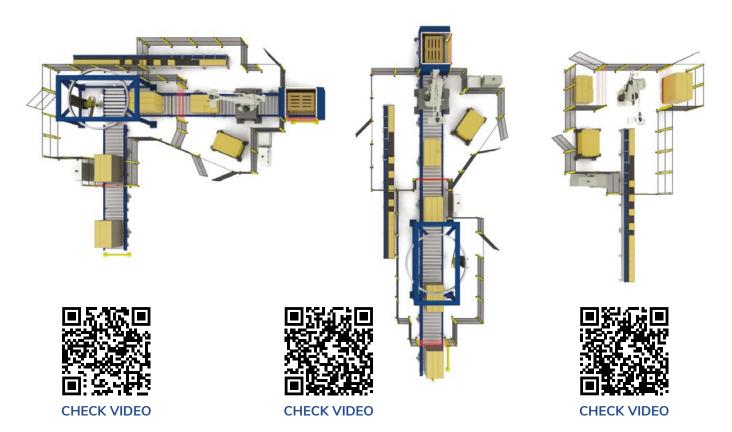
#### CHECK VIDEO



#### STM UNO ROLL – LINEAR OPP LABELER

- For applying OPP labels on round containers
- With capacity of up to 6000/9000 containers per hour.
- Linear solution, resulting in very short changeover times during format changes
- 3 vacuum chambers for very precise labelling
- Integrated and simplified adhesive application system

#### PALLETIZING & PROCESS AUTOMATION



We offer several of our standard palletizing systems, which we have refined over the years, making them simple and proven solutions for rapid production automation. Such optimization is possible at any stage, even in an existing line. The simplest systems we offer can be developed in the future from a semi-automatic solution into a fully automatic one - including storage, film wrapping and pallet transfer, which will further automate production on the line and minimize the number of staff required, ensuring the highest quality and repeatability of the palletizing process at the same time. STM is official integrator of Kawasaki robots.

NAME	ROBOT	AUTOMATIC INTERLAYER MAGAZINE	AUTOMATIC PALLET MAGAZINE	NUMBER OF STACKING AREAS	AUTOMATIC PALLET WRAPPER	PALLET TRANSFER	SYSTEM'S CAPACITY
PAL 0	<b>②</b>	<b>⊘</b>	8	2	8	MANUAL	20 PPM
PAL 1	<b>Ø</b>	<b>⊘</b>	<b>S</b>	1	<b>②</b>	AUTOMATIC	30 PPM
PAL 2	<b>②</b>	<b>⊘</b>	<b>Ø</b>	1	<b>Ø</b>	AUTOMATIC	40 PPM
PAL 3	<b>Ø</b>	<b>Ø</b>	<b>Ø</b>	1	<b>Ø</b>	AUTOMATIC	55 PPM

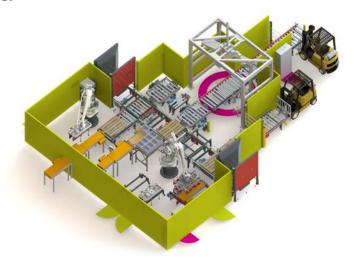
In our simplest palletization, the operator has to deliver empty pallets to two stacking locations, deliver the dividers to the divider warehouse and, once the product has been palletized, take the pallet to the free-standing pallet wrapper and on to the warehouse, as well as deliver another empty pallet in place of the one that has been collected.

More sophisticated systems require only delivery of stacked empty pallets (10pcs), adding dividers and collecting wrapped pallets. With such an automation, the same single operator is able to handle the end of the line with a much higher capacity.

#### SPECIAL PALLETIZING

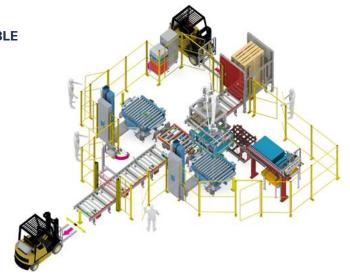
#### PALLETIZING SYSTEM ON 2 ROBOTS WITH 4 FUNCTIONS:

- palletizing 0,5l &0,33l cans in packages with line's capacity 15000cph:
  - 6x4 on tray with film
  - 3x2 in film only
  - 2x2 in film only
- palletizing 2l pet bottles in 3x2 packages with line's capacity 3000bph
- depalletizing crates with empty returnable glass bottles with line's capacity 20000bph
- palletizing crates with full glass bottles with line's capacity 2000bph
- can line works independently, while second robot works on either PET or glass line.



#### PALLETIZING SYSTEM FOR 5L VERY LIGHT AND UNSTABLE BOTTLES FROM LINE OF 4000BPH CAPACITY:

- end of a complete filling line with a stm's synchroblock 4/16/6
- layer preparation system preceded with a divider to deliver two lanes of product
- two stacking places for pallets
- system of pallet transport from pallet warehouse to palletizing spaces
- two pallet wrappers with rotative table at the stacking places, not to move pallet without a film on it
- system works on line that supplies one of the biggest retail chain in poland



#### SPECIAL PALLETIZING SYSTEM FOR EMPTY PET BOTTLES:

- designed for an empty bottle producer
- very compact and well thought out design
- suitable for all the blow molding machines
- capable to work with many bottle sizes in this case from 150 to 500ml
- scalable project for bigger capacity lines, bigger variety of bottles and bottle volumes



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#### **ANALYSIS**

We investigate client's needs and expectations, taking into account infrastructure and future production plans.



#### **CONSULTING**

Congeneric consulting, including machines sitting and choice of particular elements.



#### **ENGINEERING**

Design of chosen solutions.



#### **PRODUCTION**

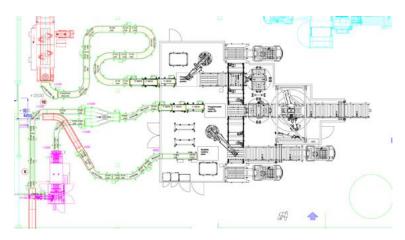
Assembly and machine's testing.



### TRANSPORT AND START UP

Worldwide shipping. Final installation.











#### **WE WORK WITH:**











































## COMPLETE LINES



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