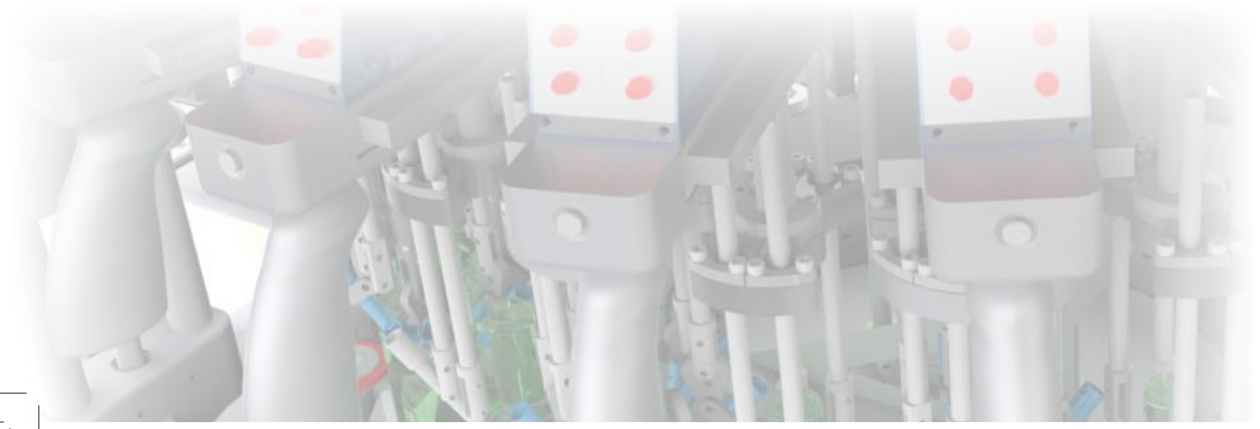
YOUR PARTNER IN GLASS CONTROL

ERMI GLASS CONTROL

Inspection machines for hollow glass

SUMMARY



>History Synopsis

ERMI GLASS CONTROL has been created by Mister Didier CLOAREC who has 25 years Experience in glass inspection machines activity. Building from his multi-discipline knowledge and accompanied with a dynamic expert and professional team, Mister Didier CLOAREC has also introduced innovative new technology into the field of hollow glass inspection.

Today, the activities of **ERMI GLASS CONTROL** Company are divided into **three main departments :**

- **The spare parts department:** for carousel glass inspection machine M or CO type.
- **The refurbishment department:** for carousel glass inspection machine M or CO type. (Mechanical, motorization, electronic, and PLC control)
- **The carousel inspection machine fabrication department** under **ERMI GLASS CONTROL's** brand(Adaptable machine with high inspection rate and high repeatability).

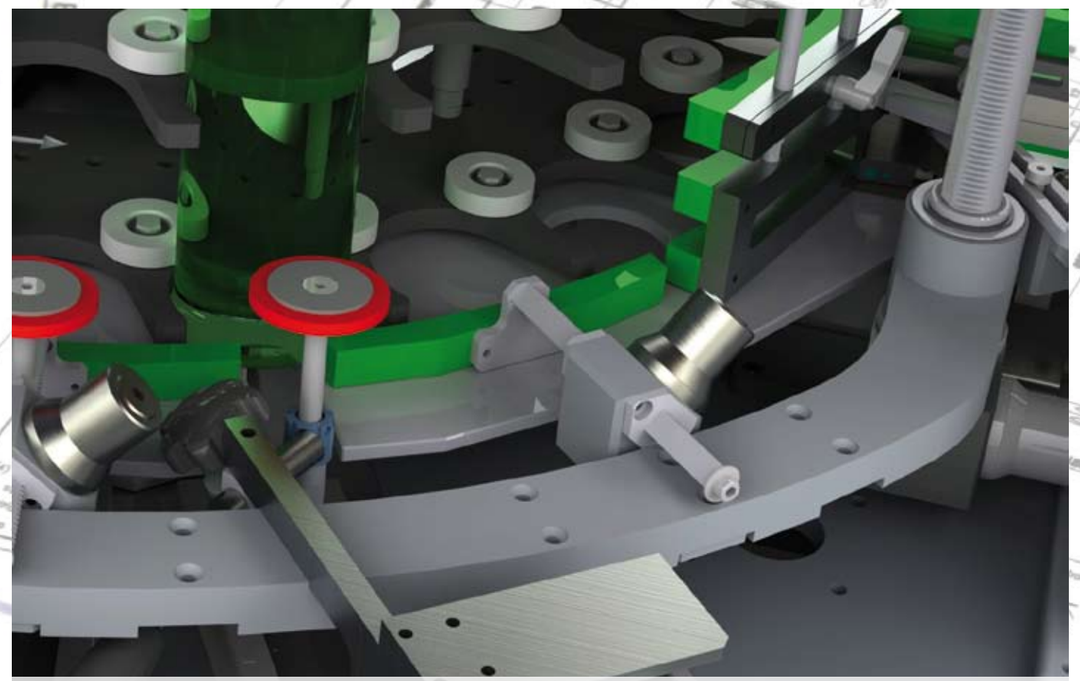
The Quality of our products and services as well as a quick and dependable response to enquiries has enabled our company to develop a strong customer network in France, to increase our presence in Europe, and since 2010, to promote our business across the world's glass industry market place.

ERMI GLASS CONTROL Participate in international trade fairs such as:

- GLASSTEC TRADE FAIR DUSSELDORF
- GLASSMAN EUROPE TRADE FAIR

Our objective: be your favoured partner.

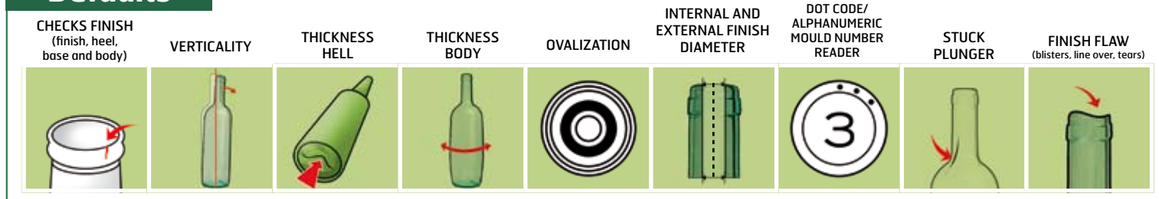
Quick Change



Quick Start

Glass inspection machine Multi 32C

Defaults



Hollow glass multi inspection machine with quick change article size system.

The Multi 32C glass inspection machine offers high speed inspection of hollow glass products . With a working radius of 380mm and motion management by servomotor, it permits high precision product indexing based on the starwheel principle . With full PLC control of the cinematic and the signal functions, information is sent to the user interface by an industrial computer. Allied to a "quick change module" , the line need stop for only 30 minutes to accomplish a job change. This adaptable and high performance machine can incorporate several inspection devices: gauging, planarity, cracks, thickness measurement without contact, and ovalisation without contact, Mould number reader by camera (dots or characters), as well as various other inspection devices , can be fitted on the starwheel machine.

Line stop of 30 minutes during a job change

MULTI 32 C

1 CRACKS INSPECTION DEVICE

- Possibility to fit up to 8 finish cracks stations (4 cracks emitters/receivers by station) an 4 bottom cracks stations (1 crack emitter/receiver by station)
- Fast adjustment without oscilloscope
- Emitter and receiver similar and interchangeable

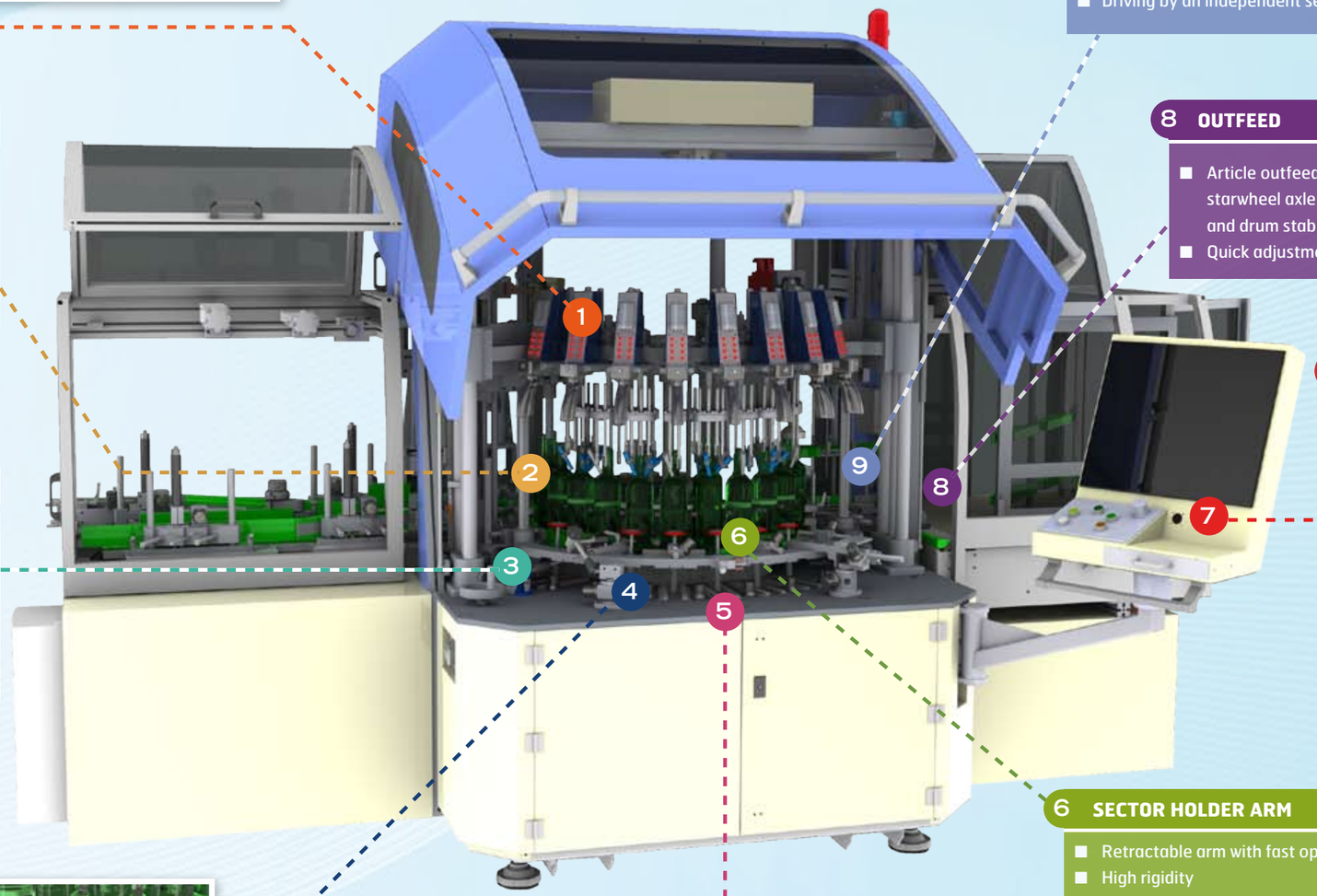
- **Wide range of use from 20mm to 180mm diameter**
- **Control management driven by PLC**

9 PLANARITY INSPECTION DEVICE

- Able to control all products volumes from 25cc to 3L
- Measurement done by vacuum system **(no article pollution)**
- Automatic adjustment by user interface
- Driving by an independent servomotor

2 GAUGING INSPECTION DEVICE

- Gauging plug with contact, maximum rate 380 bottles per minute, maximum stroke 90mm
- Self- centering



8 OUTFEED

- Article outfeed in the starwheel axle (without saber and drum stabilization)
- Quick adjustment

7 INTERFACE HOMME/MACHINE

- Fast , user-friendly access to all machine parameters
- Operator level account
- Visual fault display in real time
- Complete statistics

3 INFEED SCREW

- Montage – démontage et réglage Fast assembly-disassembly and adjustment without any tools.illage à baïonnette
- Bayonet locking system
- Indexing and motion by servomotor

6 SECTOR HOLDER ARM

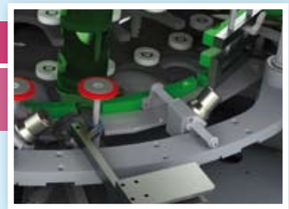
- Retractable arm with fast opening
- High rigidity

4 ITEM ROTATION

- Independent servomotor for each item rotation station
- Self speed adjustment and fast positioning without tools

5 SECTOR

- Fast and precise adjustment without tools



A SYSTEM DESIGN FOR SAVINGS

The component choice and the technical solution involved ensure a low cost of use and maintenance.

■ Technical data

■ Lift system

Automatic height adjustment of the check holder provide by inductive motor, parameters set in theintelligent interface. Automatic adjustment of the planarity and gauging device.

■ Bad bottle ejection

Ejection of defective article after detection by photocell with traceability guaranteed.
Ejected article orientation choice :

- Directed towards cullet
- Towards storage in a dedicated area
- Towards orientation on transfer line

Automatic adjustment of ejection power according to article choice on the HMI via 3 solenoid valves connected at 3 air accumulators.

■ Automation

Machine totally controlled by an industrial PLC. Architecture based in a BUS TCPIP communication mode. Possibility to relocate, making easier integration of new control devices with different communication protocol.

■ Safety

The active safety of the machine is totally controlled by a safety PLC. All access points covering the moving parts are protected by electrical interlocks linked to the safety circuit. 3 emergency circuits breaker supplied on the machine.

■ Remote control

Enabling switch with tension control. With this remote you can activate a number of the machine's devices(gauging column, Lift system, Starwheel) via the interface user selection and +/- button action.
Emergency circuit breaker built in. Remote locking by key.

■ Communication

Ethernet network architecture 1Gb/s, remote system diagnostic by VPN. Machine supervision available on all computers on the local network. Possibility to connect to an external network for line process application.

Dimensions		
Lenght	3641	mm
Width	1395	mm
Height	2248 – 2470	mm

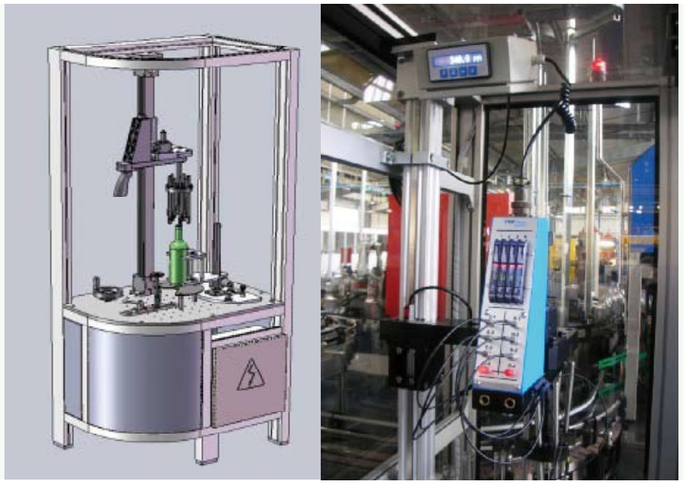
Handling bottle and starwheel		
Nb of station	12/24/48	
External radius	380	mm
Maximum article height	600	mm

Electrical data		
Operating voltage	400	Volts
Frequency	50	Hz
Apparent power	4	KWA

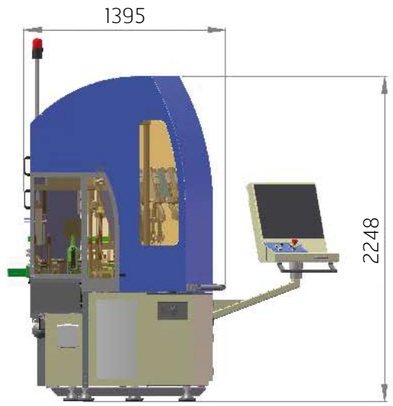
Starwheel configuration	12		24		48	
Diameter (mm)	Mini	Max	Mini	Max	Mini	Max
	81	180	41	80	20	40
Rate (Bottle/mn)	180		250		380	
Maximum weight (g)	3000		900		190	

■ QUICK CHANGE Station presetting

■ The Quick change station facilitates the adjustment of the cracks inspection device(quick change) before a job change or during production. This station recreates the configuration of the Multi 32C and specifically a pocket of a starwheel adjacent to an item rotation station. The cracks inspection device is adjusted before the job change permitting a line stop of only 30 minutes. Adjustments can also be made to detect new cracks midway through production without stopping the line.

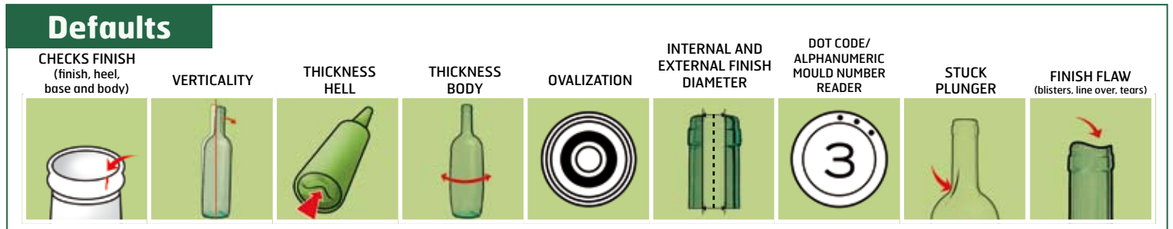


■ Layout Plan Multi 32C



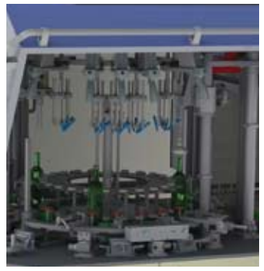
■ Inspection machine MR14

Defaults



■ HOLLOW GLASS INSPECTION MACHINE MR14

The glass inspection machine MR 14 checks all hollow glass articles between 20 to 130mm in diameter at high speed. Thank to its working radius of 380mm, it comfortably allows the set up of several inspection devices. This machine is fully PLC controlled . The new generation of user interface let the operators to find and access clearly all information displayed. The MR14 can incorporate several inspection devices including : gauging with and without contact, detection of cracks (finish, line over, neck, shoulder, body, heel), thickness measurement , ovalisation without contact, andmould number reader by camera (dots and characters)

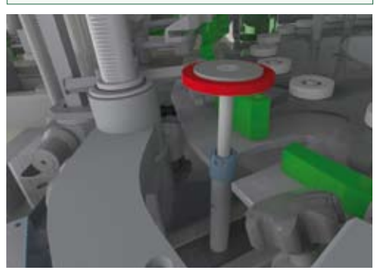


MR14 Highlights

Cracks inspection device
is adjusted without oscilloscope, the emitters and receivers are same and interchangeable.

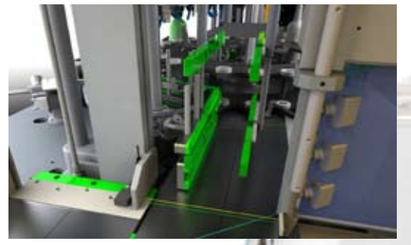
Planarity inspection device
is driven by an independent servomotor. The volume measurement is done by a vacuum system no air is injected inside the article, which prevents contamination inside the bottle, and guarantees its total hygienic standard. (ERMI Patented system)

Item rotation article
Possibility to fit up 6 independent item rotation stations, driven by servo motor. The speed of each is independent. It can be adjusted on the user interface. The position set up is fast and does not require any tools.



Infeed system
Easy set up of all infeed guides. The staggered placement of each article is performed by an infeed screw servo driven with quick adjustment. Anti jam safety upstream to the infeed screw is detected by optical sensor, and at downstream by a mechanical counter ramp.

Outfeed system
The article release from the starwheel pocket is done an innovation from ERMI that consist to release the article in the axle of the pocket. The article is naturally extracted from the starwheel by the outfeed conveyor. This outfeed system needs any adjustment (No drum and saber).



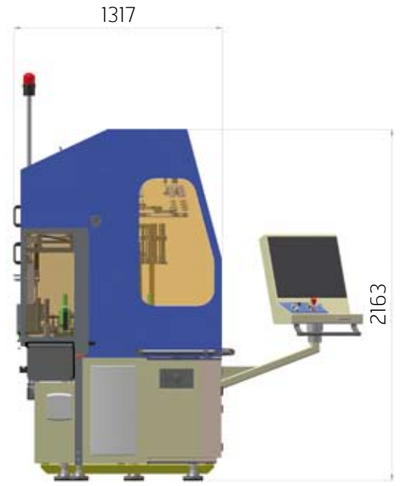
Technical data MR14

Dimensions		
Lenght	3641	mm
Width	1317	mm
Height	2163 – 2470	mm

Handling bottle and starwheel		
Nb of station	12/24/48	
External radius	380	mm
Maximum article height	450	mm

Electrical data		
Operating voltage	400	Volts
Frequency	50	Hz
Apparent power	4	KWA

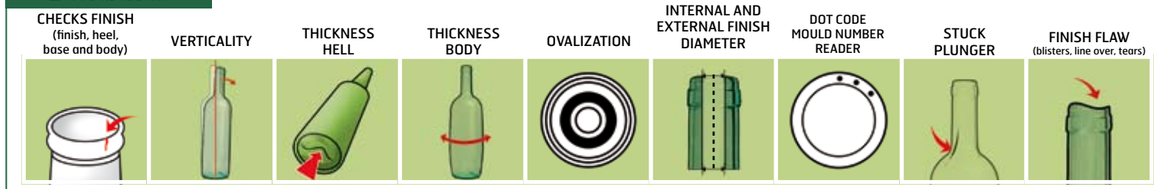
Starwheel configuration	12		24		48	
Diameter (mm)	Mini	Max	Mini	Max	Mini	Max
	81	180	41	80	20	40
Rate (Bottle/mn)	180		250		380	
Maximum weight (g)	3000		900		190	



PCA

■ PCA System

Defaults



■ **ERMI GLASS CONTROL** Company is proud to introduce its newly developed M and CO inspection machine with TTL/INFO or PCI technology. The principal feature of this innovation is the replacement of the electronic control by a PLC. This guarantees improved ease of use and maintenance . Existing parts of your machine such as the starwheel, divider and infeed screw as well as the electronic unit can be reused in the refurbished machine.

PCA

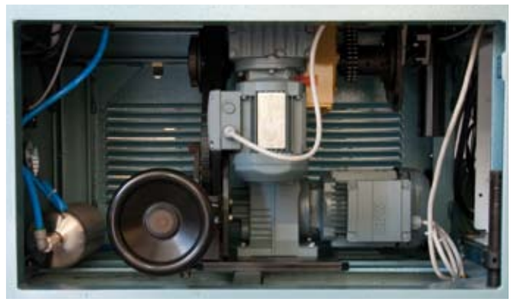
New innovations of the PCA Technology

Automation

Machine totally controlled by PLC. Upgradable multi-protocol system.

User interface

Machine software control by an industrial computer. Simple and intuitive ergonomic interface on 19' touch screen. Control of the various run modes. Production statistic. Type of inspection selection. Creation and storage of all article list (specification). Easy adjustment of all inspection device. Language software selection. Production supervision in real time. Help on line. Dialogue via Ethernet network, operating system in real time

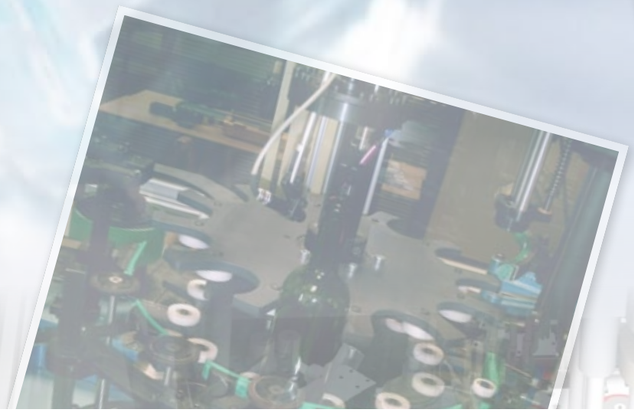


Motorisation

The starwheel rotation is supply by frequency inverter – motor – Fergusson indexer. In option, PCA system suggest to install a servomotor.

- Inspection and motion are drived by PLC
- Automatic motion of the whole driven part is allied to the production speed
- New power control cabinet integrates the electrical circuit protection along with 2 frequency inverters
- Genuine encoder is replaced by a new , more precise version
- An encoder is positioned on the conveyor for tracking applications
- Upstream and downstream anti jam safety
- Rejection safety and self resynchronization on the both ejectors
- Genuine inspection units reusable
- Genuine production tool reusable (Starwheel, sabre, infeed screw)

- Oscilloscope is integrated in the user-interface
- Remote access by Ethernet connectionto display the machine status
- Display and supervision drive by industrial computer
- Swivel control panel with 19'' touchscreen
- Oscilloscope intégré à la supervision
- Starwheel motor-variator is replaced by an electrical motor associate with frequency inverter (option)
- Item rotation motor-variator is replaced by an electrical motor associate with frequency inverter (optional)
- 4 item rotation stations (optional)



■ Additional inspection device

Ovalization inspection device

System without contact based on 2 optical micrometers, the adjustment is very fast and simple (Inspection height and space between heads).
These devices are adapted to the whole range of ERMI inspection machines.

Thickness measurment device

ERMI present 2 kinds of thickness measurement device:

- A system without contact, with a multi focus optical head (up to 3 units per machine)
- And another based on a capacitive head with contact (up to 8 units per machine)

These devices can be adapted to the whole range of ERMI inspection machines.

Mould Number reader

ERMI has developed 2 mould number readers by vision system

- The first system is able to detect any type of dot code. The camera needs to be place in the front of the dots on the sidewall bottle. The adjustment is done by a self learning program.
- The second is based on a character recognition system on the bottom bottle that allows the direct reading of the mould number.

Theses devices are adaptable on the Multi 32C and MR14 inspection machine.
A conventional mould number reader for dot code is also available (halogen or LED light) for the whole ERMI inspection machine.

■ Functions table

Functions table	Multi 32C	MR 14	PCA
Automatic sample passage	■		
Servo-driven infeed screw	■	■	
Starwheel servo-driven	■	■	■
Starwheel by mechanical indexer			■
Independent item rotation station servo-driven with quick-adjustment by handle	■		
Independent item rotation station servo-driven		■	
Conventional item rotation by belt			■
Automatic adjustment at the article height	■		
Quick adjustment of bottle guide by indexable handle	■		
Article outfeed in line (no guide or saber needed)	■	■	
QUICK CHANGE Crack inspection device type ERMI	■		
Fixed crack inspection device type ERMI		■	■
Conventional crack inspection device			■
Mould number reader for dot code by camera	■	■	
Mould number reader for character recognition	■	■	
Mould number reader for dot code by conventional system (halogen or LED light)			■
Ovalization inspection device without contact	■	■	■
Thickness measurement device without contact	■	■	■
Thickness measurement device with contact	■	■	■
Planarity device by air injection			■
Planarity device by Vacuum system	■	■	■
Gauging device with contact	■	■	■
Gauging device without contact by vision system	■	■	
Touch screen user interface with supervision software	■	■	■
Long distance communication and diagnostic	■	■	■
Ejector with air supply programmable	■	■	■
Ejection safety and resynchronization on all ejectors	■	■	■

■ **As standard** / ■ **Optional**

■ Spare parts

Spare parts

The spare parts department has, for many years, provided a fast supply service to our customers all over the world.

Quality and a quick response are the keys your satisfaction.

We make ourselves all components in our two France mechanical manufacturing plants.
We maintain and display in our catalogue, a full range of all important spare parts which we can support with a 48 hr. delivery service (except customs transit). This covers all the spare parts we stock from receipt of your order.

Mechanical parts

ERMI 77 maintain stocks of every mechanical spare part included in your inspection machine type M or CO.
Our research and development department are constantly seeking to improve our equipment with the aim of increasing its ease of use and extending its working life.

Electronic

ERMI77 offer a sales and repair service for all the various electronic parts of your machine :
Boards and inspection units
Inspection devices
Emitters, receivers

An easy to use catalogue.

Parts are easy to find in the ERMI77 catalogue.
All parts are listed (from the spring to a complete set sub-system) and modeled in 3D in order to make your search for replacements easier.

■ Machine refurbishment

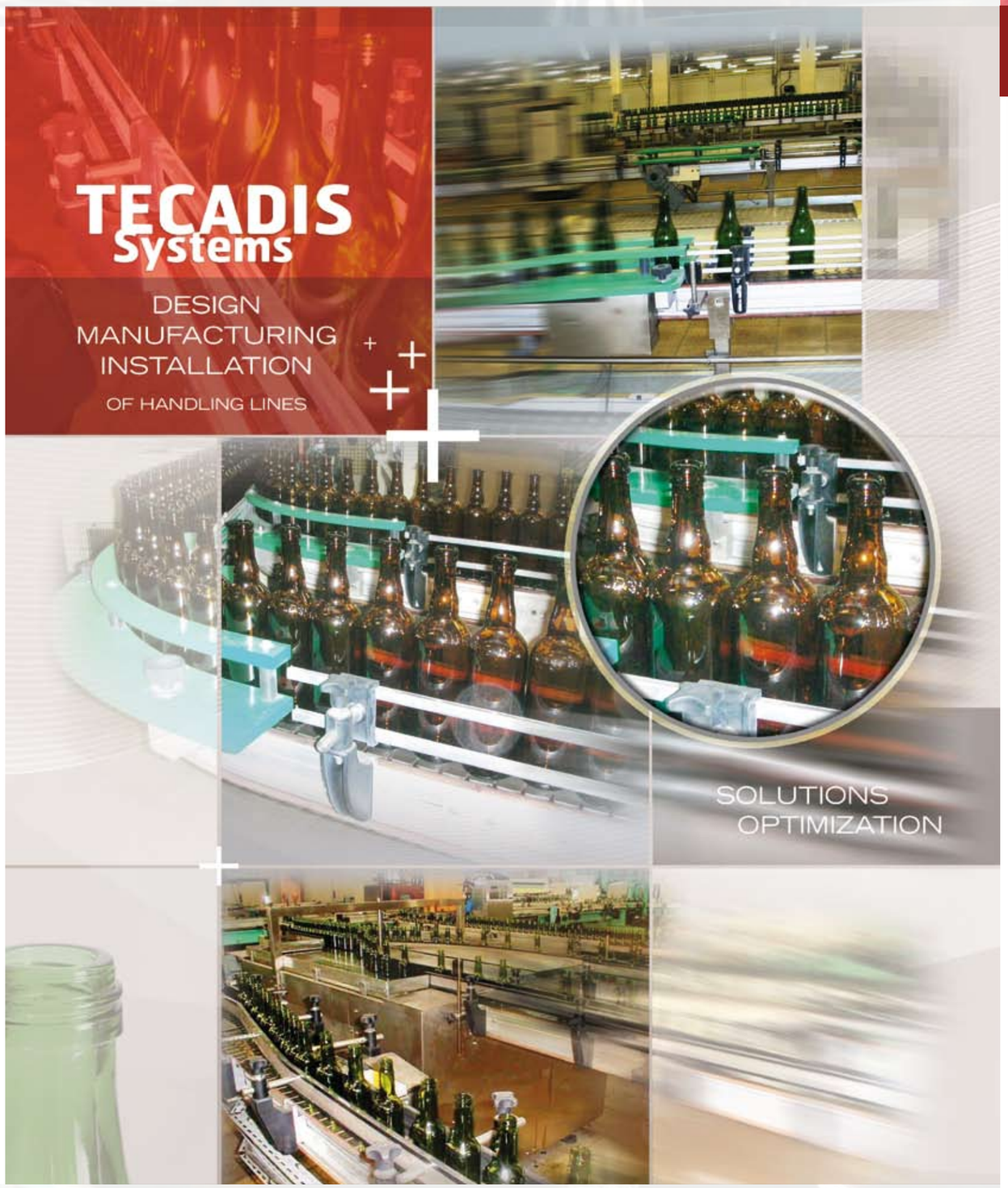
ERMI77 have acquired a solid knowledge in refurbishment and modernization of glass inspection machine type M and CO over a long period of time. We can provide total service, from simple mechanical repair to complete customized refurbishment (Electric and mechanical). To ensure total care for your machine we carry out all refurbishments in our own workshop.

BEFORE

AFTER

High lights :

- Refurbishment evaluation on site carried out by a business engineer
- Pick up and shipment management of your machine
- Reception and work carried out with total expertise
- Mechanical, electric and electronic refurbishment
- Test and validation trial
- Customer control in our workshop
- Commissioning on site by our after sales service team



■ Transfert systems for « COLD END » lines

- ALUMINIUM MODULAR CONVEYOR
- MONO GIRDER SELF SUPPORTING
- ASSEMBLING SPLINTED
- LAYOUT EASY TO CHANGE
- TRANSFER "0" BETWEEN 2 CHAINS

- LINE UP ON ONE LINE
- SPREADING TABLES
- ACCUMULATION TABLES
- DISTRIBUTOR ON 2 LINES
- CONTINUOUS CHANGING DIRECTION SYSTEM

- FLUX MANAGEMENT MASS TRANSFERT ARTICLES
- TUNNEL EXIT
- DISTRIBUTION ON 2 OR 4 LANES
- SPREADING ON 2 OR 4 SEPARATE LINES IN CONTINUOUS

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