



GLASS TRANSPORT SYSTEMS

welcome



WE HAVE GROWN WITH YOU EVERY DAY FROM

1962

FOR MORE THAN

50

YEARS WITH PASSION

NEGRIN
ITALCARRELLI
GROUP



**SELF-PROPELLED
PLATFORM
TRUCKS**



**GLASS
HANDLING
MACHINES**



**SPECIAL
MACHINES**



**AGV
MACHINES**

Italcarrelli is a world leader in the design and manufacturing of specialty machines and solutions for the storage and handling of flat glass.

Our company is located in Vicenza, in the North-East area of Italy, where we avail ourselves of a technologically advanced plant and of a highly trained and skilled team specialized in the design and manufacturing of our machines. Along with many years of experience on the field, the company has acquired a remarkable knowledge of the glass field and, thanks to investments in the research of innovative solutions, the company is providing its own products to all the most important glass manufacturing companies all over the world.

OUR REFE RENCES



Italcarrelli®'s roots date back to **1962**, when the entrepreneurial ability of Mr. A. Negrin identified the forklift as an essential product for industry.

In **1969** the first electronic forklifts were built: it was an innovative product for the time, which marked a significant step forward for the company on the market, inasmuch as the demand for this type of forklift trucks exceeded the demand for diesel engine forklifts, within a very short time.

At the beginning of the **Eighties**, the first specialty machines, such as side-loading forklifts for the wood industry and lift platforms for heavy loads, were introduced.

The high level of reliability of these prototypes marked the beginning of a period of constant growth in demand in the field of special forklifts. In the same period, the company started expanding its market also beyond the national boundaries and began exporting front-loading forklifts in Europe and overseas.

In the **Nineties**, the high demand for forklifts and specialty machines could hardly be met by the Chiampo works. Additionally, Asian competitors imposed research for solutions to achieve more competitive prices, while maintaining the same level of quality. It therefore became necessary to renovate the company structure to adapt it to these new market requirements.

This intervention also led to changing the name of the company to Italcarrelli and remodelling the premises in Chiampo, providing the works with state of the art machinery and equipment and adapting the safety and quality systems to the work required by the new CE standards.

Since **1995** the Chiampo works have been dedicated only to the design and construction of specialty machines.

1960 1970 1980 1990



HISTORY TIME LINE

yesterday, today and tomorrow...

At the works in Chiampo, many specialty machines are continually produced for a great variety of sectors, such as foundries, paper mills and glass works.

The glass works sector soon became one of the one of the biggest businesses for Italcarrrelli, to the point that a dedicated business unit was created, the Italcarrrelli Glass Division, totally committed to the research, development and production of specialty machines for the handling of flat glass.

Thanks to the considerable investments made in this sector, Italcarrrelli has **today** become a world leader, with its innovative solutions for large plants producing flat glass.

Research in this sector has led the company to use innovative technologies, such as optical and ultrasound sensors, radio operated and touch screen guidance systems.

Italcarrrelli is making high investments in the automation, especially in the development of machines without operator onboard (AGV machines) that are always more and more requested on the market.

2000 TODAY

..... FUTURE
AUTOMATION





01_ PLATFORM
TRANSPORTERS



02_ INLOADER
TRANSPORTERS



03_ SIDE
LOADERS

ITALCARRELLI has the expertise and experience to offer tailored solutions for customers based on the specific needs and the careful analysis of several variables.

THE FLEET MACHINES OF GLASS DIVISION

GLASS DIVISION



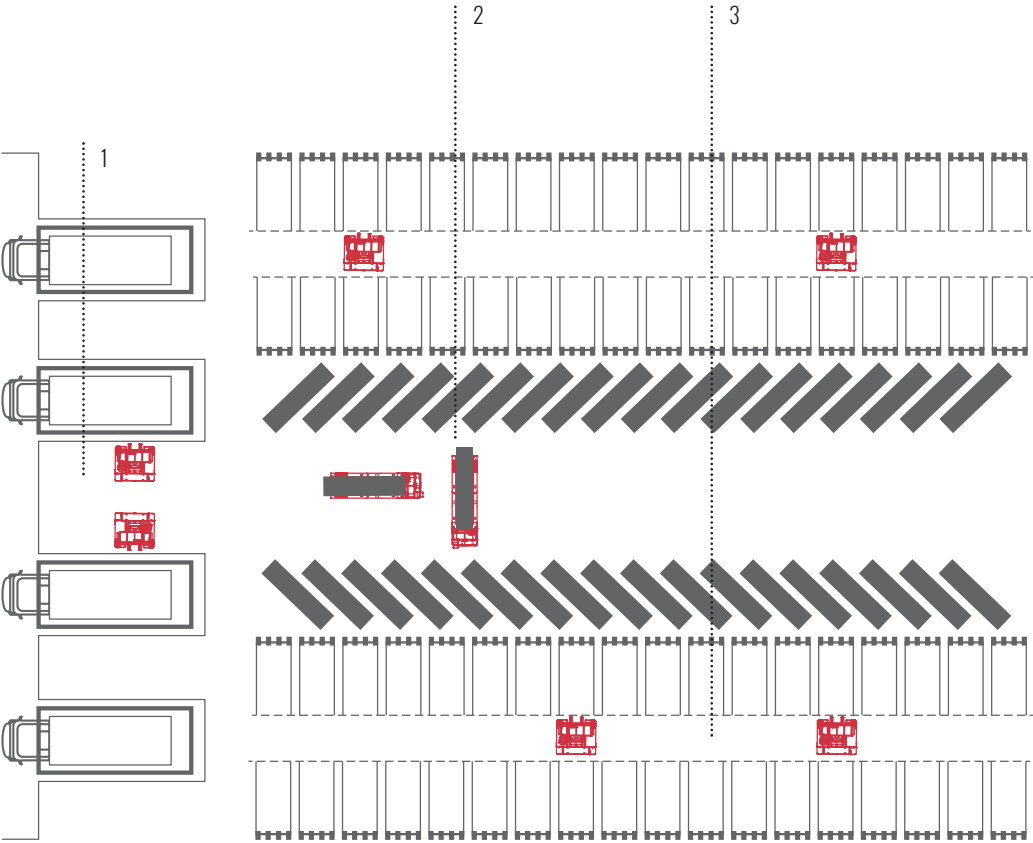
04_ TAILOR MADE SOLUTIONS



05_ CONTAINER LOAD/UNLOAD



06_ LAMINATED GLASS HANDLING



1

2

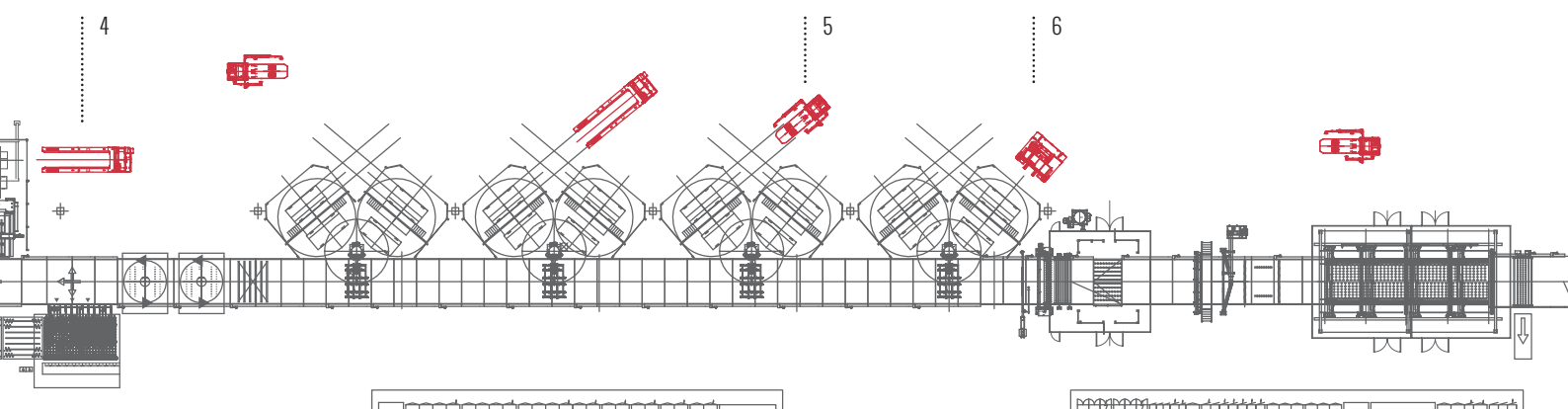
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FLOAT LINE

Italcarrelli provides a wide range of machines for the glass handling in the float glass production facilities. These machines perform the glass handling from the end of the line (stackers) to the warehouse and from the warehouse to the processing lines or to the shipping area.

The main models of these machines are:

- > Platform transporters: machines suitable for the handling of glass on racks, mainly DLF / LES size.
- > Inloader transporters: machines suitable for the handling of glass on racks, mainly Jumbo size.
- > Side-loaders: machines suitable for the handling of DLF / LES and Jumbo glass packs.





MAIN FEATURES...

+
Glass
locking
device

1



+
"Sicur-lift"
patented
lifting system

2



+
Comfortable
seat

3



01 PLATFORM TRANSPORTERS

The vehicles series TPEN are loading platforms with loading capacity ranging from 5 to 60 tons and beyond.

They are used for transporting flat glass on stillages. Thanks to these machines, it is possible to transport glass sheets of any size from the stackers of the float line to the warehouse, as well as to perform normal handling inside the premises of glass industries and companies.

They are equipped with the "Sicur-Lift" lifting system (Patent Pending), which assures a double mechanical and hydraulic safety.

The platform dimensions can be tailored according to the size of the racks to be transported. Upon request, we can provide the design of the racks itself. The trucks can be battery powered, or equipped with either diesel or gas engine. Optional devices are available, such as seated driving position, video cameras, ultrasound sensors for slowing down the machine automatically in presence of obstacles, and hydraulic equipment for fastening the glass on the racks.



- > HEAVY DUTY CHASSIS
- > HIGH STABILITY
- > HIGH VISIBILITY
- > EXCELLENT MANEUVERABILITY
- > HIGH QUALITY COMPONENTS
- > AC TECHNOLOGY

APPLICATIONS:

- > HANDLING OF GLASS RACKS FROM STACKERS
- > WAREHOUSE HANDLING
- > HANDLING OF RACKS ON PROCESSING LINES

Handling operations:

- > DLF/LES racks handling
- > Jumbo racks handling
- > Laminated glass racks handling

PLUS



Compact dimensions



Low maintenance cost



High visibility



Tailor made solutions

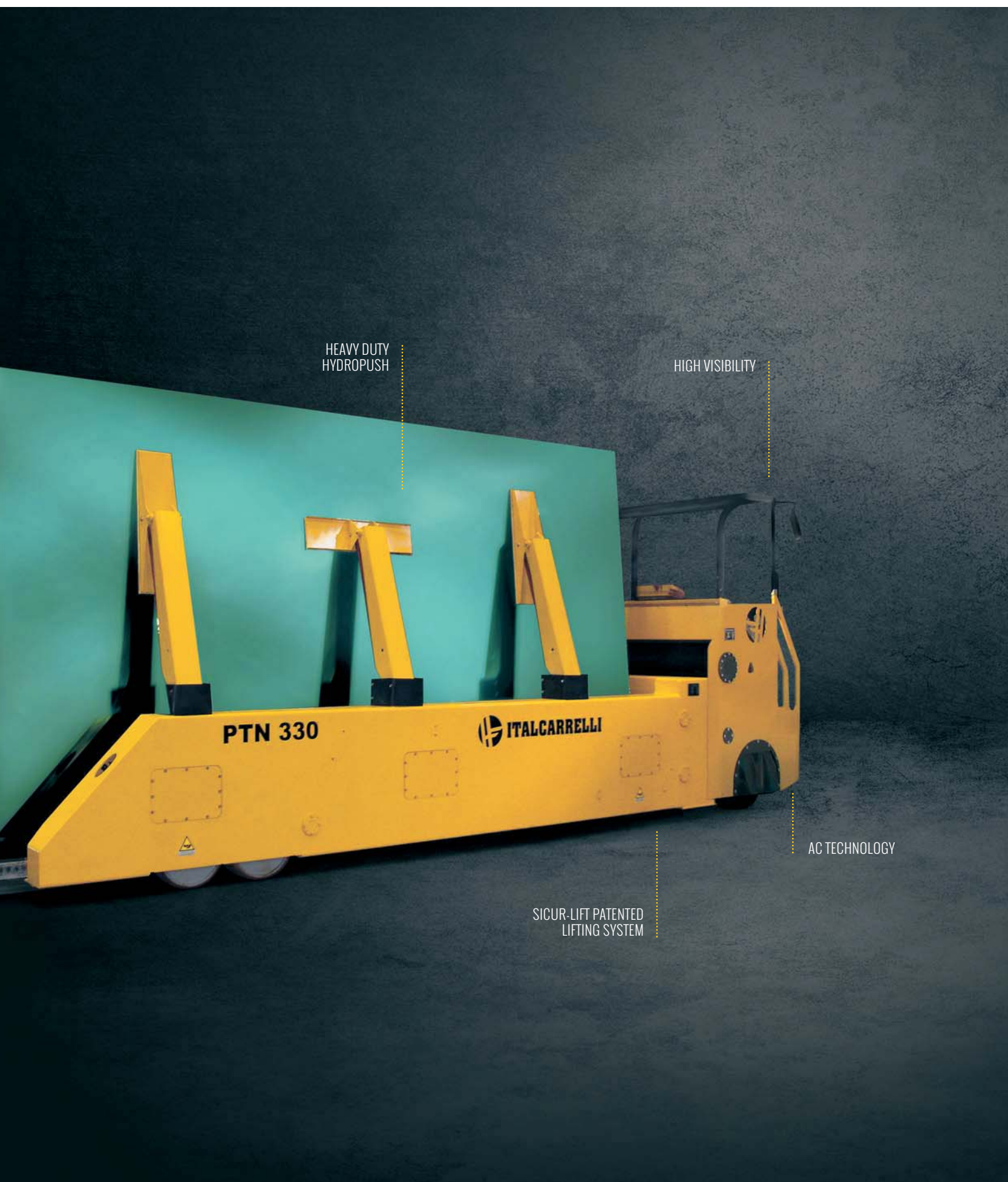


Automatic Functions



+ Simplified use
(Italcarrelli Interactive Dashboard)





HEAVY DUTY
HYDROPUSH

HIGH VISIBILITY

PTN 330

ITALCARRELLI

AC TECHNOLOGY

SICUR-LIFT PATENTED
LIFTING SYSTEM



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APPLICATIONS:

- > HANDLING OF GLASS RACKS FROM STACKERS
- > WAREHOUSE HANDLING
- > HANDLING OF RACKS ON PROCESSING LINES

- > DLF/LES racks handling
- > Jumbo racks handling
- > XXL jumbo racks handling
- > Laminated glass racks handling

02 **INLOADER TRANSPORTERS**

The vehicles series PTN are machines for transporting glass on jumbo size stillages.

These means are an excellent solution for transporting glass sheets from the stackers of the float line to the warehouse, as well as for performing normal handling within the premises of glass industries and companies.

They are usually equipped with a 33 tons loading capacity; however, upon request, versions with loading capacity of 45 tons and over can be made available, for example for transporting laminated glass.

These machines are equipped with a lifting system developed by "Sicur-Lift" (Patent Pending), which assures a double mechanical and hydraulic safety.

Driving positions can be of "standing" type, with fast access operator platform, or of "seated" operator type provided with ergonomic seat. Customizable versions are also available: e.g. with closed cabin; heating and air conditioning system; double controls for forward and reverse run; driving position with rotating seat in order to increase the visibility of the operator during the driving of the transport means.

Optional devices are also available, such as the rain-proof cover, ultrasound sensors to slow down the machine automatically in presence of obstacles, video cameras, special equipment for fastening the glass on the rack; and systems to change the width of the loading profiles hydraulically in order to allow clamping of several types of racks.



1 Driver place with simplified access

+



2 Front and rear panel control

+



3 Dual dashboard at the front side and single dashboard at the rear

+



4 Italcarelli Interactive Dashboard

+



5 Cameras, parking sensors & safety devices

+



6 Heavy duty hydropush

+



7 Battery powered

+



8 Diesel / LPG powered

+

MAIN FEATURES...

...and more

- 9. Multi-camera screen
- 10. Led lights
- 11. Auto-diagnosis and remote assistance unit
- 12. Optical guidance system





**special
versions**



**close cabin
with rotating seat**



PLUS



Compact
dimensions



Low maintenance
cost



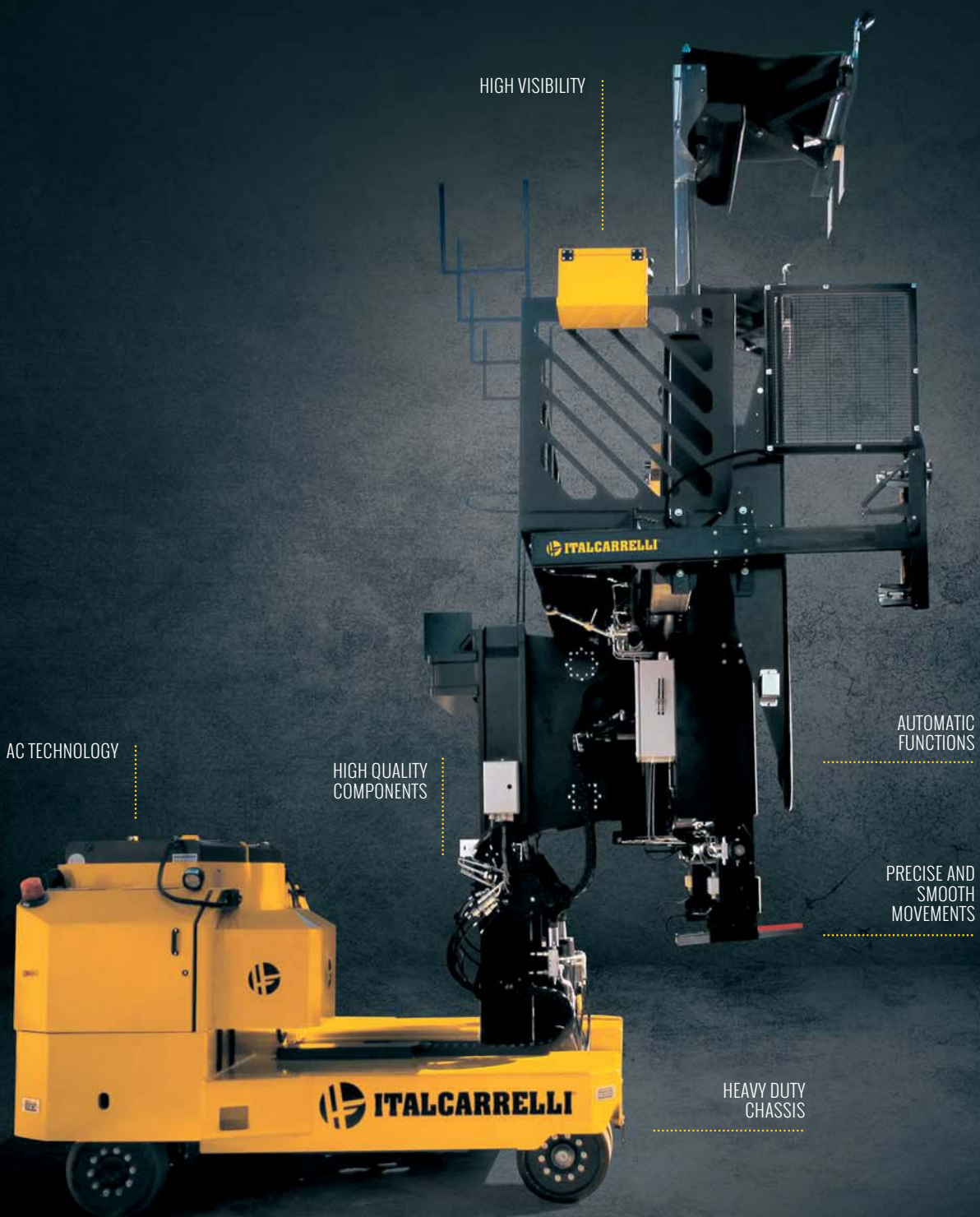
High
visibility



Tailor made
solutions



Automatic
Functions



AC TECHNOLOGY

HIGH QUALITY
COMPONENTS

HIGH VISIBILITY

AUTOMATIC
FUNCTIONS

PRECISE AND
SMOOTH
MOVEMENTS

HEAVY DUTY
CHASSIS



- > **AUTOMATIC FUNCTIONS**
- > **HEAVY DUTY CHASSIS**
- > **PRECISE AND SMOOTH MOVEMENTS**
- > **HIGH VISIBILITY**
- > **HIGH QUALITY COMPONENTS**
- > **AC TECHNOLOGY**

APPLICATIONS:

- > **HANDLING OF GLASS PACKS FROM STACKERS**
- > **WAREHOUSE HANDLING**
- > **LOADING-UNLOADING OF GLASS PACKS ON PROCESSING LINES**
- > **LOADING-UNLOADING OF GLASS PACKS ON TRUCKS**

- > loading capacity ranging from 3 to 15 tons and more
- > all glass sizes, from DLF / LES plates (about 3300 mm long) to jumbo plates (6000 mm of length and beyond) and XXL jumbo (over 9000mm)
- > multidirectional steering system

03SIDE LOADERS

Side-loaders of the series EN 4L are machines for transporting the glass packs within the factory. These machines have independent PLC-controlled wheels for moving in all directions.

Versions with loading capacity ranging from 3 to 15 tons and more are available, which can transport all glass sizes, from DLF or LES sheets (about 3300 mm long) to jumbo sheets (6000 mm of length and beyond) and XXL jumbo sheets (over 9000mm long). They are equipped with an innovative loading system by means of telescopic forks, which ease glass loading/unloading operations: moreover, thanks to optical and ultrasound sensors, it is possible to perform the alignment and adjustment of the forks according to the number of packs to be transported automatically.

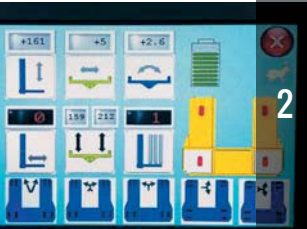
Thanks to this system, even the splitting operations (splitting of a single pack) are remarkably easier. Driving positions can be of "standing" type with platform positioned on the upper part of the forklift to offer greater visibility to the operator, or of "seated" type with cabin positioned on the chassis.

Control panels consist of a multifunction joystick and a touch screen to allow a simple and fast setting of the forklift. Optional devices are also available, such as video cameras, hydraulic fork positioning devices, suction cups for the clamping of the single sheets and adjustable height driving cabin to perform the loading of the glass inside trucks, without need of removing the canopy.



1 Control panel

+



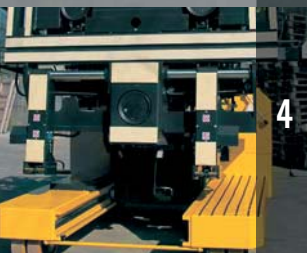
2 Italcarrelli Interactive Touch screen

+



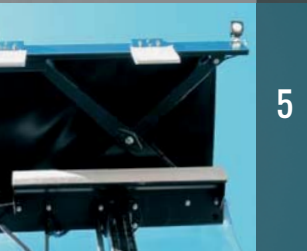
3 Telescopic fork with sensors to simplify the glass handling

+



4 Hydraulic forks width regulation

+



5 Upper clamps with pantograph movement

+



6 Side-clamps

+



7 Vacuum attachment

+



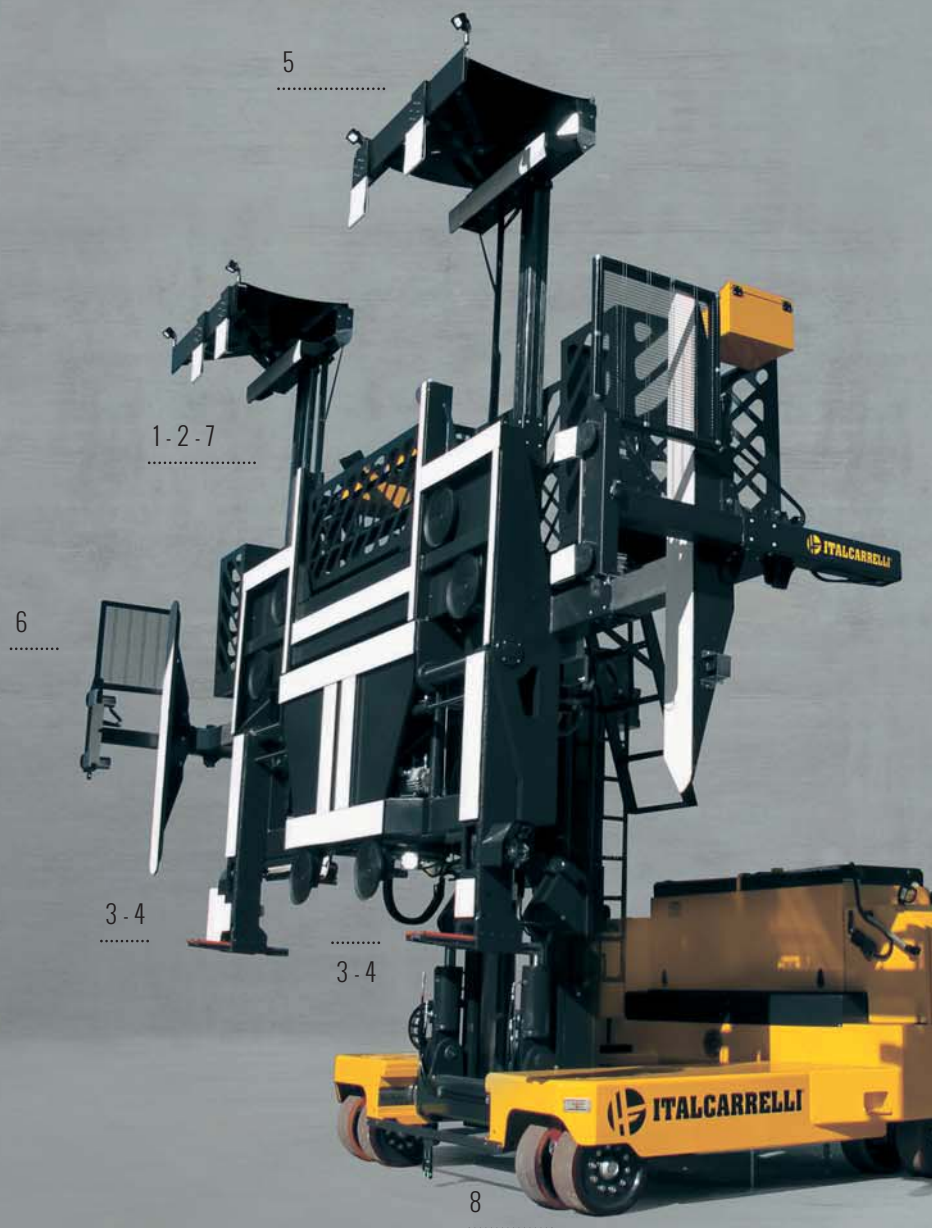
8 Automatic driving system to operate between the rack bearers

+

MAIN FEATURES...

...and more

- 9. Multi-camera screen
- 10. Hydraulic regulation of the driver place height
- 11. Led lights
- 12. Spacer box
- 13. Auto-diagnosis and remote assistance unit





PLUS



Compact
dimensions



Low maintenance
cost



High
visibility



Tailor made
solutions



Automatic
Functions

Handling operations:

- > DLF / LES glass handling, with and without packaging
- > Jumbo glass handling
- > Thin glass handling
- > Single sheet handling
- > Splitting-sticking
- > Pack turning over side-tin side (with 2 side-loaders)

04TAILOR MADE SOLUTIONS

Italcarelli® designs and produces also equipment for the handling of sheets under special conditions.



EN4L 45W WITH CLAMPING DEVICE FOR PACKED GLASS HANDLING



EN4L 60R WITH PACK TURNING DEVICE



EN4L 150C FOR THE HANDLING OF GLASS ON COLLARS

Italcarrelli® designs and produces also equipment for the handling of sheets under special conditions. For example, we produce hydraulic equipment able to pick up the glass packs and turn them landscape - portrait and portrait - landscape. We do manufacture also special attachments like hydraulic clamping devices for the handling of packed glass as well as special side-loaders for the handling of glass on racks.

Italcarrelli® keeps developing innovative means that are then applied in several glass industry fields, among which the production of laminated and solar glass.

These production lines require the glass to be stored on special racks; therefore, we developed special side-loaders able to transport them and load them onto the lines in a simple and fast way, assuring maximum safety thanks to the great view and maneuverability offered by these means to the operator under any condition.



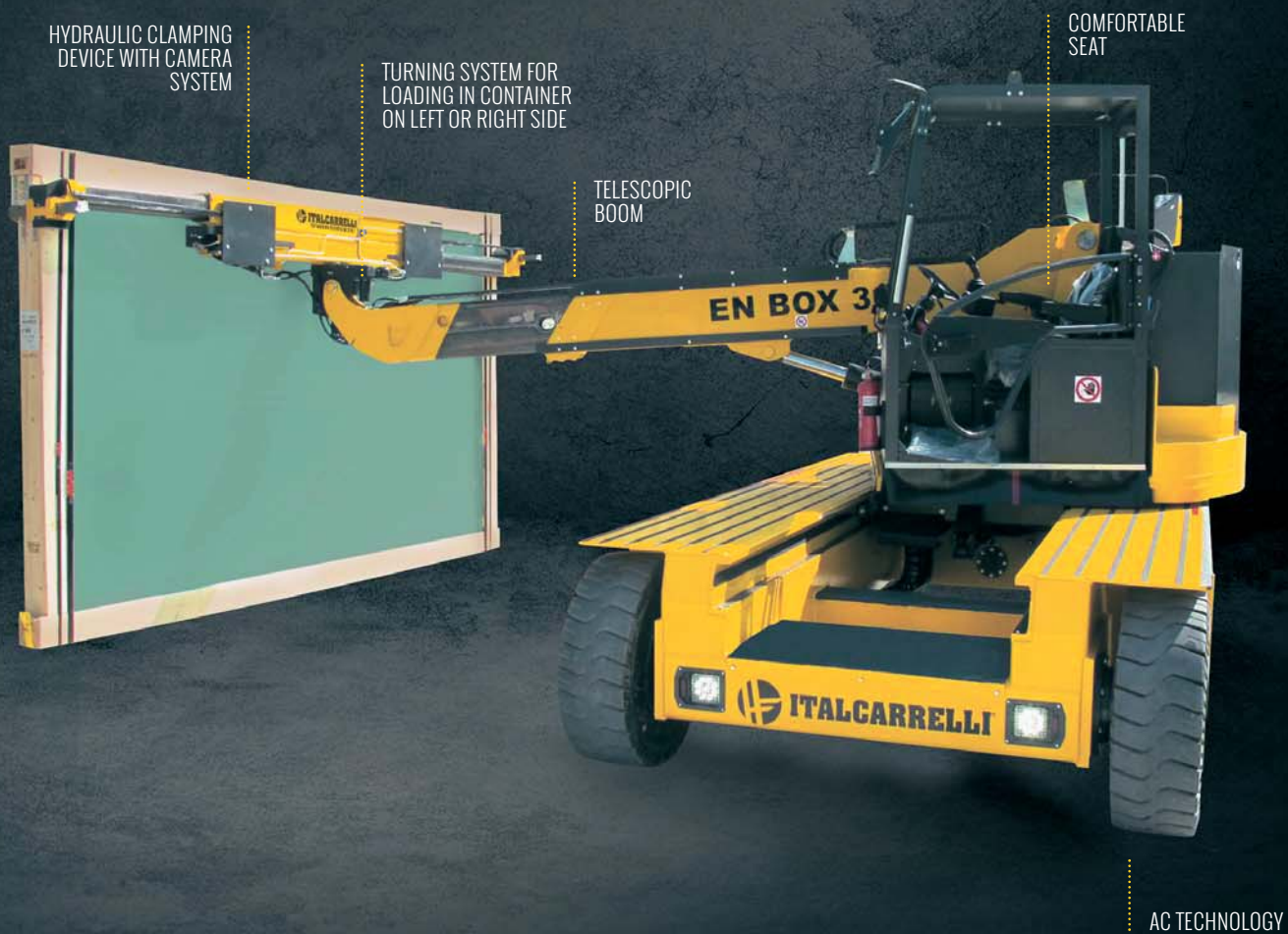
EN4L 130 FOR THE
HANDLING OF GLASS
ON RACKS



EN4L 200R WITH 20T
OF LOAD CAPACITY
FOR THE HANDLING OF
GLASS ON RACKS



PATENT NO.
0001368944



05 CONTAINER LOAD/UNLOAD

EN BOX 25 is a new patent by Italcarelli® for the loading/unloading of box glass from a closed container.

The arm is hydraulically extensible and can rotate by 90° to the right or to the left.

On the arm, equipment is positioned, which in its turn is assembled on a 180° rotating support. Moreover, it is equipped with cameras allowing visibility to the operator during the maneuvers inside the container. Such cameras are available on the display inside the driving cabin. This equipment allows clamping boxes of different sizes, which are locked to the same by means of 2 small extensible / retractable supports according to the box thickness.

The rotating support allows loading and unloading the plates loaded on the left or right side of the container. Moreover, it is possible to pick up and store the boxes in the warehouse.

Finally, the height of the arm is adjustable in order to allow operation inside the container without need of positioning it on the ground.



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- > HIGH STABILITY
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- > AC TECHNOLOGY

APPLICATIONS:

- > GLASS HANDLING FROM CONTAINERS
- > HANDLING OF GLASS FROM 40" CONTAINERS
- > GLASS HANDLING ON WAREHOUSE RACKS
- > HANDLING OF GLASS FROM CONTAINERS ON LOADING DECK
- > HANDLING OF GLASS FROM CONTAINERS ON TRUCK

Handling operations:

- > DLF/LES glass with packaging
- > DLF/LES glass without packaging

PLUS



Compact
dimensions



Low
maintenance
cost



High
visibility



Tailor made
solutions



Automatic
Functions



06 LAMINATED GLASS HANDLING

The lift trucks series TPEN and PTN can be used also in the handling of laminated glass within the autoclave.

These means are available also with load capacity beyond 60 tons and with such construction and dimensional features as to be able to deposit the racks with the glass inside the autoclave and to move it again once the process is finished. The use of these lift trucks allows transporting laminated glass with high flexibility and very high safety standards: moreover, thanks to special sensors, also the positioning inside the autoclave is extremely simple. Showing the same features of the float glass transporting models, they can also be used for both the production of laminated glass and of float glass.



ENGINEERING

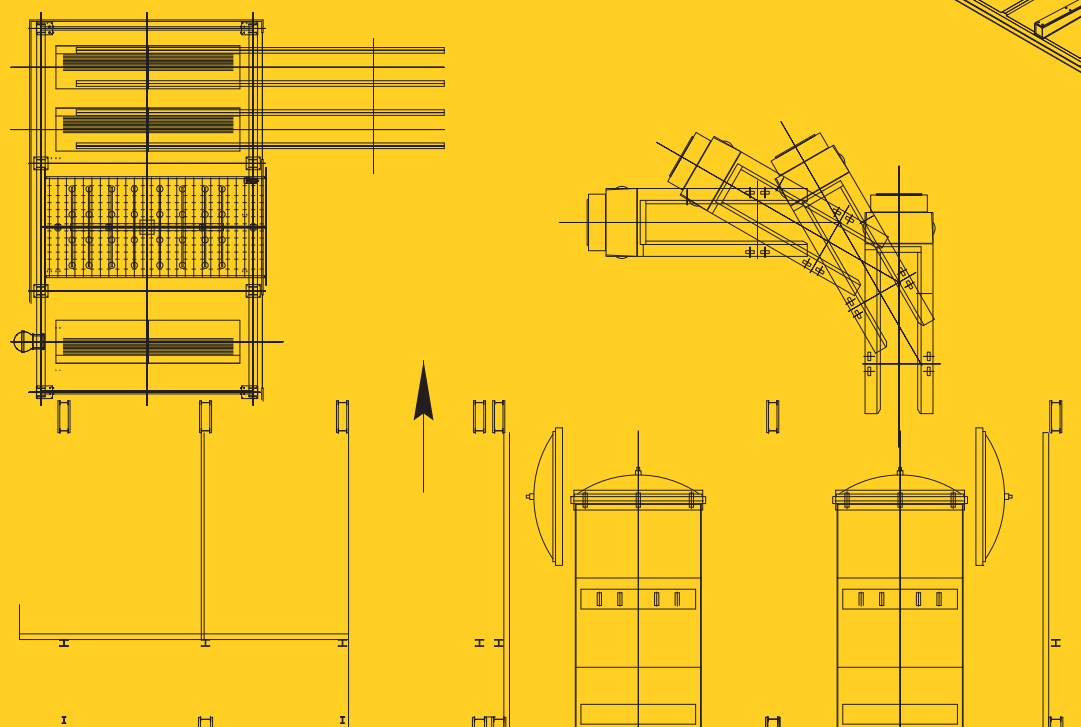
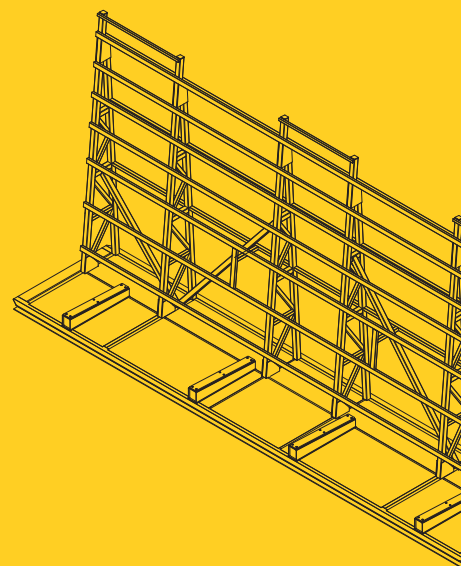
DEPARTMENT

Italcarrelli® offers its customers a highly qualified consultancy and engineering service.

Italcarrelli® offers its customers a highly qualified consultancy and engineering service. Thanks to our highly qualified designers, we are able to provide our customers with designs for racks and holds for glass storage: designs for the handling of flat glass from the cold end to the warehouse and from the warehouse to the shipment area.

Moreover, we supply customized designs for the handling of sheets inside the laminated, solar and automotive glass lines.

All designs are carried out with utmost care to all details and factors, with calculation of cycle schedules, optimizing the personnel inasmuch as possible and assuring the customer the minimum expenditure on machines and equipment.



LESS
50%



REDUCING CONSUMPTION BY
COMPARED TO COMPETITORS
GREEN

All Italcarelli machines are designed according to the latest standards in terms of environmental protection.

The battery powered machines are equipped with a software developed by Italcarelli in order to get the best performances with the minimum power consumptions.

Also on diesel / LPG powered machines the engines and the transmissions are controlled through a software developed by Italcarelli that allows to optimize the performances and to reduce the fuel consumption, leading to less emissions.

Less energy and fuel consumption means also to reduce considerably the operating costs.

Italcarelli installs on its machines only latest generation batteries and engines with certified emission levels including DPF.

FINANCIAL SERVICE

Thanks to several agreements with banks and financial institutions we are able to provide customized funding to our customers (also without opening a letter of credit) for the purchase of our machines.

Moreover, all products by Italcarrrelli can be rented (also with the maintenance included formula) and then purchased at the end of the rental on interesting terms. All our financial and renting solutions are applicable all over the world after authorization by our financial partners.





**ITALCARRELLI WORLDWIDE SERVICE:
FAST - EFFICIENT - RELIABLE**

SERVICE

Together with its machines, Italcarelli can provide start-up, training, after sale service and spare parts delivery all over the world. Upon delivery of each means, highly qualified technicians are available directly onsite for the first commissioning of the machines and for training the operators.

Moreover, we can train the technicians concerning the complete maintenance of the machines and, thanks to several collaboration agreements all over the world, we can provide efficient and immediate support as well as prompt spare parts delivery to all our customers. Italcarelli can also provide programmed maintenance services and full-service agreements.



REMOTE ASSISTANCE UNIT

All Italcarelli machines can be equipped with the remote assistance unit, a system thanks to which the Italcarelli technicians can get connected with the machines from our headquarter at any time and perform check-up, debugs, change settings, modify softwares, etc.

The manufacturer reserves the right to make any changes in the specifications without prior notice. The Company Italcarrrelli S.r.l. reserves, pursuant to and by effect of art. 99 of the Italian Law No. 633/1941, the property of this design/project and it forbids the reproduction or the vision, even partial, to third parties and/or competitor companies, unless authorized by the Company itself. The present design/project is also part of the know-how of Italcarrrelli S.r.l., pursuant to and by effect of art. 98 of the Italian Code of Industrial Property and it has to be considered as a Confidential Information pursuant to this law and in force of the General Conditions, being the receiver obliged to maintain confidential, to preserve and to safeguard adequately the design/project.

www.italcarrelli.eu



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