

Officine Mistrello: at the service of glassmakers with experience and innovations

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for OFFICINE MISTRELLO

Mistrello's
Bridge
Stock
Selector

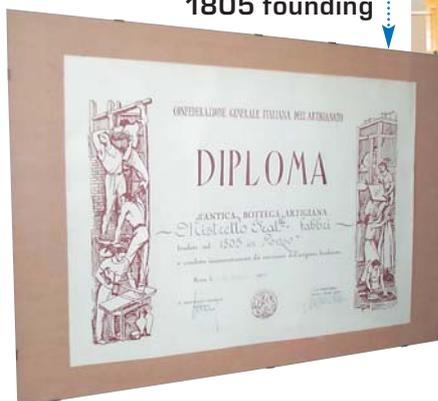
GL 6000

A recent visit to the premises of one of the "oldest" metalworking companies in Italy – Officine Mistrello – gave Glass-Technology International the opportunity of seeing some examples of production being manufactured, assembled and painted. The modular construction of one of its main products – classifiers – and the new Bridge Stock Selector, for loading and unloading operations from trucks to classifiers and then to cutting tables, were described fully. The same products will be on show at this year's edition of Vitrum, demonstrating how the company is moving with the times, in response to market and client demands.

This year marks the 200th anniversary for Officine Mistrello. The company, based in the area of Padua, north-east Italy was, in fact, set up in 1805 as a metalworking enterprise and entered the glass sector with the manufacture of its first classifier in 1993, sold in 1994. This first product was an automatic classifier with 30 positions for half-sized glass sheets. Always a family-run and managed company, and with over ten years of experience in the glass industry, the company is specialized in the construction of storage and handling equipment.

Mistrello's production line ranges from floor mounted load-

**Italian craft
guild
certification
of the
company's
1805 founding**



ers/unloaders able to handle glass sheets up to 6,000 x 3,210 millimetres, such as the GL 6000 loader/unloader; classifiers with 8, 18 and 24 positions of large glass sheets, and 8, 24 and 32 half glass sheets; glass unloading frames such as the LP 3000, 4000, 5000 and 6000; manipulators and, last but not least, the new, overhead Bridge Stock Selector.

During the recent visit of Glass-Technology International to the premises of Mistrello, we were shown around the workshop, where several items of the company's production line were being manufactured, assembled and painted. In

The Bridge Stock Selector removing glass sheets from the classifiers



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fact, all metalwork, assembly, painting and testing is carried out in-house at Mistrello's facilities, where the company employs a total of 20 people in its workshop area of 3,700 square meters.

Marco Mistrello and Matteo Aldegheri, the two owners of the company, informed us that all machinery and classifiers can be modified and updated as per customer requirements, as the modules they are made up of can have from 1 to 10 positions for the stocking of glass sheets, depending on the capacity of the cutting table they are loading the glass onto. This also means that the loading bay where the classifiers are positioned can be adapted as per the needs of the glassworks. This gives Mistrello a further advantage in the construction of "tailor-made" machinery.

An important part of the collaboration that Mistrello has with its clients is that of discussing thoroughly the position where the classifier will be placed, calculating the load bearing possibilities of the floor area with regards to the number and types of glass sheets to be stored.

Frames ready for assembly in the workshop



Software for the automatic classifiers ensures a perfect interface so that operations can be carried out directly from the offices of the glassworks, also enabling warehouse management with regards to loading and unloading of the glass sheets.

Another feature of Mistrello's automatic classifiers is the rotation of the glass sheets, so that there is never a residual stock of "old" glass in the glassworks.

Change in glass type is also high speed: less than two minutes from one glass type to another.

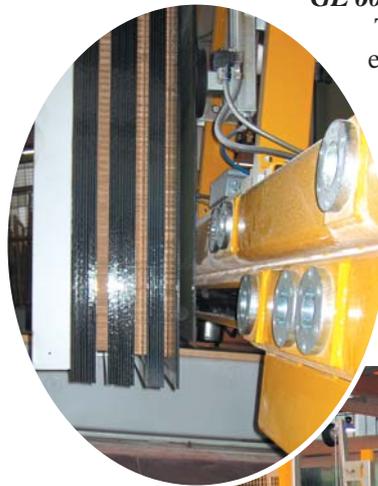
The company has a production level of about 1,400 frames per year of its three main products: classifiers (such as the GL 6000), overhead loaders, and shuttles.

PRODUCTION

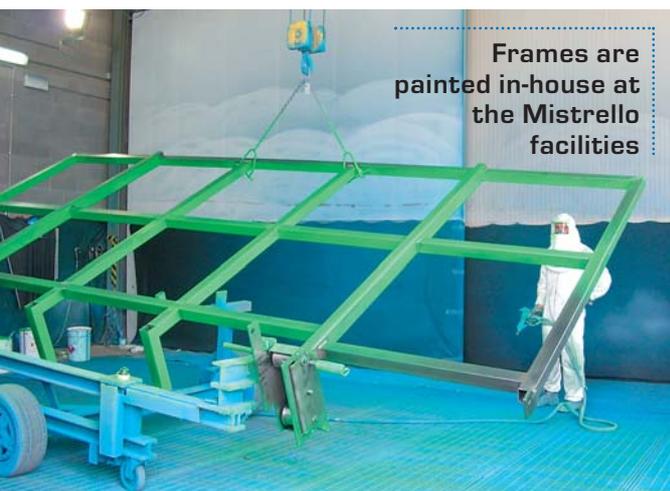
GL 6000

The GL 6000 is a floor-mounted loading/unloading machine that can be easily integrated into the cutting and laminat-

A detail of the "arm" of the GL 6000 loader/unloader Loading glass onto a cutting table



GL 6000 ready to load glass onto a cutting table

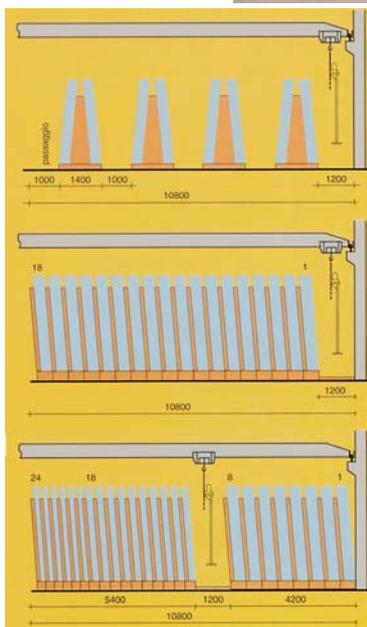


Frames are painted in-house at the Mistrello facilities





Classifiers



Glass stocking

ing lines of medium- to large-sized glassworks. The machine picks up the glass sheets from the classifiers and transfers them automatically to the cutting table. The GL 6000 can feed one or more cutting tables, with fast pick-up and lay-down times, while ensuring complete operator safety.

Classifiers

Mistrello’s classifiers, which can be semi-automatic and/or automatic, allow to considerably reduce occupied floor space. Loading operations are carried out by a series of high-performance reducers ensuring movement of the elements with minimum effort, while the mechanism is powered by two variable-speed motors, commanded by PLC.

The automatic classifiers have user-friendly command panels, which enable to manage all phases of the procedure, optimizing time thanks to an interface connection with the cutting table.

For the manual version of the classifiers, movement is carried out by means of a wheel located on the first element of the system, connected to a reduction device that enables movement of the elements with minimum effort.

The weight load of the classifiers depends on the base of the same classifier, not on the glass thickness. This means that more glass sheets of 3 millimetres can be loaded compared to those of 20 millimetres. Another possibility is that of dividing the glass sheets by colour and not by thickness – a system adopted by *Saint-Gobain*, in The Netherlands.

Normal “A” shaped classifiers have a space – for one of ten metres – for eight different types of glass with a loading base of 400 millimetres. With the same measurements, Mistrello’s classifiers can hold from 18 to 24 different types, as per the sizes of the glass sheets. Because of the modular construction, glassworks can start with a small sized classifier and move on to more space as the need arises.

An example of this is one of Mistrello’s clients, who was supplied with a manual classifier of 16 elements three years ago. Now, after expansion in the glassworks and acquisitions, this same classifier is being transformed into an automatic



Touch screen operator interface of the classifiers

system, by adding another classifier, with automatic bilateral loading, thus providing automatic management of the plant, with more elements added. Benefits from this new system will be, first of all, time, which is no longer needed for the selection of the different glass types as these are managed automatically. The same automatic system also eliminates the possibility of damage to the glass sheets and injury to the workers.

Bridge Stock Selector

The main advantage of the new product from Mistrello – the Bridge Stock Selector – is its high flexibility. In fact, due to its overhead position, it can move in all different directions, also unloading trucks, with a range of up to 46 metres compared to the average 6-metre range of floor mounted systems.

The software programme, supplied by *Optima*, of the Bridge Stock Selector has ten different possibilities, depending on how many glass sheets to be transported. Complete interface between the machine and the office, also regarding stock on hand and warehouse management are further important features.

The same programme can also keep in memory glass that is left over after the cutting of a glass sheet, thus eliminating waste glass – an important feature if we consider the “special” glass types of today’s market.

The machine also carries out automatic organization of the glass sheets in stock, bringing forward the “older” sheets so that there is also a circulation of glass and the glass in use is always “new”.

Speed is also an important feature, which can, with the Bridge Stock Selector overhead loader, change from one glass type to another in about 115 seconds, making it one of the fastest, if not the fastest loader in absolute!

Manipulators

Mistrello manipulators are available in three versions, with one, two or three “arms”. The manipulators can lift 200, 400 or 600 kilos respectively, with a maximum height of 3,500, 4,650 or 4,650 millimetres.

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The Bridge Stock Selector loading a truck right, and below, loading glass onto the cutting table



GLASS UNLOADING FRAMES

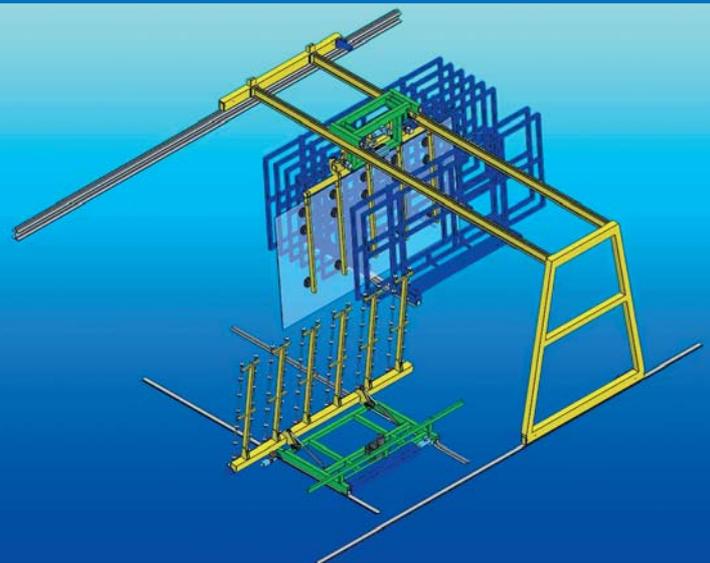
FRAME WEIGHT CAPABILITY

LP 3000	3,000kg
LP 4000	4,000kg
LP 5000	5,000kg
LP 6000	6,000kg

FRAME GLASS SIZE CAPABILITY PACKAGE THICKNESS

LP 3000	1,200 x 2,200 – 2,550 x 3,210mm	200mm
LP 4000	1,200 x 2,200 – 2,550 x 3,210mm	300mm
LP 5000	2,000 x 4,000 – 3,300 x 6,000mm	200mm
LP 6000	2,000 x 4,000 – 3,300 x 6,000mm	250mm

Possible movements of the Bridge Stock Selector



VITRUM

At the upcoming edition of *Vitrum*, the company will have some of this equipment on show, especially the GL 6000 and the Bridge Stock Selector, as well as an entire range of accessories, such as: unloaders, manipulators, and glass pliers.

ASSISTANCE

Mistrello guarantees assistance for its machinery via modem worldwide, as well as maintenance and controls that can be programmed and included in the sales contract as per customer request. The company also has a team of qualified engineers that are

ready to visit clients in 24 hours, where its machines are up and running in: Russia (2), United States (3), Holland (2), Belgium, and Italy (10).

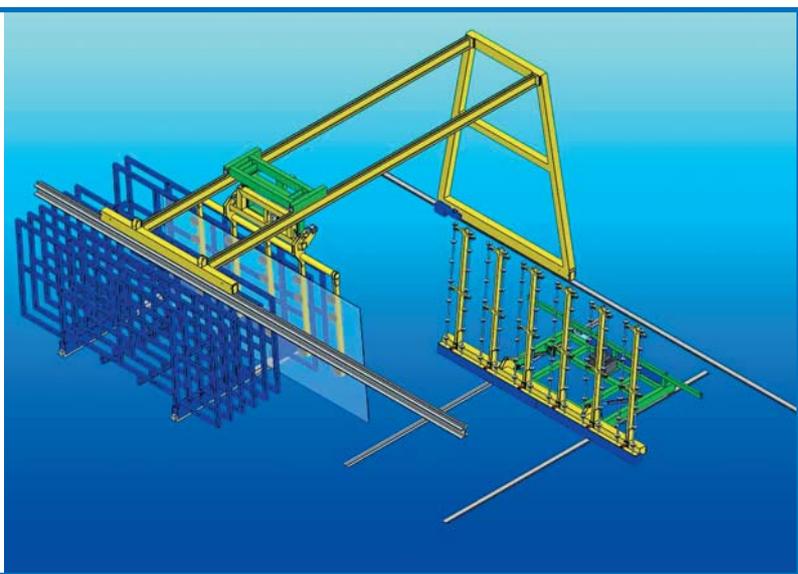
Some of Mistrello's clients have their machines running continuously from Monday to Friday and, in this case, programmed maintenance and controls are a fundamental part of a contract.

Another important feature is the possibility to have a 100 per cent guarantee for the duration of two years without any expense for the client.

Total guarantee is what Mistrello offers.

MANIPULATORS - TECHNICAL DATA

MODEL	1 ARM	1 ARM	1 ARM
Max. lifting weight (kg)	200	400	600
Max. height (mm)	3,500	4,650	4,650
Min. and max. radius (mm)	2,000 (B1) 700 (B2)	2,670 (B1) 650 (B2)	2,670 (B1) 650(B2)
Min. and max. gripping point height (mm)	1,500 (C1) 2,800 (C2)	2,250 (C1) 3,170 (C2)	2,250 (C1) 3,170 (C2)
Maximum working range (mm)	1,300	920	920
Max. rotation of central pin on base rotation platform	270°	270°	270°
Max. rotation of frame holder arm on pin	270°	270°	270°
Max. rotation of suction cup holder on pin	270°	270°	270°
Supply system air pressure (bar)	6	8	8
Air requirement (l/min)	250	350	350
Approx. machine weight (Kg)	800	1,100	1,300
Noise level (dB/A)	<80	<80	<80



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