

Nordimpianti System Srl, 66100 Chieti (CH), Italy

# New Extruder: Non-Stop Innovation

First presented in April at the 2016 Bauma International Trade Fair in Munich, and following successful initial operational trials conducted in Italy, the new Evo2 Extruder machine has fully surpassed the expectations of both Nordimpianti and the machine's first customers. The Extruder technology dates back to the 1950s and in the course of half a century has made great advancements both in terms of machine functionality and of reduced maintenance costs.



*Extruder machine Evo2 during casting on its first production run*

This technology was developed for the production of pre-stressed hollow core concrete slabs used in construction for floor or wall elements. There are 3 types of machines available for the production of these prefabricated elements, each with a different principle of operation:

- Extruder
- Slipformer
- Wet Casting

Nordimpianti has expertise in all three technologies and aims to provide its customers with the correct machine best suited to achieve the element characteristics desired. It has become evident that, considering the pros and cons of each machine and taking into account such factors as production costs, simplicity of use and the quality of the finished product, that extrusion technology is now considered to be the most advantageous for the production of hollow core slabs from 15 to 50 cm in height.

All through this advancement Nordimpianti has been a major player and since the mid-90s has invested heavily in the research

and development of its Extruder which now, in its third version, has become a benchmark in the market. The Evo2 Extruder is an example of the technical and functional improvements as listed below:

## Transmission Drive in a permanent oil bath

The transmission drive is the mechanical heart of the machine and has all the mechanical components such as chains, shafts, bearings, gears and connecting rods, driving the rotation and oscillation of the screws, forming tubes and side formers.



*Transmission Drive sealed in a permanent oil bath*

Nordimpianti has designed and built this transmission to ensure, not only the permanent lubrication of all the mechanical parts but also to protect the mechanical components from being exposed to the heavy work environment with the presence of water, dust and cement. Machines not having this protection are prone to extended downtimes and costly maintenance.

## Independent Screw Drive Motors

Unlike the previous machine, the Evo2 Extruder now has independent motors for each of the two outer screws in this way it is possible to adjust the speed of the outer screw feeders independently from the inner ones in order to optimize the working life of the screws which in turn will reduce maintenance costs.

Moreover this advantage also improves the quality of the finished product by allowing the outer screws to deliver the higher level of concrete required at the sides compared with the inner screws. This requirement is often impaired by extrusion machines especially when the screws have attained a certain degree of wear or where there is a reduced load bearing capacity and con-

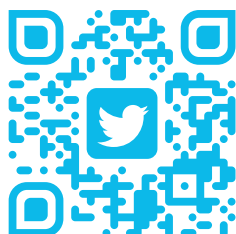


*Extrusion assembly with independent outer screw drive motors*

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*The useful tool holders mounted on the hopper*

crete compaction. In the Evo2 Extruder all motors used for the rotation of the screws are inverter controlled, therefore, the speed of the screws can be adjusted even during element casting and without having to stop the machine.

### New Smoother – compactor

The Smoother plays an important role in the Extruder machine giving the element, not only its finish quality but also working together with the screws, forming tubes and side formers to achieve concrete compaction.

The Extruder Evo2 smoother has been completely redesigned with a new top plate anti-vibration system as well as a new electric motor belt transmission. The latter in particular has been enclosed in a sealed housing to protect the belt from coming into contact with concrete residue inevitably generated during production.

This will mean avoiding troublesome belt failures especially when cleaning routines are sometimes overlooked. This results in an increase in machine efficiency and reliability



*Storage for the lifting loops mounted on the hopper*

ty as well as a reduction of general maintenance costs.

### Practicality and Functionality

In addition to the numerous technical design improvements the new Evo2 Extruder has been intelligently re-styled paying careful attention to detail.

Practical design and ergonomic aspects are usually ignored by many companies, Nordimpianti, however, is very careful to design machinery and equipment thinking first of all the expectations and needs of the machine operators and maintenance workers.

For this reason, Nordimpianti has improved the functionality and layout of the machine in the following ways:

- New 12" touch screen operator panel, easier and more intuitive to use;
- The addition of a tool-holder for tools used during casting, for marking, drilling and making openings on the fresh concrete of the manufactured element;
- A4 Clipboard, useful for production schedules or other admin;



*A4 Clipboard for production schedules mounted on the hopper*

- Storage points for lifting loops that maybe required to be inserted into the newly cast elements;
- The availability of an auxiliary power outlet mounted at the rear of the machine for tools such as drills and/or grinders.

### Outstanding Quality

The new Evo2 Extruder is capable of producing high quality hollow core slabs with outstanding technical features. The surface finish of the elements, the compaction of the concrete as well as the position of the prestressing wires and strands have been optimized because of the many improvements to the machine allowing the operator to achieve excellent results without compromise.

### FURTHER INFORMATION

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*Excellent quality of elements manufactured with the new Evo2 Extruder*



*The first H200 mm hollow core slab manufactured by the Evo2 Extruder*