The automation carries out the movement of the loads between the process line and the loading and unloading areas. The whole system is supervised by a system that manages the synoptic, the setting of the production recipes and it controls the production. By means of this system it is possible to set the data that characterizes each tank, the type of production that must be carried out, the control of the production, the printing of reports and the filing of data in Microsoft Access format.

The system is interlocked by the automatic bridge cranes. Besides the handling systems, the software package includes the automatic control of:

- Machine start-up and stop
- Transfer carriages
- Anodic bar traversing devices
- Heating equipment and controls
- Dosing systems
- Process control and management systems
- Printers
- Loading/unloading stations with adjustable height
Remote control board for automatic plant

Transfer carriages
Bridge cranes are used for lifting and transporting pieces through treatment tanks department – loading and unloading departments – hangers pickling area.

The structure and equipment used in the bridge crane have been specially designed for particularly difficult conditions involved in any anodizing process. Basically, the bridge crane consists of the following:

- N. 1 Carrying structure made with parallel wing beams joined together by means of steel sections.
- N. 2 Headpieces made of flat rolled sections. Each one is fitted with two wheels made of steel. These wheels have been treated thermally to make them harder.

The two driving wheels are equipped with gearbox directly coupled to the wheel.

- N. 2 Hoists consisting of rope-winding drum, two – speed geared motor with electromagnetic brake, high resistance steel rope, limit switch and fixed support base.

- N. 2 Traverse geared motors with variable speed. The speed is adjustable by particular reliable inverters (frequency converters). This system allows gradual start and stop without the pieces juddering or wobbling.

- N. 2 Guides for raising bar hooks. They are made of steel sections which are rigidly fixed to the bridge crane structu-
The lifting hooks are fixed to the hoist ropes and run along the inside of the guides on special carriages. The pieces hooked to the anodic bar are automatically inclined in the desired direction with the aid of a limit switch. The degree to which the pieces are inclined may be varied by means of the limit switch. The limit switches are located along the guides and automatically regulate the movement of the anodic bar (stop, change from slow to fast and vice-versa).