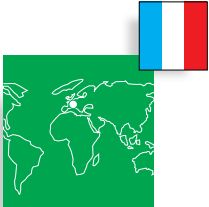


# CESA Cercy-la-Tour

Flexible workshop for automobile seat making

France



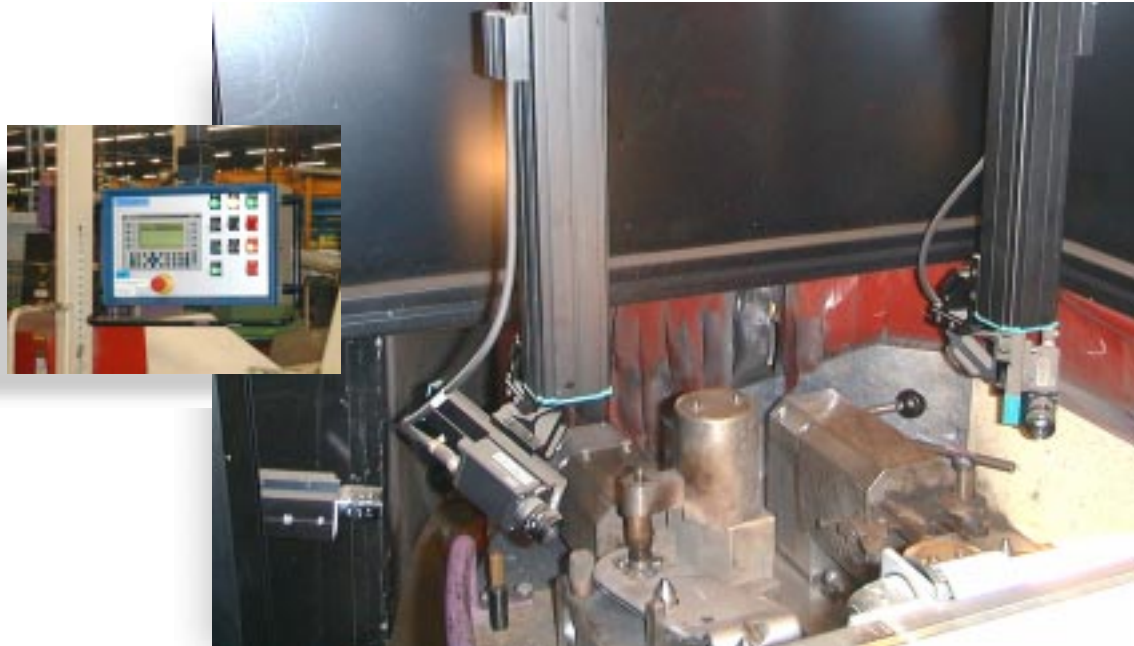
CESA

Cercy-la-Tour

Automotive industry

At Cercy-la-Tour, near Nevers, **Compagnie Européenne de Sièges pour l'Automobile (CESA)** produces **12,000 seats per day**.

In order to produce, each day, the 4,800 front seats needed in the assembly of the Peugeot 206, this manufacturer has installed a powerful, flexible system of automated lines, integrating numerous Schneider control systems.



Twenty **TSX Premium** and **TSX Micro PLCs**, together with **ATV 18** frequency inverters, **Cognex** vision systems, and **CCX 17** operator dialog terminals control these installations.

Making automobile seats involves numerous manufacturing and assembly operations.

Every seat is made up of a seat and a substructure, which can be moved on slide rails, and a back which is usually hinged. Depending on the model, there may be a lifting system for adjusting the height of the seat, a device for adjusting the back, head-rests, etc.

For a set of seats, it is therefore necessary to manufacture 20 or 25 seat models. Each of these consists of an average of around twenty parts, pressed steel sheets, bent tubes, seat webbing, springs, etc, which have to be manufactured, assembled and then painted before being sent to other factories to be finished.

Merlin Gerin

Modicon

Square D

Telemecanique

**Schneider**  
 **Electric**

# Flexible workshop for automobile seat making

## The workshop

The seat making workshop consists of :

- forming lines : 2 preparation lines for cold forming tubes for producing substructures and seat backs
  - welding lines : 3 lines of 3 islands for assembling joints, backs and seats; parts are moved between islands by conveyors
  - a painting line
  - finishing and reworking stations for final assembly and adjustment
  - dispatch stations which manage packing into containers according to customer requirements
- Additional machines perform riveting and punching operations.

## Assembling joints

Each island consists of 4 stations organized around a mechanized carousel :

- stations for manually supplying and removing parts
- an automated control station
- a robotic welding station

The islands are controlled by a **TSX Premium PLC** connected to an **ATV 18** speed controller which governs the rotation of the turntable.

A **CCX 17** operator dialog terminal is used for production management (choice of manufacturing or counting), island control (state of the installation, results of checks) and help with maintenance (faults on the installation).

A non-intrusive visual inspection system is used to ensure, before welding, that the parts are in the correct position, according to the type of seat required.

## Visual check

**Cognex** visual inspection stations are used to check that the production process in progress and the parts to be welded are consistent (choice, positioning, etc).

Each station is fitted with CCD cameras which, in conjunction with specific processing, perform inspections to :

- identify the template number before welding
  - check the presence of all the parts to be welded as well as conformity, positioning (type of part, flanging, plating the joint pair on flange).
- This device can be used to modify a checking parameter (position, tolerance, etc) simply, or even to inhibit a check. The user thus has the option of creating a new reference without the need for an external programming tool.
- The specifications of the template and parts are taken into account by the camera in 1.2 seconds.

## Management

A management system connected to the manufacturing control systems on an Ethernet network is used to track manufacturing in progress (types, faults, reworking) and to manage dispatch for finishing.

**This island design, which removes all electrical devices from the moving turntable,**

- simplifies production of equipment
- reduces maintenance operations
- offers increased flexibility in use and in adapting to changes in the finished product (2 types of template for 15 types of seat)

