

# Electro-Press KB TECH



Serie 



*The solution for high requirements of industrial processes*



## FLEXIBILITY

The motorization procures highest flexibility for precise position and force in press processes.



## QUALITY

Control and analysis of process parameters for every cycle.



## TRACEABILITY

Saving and transmission of press data (Ethernet protocol, USB etc.).



## ERGONOMICS

Loading of parts outside of the press process zone, cycle start by touch button and touch-screen.



## SIMPLE OPERATION

The press is ready for use and may be equipped with automatically recognized interchangeable tools.



**KBTECH**

[www.kbtech.fr](http://www.kbtech.fr)

Control board with start button, touch-screen and USB port

Emergency stop

Cycle start by touch button

Loading drawer with pneumatic low pressure control

Drive system

Frequency converter

High precision roller guiding

Charge amplifier

Force sensor

## Electro-Press

### The advantage of total flexibility



#### Precise positioning

The mechanical transmission elements have been selected with care in order to ensure minimal play between drive and tool. By its deflection compensation software and its high resolution encoder, the electro-press KB TECH is particularly appropriate for the execution of precise positioning operations.

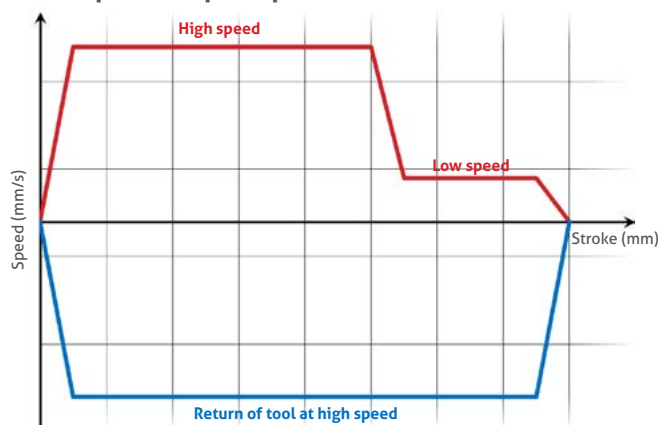
#### Real-time force measurement

The press is equipped with a force sensor as standard, located as close as possible to the tool, permitting real-time force measurement and also the detection of abnormal collisions or frictions during compression and traction.

#### Easy configuration

The process may be optimized comfortably on the touch-screen by setting of speed, position and force. This mode is protected by a password in order to restrict access to maintenance staff.

Example of a speed profile



## Analysis of press data

### Quality in the core of the process



#### Data acquisition and storage

Acquisition chains are dimensioned for a high reliability of the description of the press process, with one force value for every 10  $\mu\text{m}$ . Data are stored within the equipment and represented on the display showing force (N) as function of position (mm).

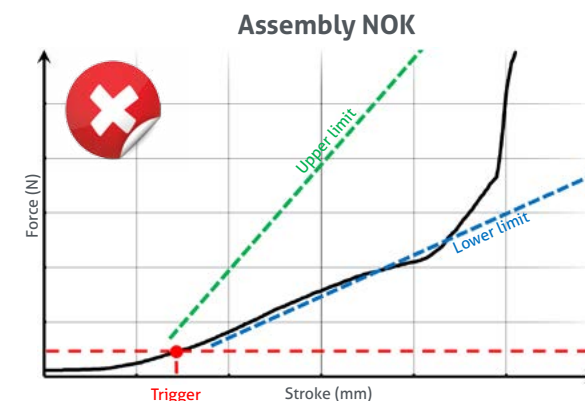
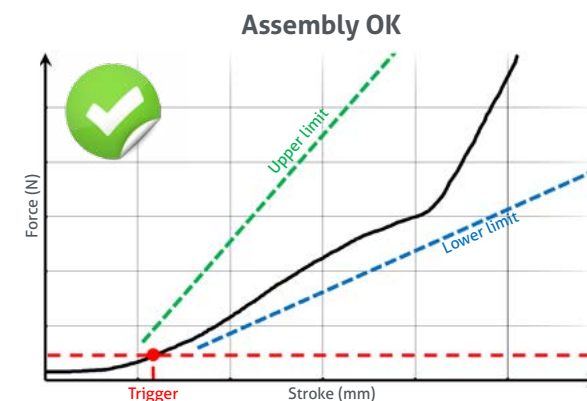
#### Advanced analysis

Data are not only stored but also analyzed for the whole cycle in order to monitor the assembly quality. For this purpose, press criteria have been configured in order to limit the force curve (N) and the according mathematical derivative (N/mm).



#### COMPENSATION OF TOLERANCES

In order to compensate the height tolerance properties of the assembled parts it is possible to configure the conditions of the end of the press process and of the analysis conditions by setting a trigger point. This trigger point corresponds to the beginning of an increase of force.





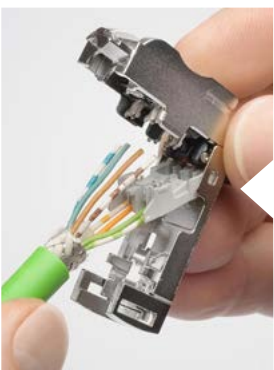
Communication devices

100% Traceability

 The design of the electro-press KB TECH is based on an extensible modular PLC – well adapted for upgrades. There are 2 free Ethernet ports and one USB port on the front side as standard, thus it is possible to integrate a serial interface, a profibus line or additional inputs/ outputs. By this, the press is perfectly adapted for integration in any type of traceability system.



**USB PORT ON THE FRONT FACADE**  
The USB port is situated on the front of the press and permits the recovery of all press data by means of a USB stick. Data are exported in the form of CSV files.



**ETHERNET PORTS (2X)**  
They permit the connection of a console for programming and interfacing with the site network. Also, the remote maintenance of the system is possible.



**BAR CODE READER (\*)**  
For the reliable identification of a product or of a batch of components it is possible to connect a mobile or fixed bar code reader with the press.



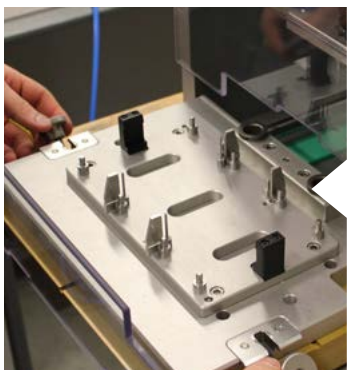
**VISUAL CONTROL (\*)**  
If a control of the press product is required, a sensor or an AOI system can be installed directly in the press cage.

(\*) Optional functions

Ergonomics and security

Optimal user-friendliness for optimized productivity

 The unique design of the electro-press KB TECH places man veraciously into the center of the process. The easy access, the user-friendliness and safety have been designed with special care and make this equipment efficient and attractive for use.



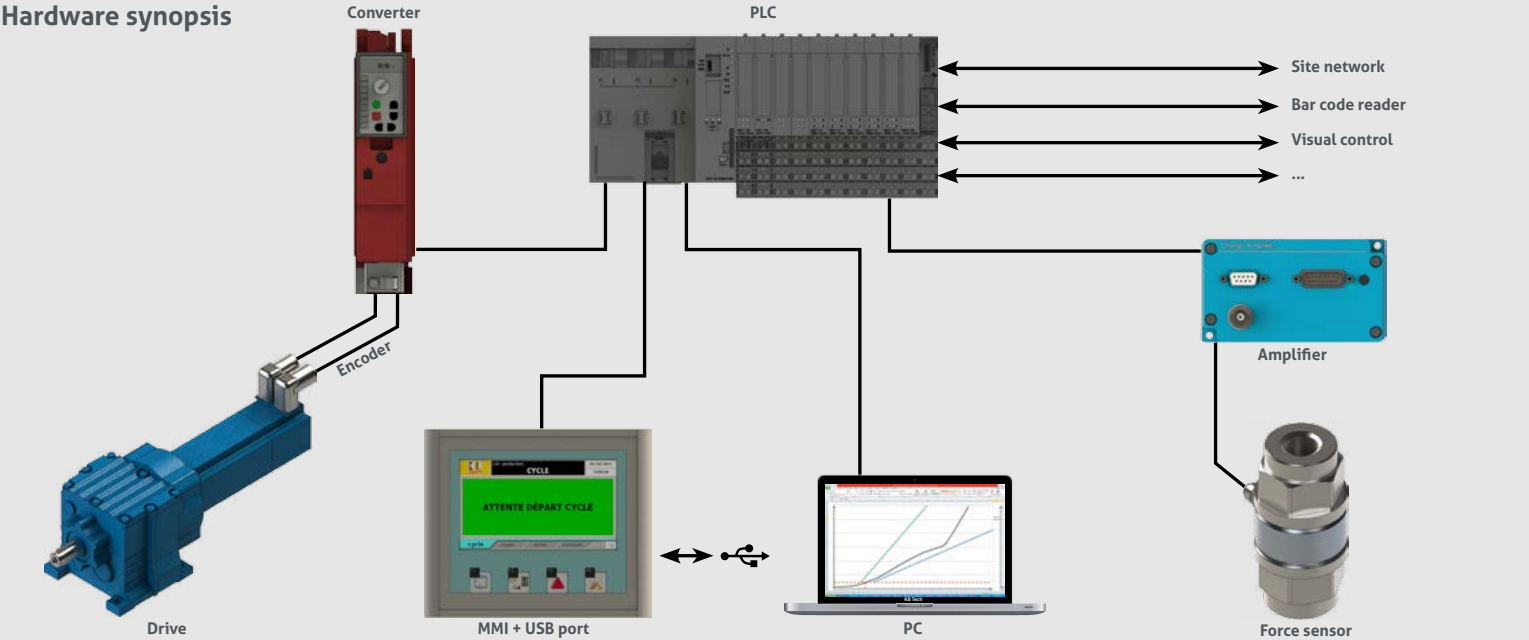
**LOADING ON A DRAWER**  
The loading of the parts is done on a drawer outside of the press process zone, for improved loading conditions and for optimized safety for the user. The drawer is moved by means of a pneumatic actuator, powered with low pressure for ensuring a quick transfer and for avoiding any risk of pinching.

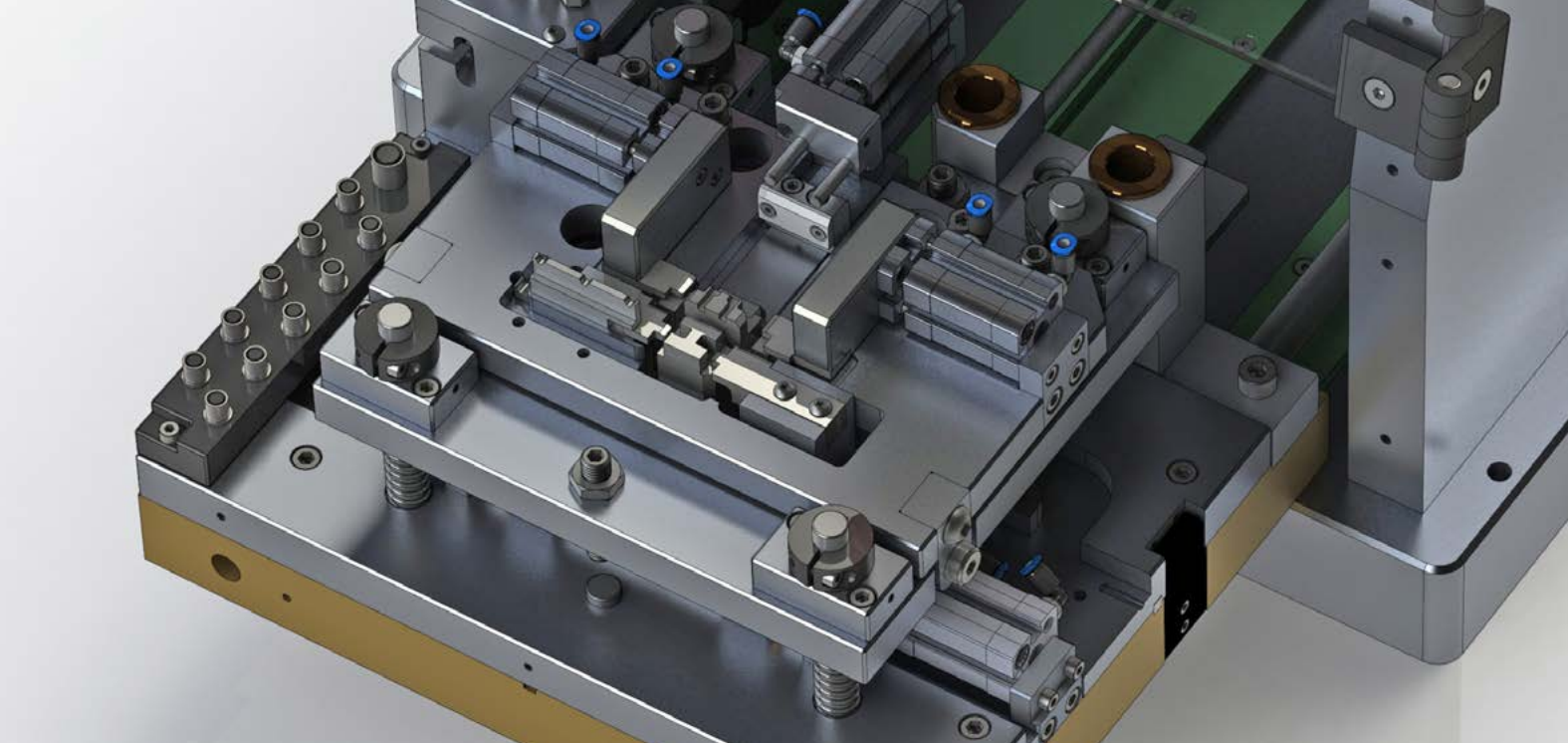


**TOUCH BUTTON CYCLE START**  
Cycle start is triggered by the short passage of the hand in front of a touch button on the front façade of the press near the loading zone. There is no need for a distinct pressure, a simple streaking is sufficient. During the press process operator's hands are free and he can ensure parallel tasks.



**TOUCH-SCREEN**  
The touch-screen is located on the front side of the equipment, and it supplies to the operator essential information about the correct process of press cycles: equipment state, production number, cycle OK or NOK, preview of the force/ position curve etc..  
Screens for configuration and for diagnostics are permitting to the maintenance staff the configuration of the pressing profile and the use of the help for resolution of errors and trouble-shooting. The display is based on Microsoft Windows CE, permitting for example the connection of external USB equipment (keyboard, USB-stick) or the use of the explorer of the operation system.

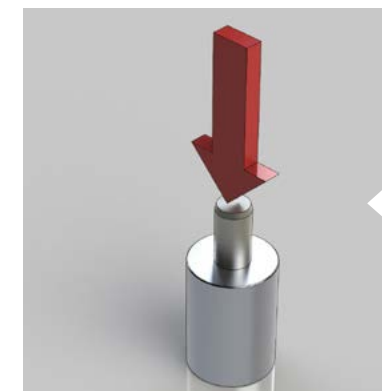




## Application examples



The extreme flexibility of the electro-press KB TECH allows for a multitude of different applications in all fields of activity. The following classical pressing profiles are pre-programmed in the equipment, permitting to respond to the most current needs. Nevertheless, the modular PLC, the non-proprietary programming language and the supply of the source code permit a more sophisticated configuration of the equipment if required.



### STOP IN POSITION

*Application example: Pressing one part onto another*

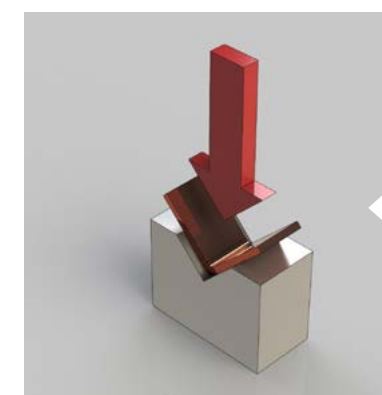
The tool descends until a programmed position. This may be an absolute or a relative position in order to compensate height tolerances. If high forces are used, a compensation of deformations of the press and of the assembly may be taken into account in order to improve the precision of the positioning.



### STOP WITH FORCE

*Application example: Gluing*

The press descends until a programmed force is reached. This force can be held for a given time if required. This movement profile permits also a precise and rapid stop by a limit stop in order to ensure that the components to assemble are perfectly pressed one against the other.



### STOP AT INCLINATION

*Application example: Bending of a part*

The press descends until the proportion force/ effort corresponds to an inclination of the assembly. Such a stop condition may be required in order to ensure tightness of certain pneumatic or hydraulic plug types.

## Exchangeable tools

## Simple and efficient



### A DESIGN DEPARTMENT AT YOUR DISPOSAL

With more than twenty years of experience in the design and the manufacturing of automated special machines, air presses, tools and templates, KB TECH has acquired high technological know-how.

Our design department offers services in the field of

- realization of exchangeable tools of any type,
- programming of analysis criteria for press cycles,
- specific customizing of air presses according to your needs, even if sophisticated.



### Exchangeable tools

The drawer and the upper tool are equipped with mechanical interfaces allowing for comfortable tool change without wrench. If required by the application, there may be electric and pneumatic distributors on board of the drawer, permitting to equipment the tool with actuators and/ or detectors. As an example, it is possible to check the presence of parts before starting a cycle, or to maintain parts by means of cylinders.

### Software recognition

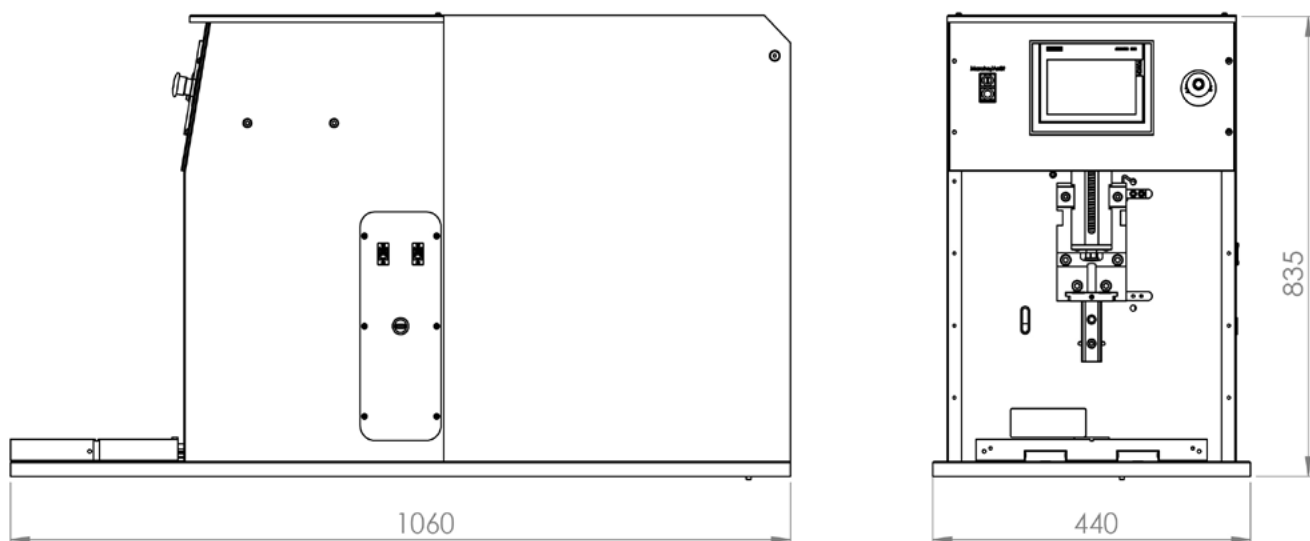
A mechanical poka-yoke prohibits a wrong positioning of the tool, and a check by software is performed in order to control the correspondence of the upper and lower tools.

This identification permits also to select automatically the appropriate press program, without need of any intervention on the control board.

# Technical characteristics

|                           |                         |                   |                      |
|---------------------------|-------------------------|-------------------|----------------------|
| Dimensions                | See below               | Temperature range | 10 - 40 °C           |
| Weight                    | ca. 120 kg              | Power supply      | 3 x 380 VAC, 50Hz    |
| Direction of action       | Tension and compression | Pneumatic supply  | Tube Ø8 mm, 3 bar(*) |
| Range of force            | 1 - 50 kN               | Screen diagonal   | 4" = 9,36 cm (*)     |
| Stroke                    | 100 mm (*)              | Screen resolution | 480 x 272 (*)        |
| Linearity of force sensor | <0,5 %                  | Control cabinet   | Integrated           |
| Stroke resolution         | <0,5 µm                 | Safety class      | 4                    |

(\*) May be customized on request



All technical data may be customized upon request (dimensions, pressing force, stroke etc.).



**CE** All KB TECH equipments  
comply with European safety  
standards

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