

# SICMI

PRESSE OLEODINAMICHE

# HYDRAULIC PRESS

## Model PBM



## Introduction

The **hydraulic workshop press**, PBM model, is ideal for various processes, including **straightening** sheet metal, **assembling** and disassembling bearings, bolts, washers or for carrying out **assembly** work.

The main feature of this model is the **movement of the work platform**. This function is very useful because it allows you to easily position bulky materials to be worked on the platform and then move everything under the hydraulic cylinder.

The latter has a stroke of 500 mm and is available in both the **fixed and mobile versions**.

The press is equipped with a **two-speed control unit** which is activated by simultaneously using the lever and the button.

The control unit also features a **knob (1)** for adjusting the maximum working pressure and the **pressure gauge (2)** to display the value of the pressure in use. There is also an **indicator (3) for the oil level** inside the hydraulic circuit.



## Hydraulic cylinder: fixed or mobile

The PBM hydraulic workshop press is available with a hydraulic cylinder with a **stroke of 500 mm**.

The cylinder can be **fixed** or **mobile**.

In the version with a mobile cylinder, the press is equipped with a **handwheel** for the transverse movement of the cylinder from left to right.

The **cylinder can be stopped at any point** and this function is very useful because it allows you to move it laterally and then lower it to the exact point of the sheet metal on which you want to work, without having to move the metal piece.



## Work platform

The work platform is **movable by manual movement**. The table slides along guides on which **spring cups** are installed, which have the task of absorbing the pressing load and ensuring smooth sliding of the platform.

Upon request, the platform can be moved by **hydraulic motor**. This function is recommended for higher tonnages or if particularly heavy pieces must be processed.

On one side of the press there are **two mechanical stops** to lock the platform in the required position.

The work table is **hollow** and this allows the material to be processed at height.

The large two-column front opening of the machine allows long or wide pieces to be easily positioned.



## Support plate

A plate can be welded onto the work platform on which to place the material to be pressed.

This plate is available in **two different variants**:

### **Welded and raw support plate**

It is a painted plate welded to the press structure, but is not machined on the surface. It is the ideal solution for customers who do not need a perfectly flat platform.

### **Welded and milled support plate**

This is a plate welded to the press structure and completely milled. This solution is chosen by those who need to carry out extremely precise machining and need perfect coplanarity between the cylinder and the work platform.





## Semi-automatic mode

The semi-automatic mode involves the installation of **microswitches** that allow the **cylinder stroke to be adjusted** and thus its maximum descent and ascent point to be set.

Microswitches are **sensing devices** that monitor and signal the extreme position of the cylinder during its movement.

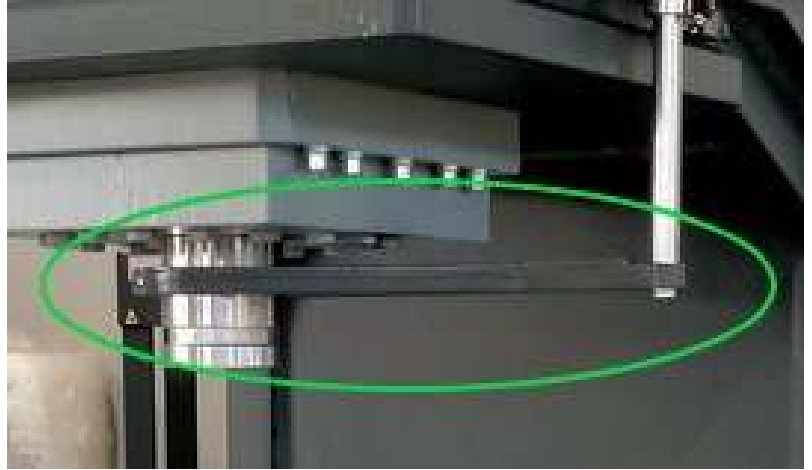
When the cylinder approaches its final position, the **microswitches detect the stopping point** and send a signal to the press control system.

This signal can be used to stop the cylinder movement, or, in the automatic version (not available for PFC models), they can also be configured to automatically activate the return of the cylinder to its original position.

In addition, the semi-automatic mode also includes the installation of the stem anti-rotation device.



## Stem anti-rotation device



The **cylinder stem anti-rotation device** is a system that prevents twisting of the stem, thus maintaining the cylinder **descent perfectly linear**.

This device is very useful especially in the **molding phases** to keep any molds fixed to the cylinder in line.

This system is a **sort of metal jaw** equipped with two holes: the stem is inserted into the larger hole, while the guide rod slides into the smaller hole.

The stem anti-rotation device is supplied included with the kit for the semi-automatic mode or can be ordered separately.

## Oversized welds

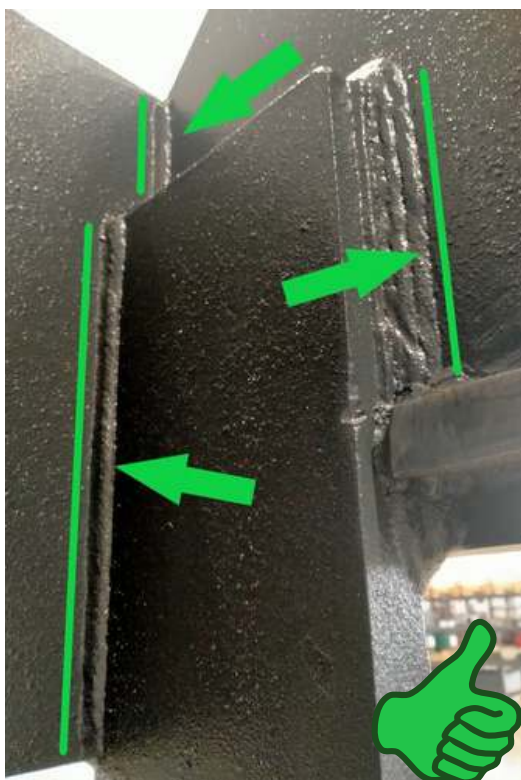
The press structure is made of **very thick milled steel**, which is **completely welded** along the entire perimeter of the press with **oversized welds**.

In fact, to ensure that the press can absorb even the highest pressures and maintain its **structure unchanged over the years**, it is necessary that the welds are made in an optimal manner.

This differentiates us from most of our competitors who, to contain production costs, make much thinner welds and only in some points of the frame.

Below on the left is an **example of welding** made by **SICMI** and on the right that of a European manufacturer.

**SICMI**



**European manufacturer**





## Operation

The press works by using the **lever and the button** at the same time, as required by the current safety regulations for all presses, whose cylinder **descent speed exceeds 10 mm/sec.**

The regulation requires that **presses under 10 mm/sec are slow enough** and the machine can therefore be operated with a simple lever or with the use of the pedals, thus having one or both hands free to move the piece to be worked.

For all presses with a **speed above 10 mm/sec**, European regulations require the operator to have **both hands busy** during the pressing phases with the aim of preventing the user from inadvertently injuring himself during the descent of the cylinder.

Furthermore, the regulation requires that the lever and the button be placed at a **certain distance and at different heights.**

The purpose is to prevent them from being operated by one hand only (or even for example by pressing with an arm or a part of the body) while the other hand is moving the piece to be worked with the risk of injury.



## Lever protection

Another safety measure is the **metal casing** that surrounds the base of the operating lever.

This measure is used to ensure that the **lever** can only be **moved** using the **fingertips** and therefore cannot be activated by an involuntary impact or fall of the operator.

Furthermore, as an additional form of safety, the operation of **SICMI** presses requires that the lever, when pushed forward, **raises the cylinder**, while if it is pushed towards the operator, the **cylinder descends**.

This means that even in the **event of an accidental fall** of the operator and an involuntary impact against the lever, the latter would be pushed forward and would raise the cylinder and not the other way around.

In fact, it is clear that **only the descent** of the cylinder is **dangerous**, while its ascent never involves any risk for the user.



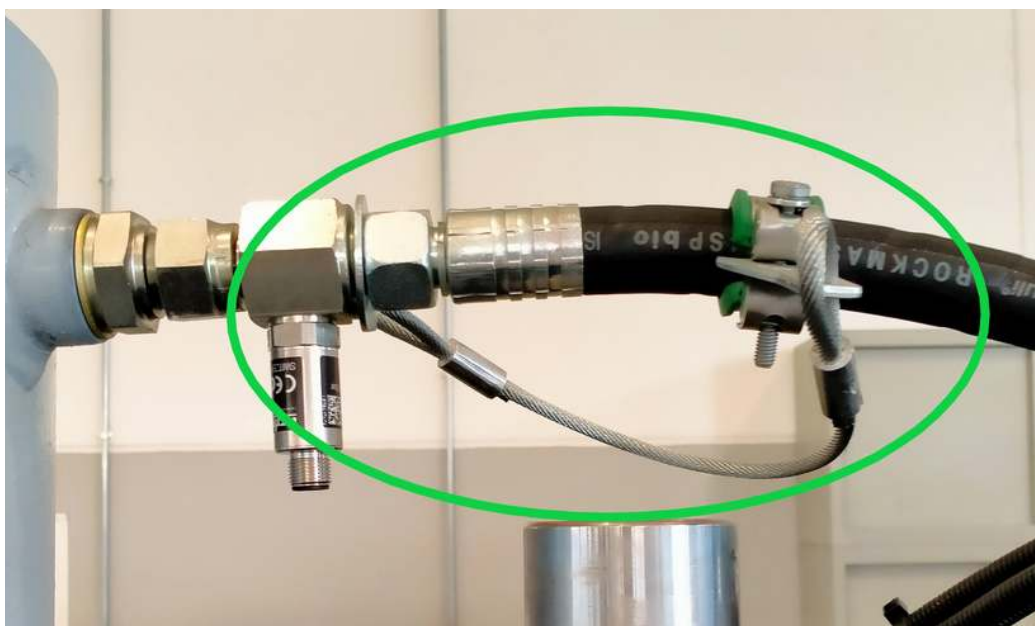
## Stopflex anchoring

All presses produced by **SICMI** include safety systems for **anchoring hydraulic hoses**.

In fact, the **force** released by a **pressurized hose**, in the event of the fitting slipping off, would be **very dangerous** for things or people in the vicinity.

This is why the hydraulic hoses of all presses produced by **SICMI** are fixed using the **Stopflex retention system**, which was designed to stop the stroke of the slipped hose and prevent the force released inside it from triggering a fearsome **"whip effect"** and at the same time **flooding** the work environment with **hydraulic oil**.

Thanks to this system, in fact, the **hose is anchored** to the system using a rope, thus ensuring full protection of the operators, the safeguard of the press and the workshop.



## Anchoring hydraulic hoses

In addition to the Stopflex safety retention system, the hydraulic hoses are firmly **fixed** to the press frame by means of **special collars** that prevent any movement of the hydraulic hose.

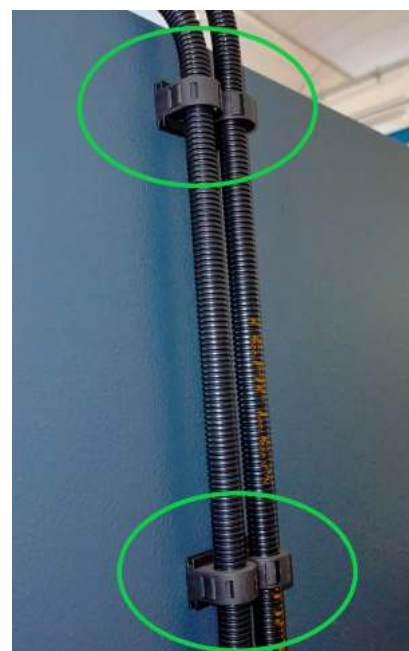
These collars have the base **welded** to the frame, while the upper part is **screwed**.



## Anchoring electrical cables

The pipes for the passage of electrical cables are **anchored** to the frame of the press by means of **special collars**.

Unlike many competitors who use simple plastic ties that are destined to dry out and break in a short time, these collars are made of **highly resistant material** and are **screwed** to the frame of the press.



## Maximum pressure valve

As an additional measure to ensure the **safety of the operator** and to **safeguard the machine**, a maximum pressure valve is installed inside the hydraulic power unit on all hydraulic presses produced by SICMI.

The maximum pressure valve has the function of **regulating the maximum pressure** in the hydraulic circuit.

It is used to **protect the pump** and other components of the system from excessive pressure and therefore to maintain a constant level inside the hydraulic circuit.

It is a normally closed valve capable of opening when a predetermined pressure is reached and of **discharging the flow rate** necessary to keep the circuit pressurized.

In fact, in the event of a malfunction of the hydraulic circuit, this safety valve prevents an excessive quantity of oil from reaching the cylinder, thus **preventing the risk of overpressure**.





# Electrical system

The press works with a **three-phase** electrical system with a **380V** power supply.

The electrical panel features an **emergency button**, which immediately stops the machine from working, as well as buttons to operate the press.

As an additional safety measure, there is a **transformer** inside the electrical panel that reduces the current from **380V to 24V**, that is, to a **voltage** that is **not dangerous** for human health.

In fact, in the **event of a malfunction** in the system, the current could propagate to the electrical panel, with the risk that the operator could suffer an **electric shock** when pressing one of the buttons on it.



## LOTO Blocking

The electrical panel cabinet is equipped with the **Logout - Tagout (LOTO) locking system** which allows the press ignition control to be locked with a padlock and therefore the machine to be made **safe** during **maintenance phases**.



## Electrical panel closure

The electrical panel cabinet is also equipped with a **key locking system** to keep the electrical components safe and **prevent unauthorized personnel** from gaining access.





**PRESSE OLEODINAMICHE**

*Only the best is enough*

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