

PRESSE OLEODINAMICHE

HYDRAULIC PRESS Model PMM



GENERAL FEATURES

Introduction

The hydraulic press with mobile frame and cylinder, model PMM, is used for **straightening** sheet metal and for various carpentry jobs.

Thanks to the **longitudinal movement of the gantry**, combined with the **transverse movement of the cylinder**, it is possible to reach any point of the sheet metal without having to move it from the workbench.

The stroke of the hydraulic cylinder is 500 mm and the PMM hydraulic press is available in models from 150 to 600 tons.

The movement of the portal and the cylinder (up and down, right and left) are managed as standard through the use of **3 levers to be operated simultaneously** with the control button, as required by current CE regulations in terms of safety. Upon request, the 3-lever control can be replaced by the **pendant button panel** or the **radio control**.

The hydraulic power unit as well as the electrical panel are mounted on one side of the structure.

A metal guard is also supplied as standard equipment.











GENERAL FEATURES

Basic model

The basic version of the press features an **open and milled "honeycomb"** structure of the upper platform, i.e. without the work table needed to perform straightening.

This configuration was designed for those customers who prefer to make the work platform themselves.

The basic version works by using **3 levers** located on the side of the press structure:

- A lever to lower and raise the cylinder.
- A lever to move the cylinder transversally.
- A lever to move the frame back and forth.

The **levers must be used simultaneously with a button** located on the electrical panel, as required by current safety regulations for all presses whose cylinder descent speed exceeds 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 cylinder descent.







Work surface

The **work surface** has the function of supporting and resting the sheet metal or material to be straightened.

It is **completely welded with oversized welds** both along the entire perimeter of the machine, but also in the lower part on all the support points with the internal "honeycomb" structure.



This ensures that the work surface is **free from any oscillation** and can withstand even the most demanding pressing jobs, so as to remain unchanged over the years.

Furthermore, the **surface is completely milled** in the upper part, so as to have a perfectly flat and level surface.

The combination of these features allows for extremely precise straightening operations.



Lifting cylinders

The lifting cylinders are installed on the hydraulic press bed and have the **function of lifting the sheet metal** to allow the operator to place support shims underneath.

Once these shims have been placed, the cylinders are lowered and the metal piece can be straightened.

Subsequently, when the sheet metal processing is finished, **the lifting cylinders allow the material to be lifted** and thus facilitate its handling.

The cylinders have a diameter of 25 mm with a stroke of 80 mm and each of them can lift up to 5 tons.

The customer can choose whether to install **6**, **8**, **10** cylinders or a higher number on request.

They are moved with the lever control on the hydraulic power unit (basic version) or with the pendant button panel or radio control.



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Pendant control panel

The **pendant control panel manages the following hydraulic movements** of the press:

- the raising and lowering of the main cylinder
- the transverse movement from left to right of the main cylinder
- the longitudinal movement of the upright
- the operation of the lifting cylinders (if installed).

The control panel is a very useful accessory for hydraulic straightening presses, because **it allows the operator to move freely around the machine** and to be able to closely control the pressing phases, which would not be possible with the fixed control with levers and buttons located on the side of the press.

The control panel is equipped with a cable with **double button operation to be pressed simultaneously**, so as to force the operator to have both hands busy, as required by safety regulations.

The control panel, if chosen as an accessory, replaces the 3-lever control that is supplied as standard in the basic version.



Radio control

The radio control allows you to **operate the hydraulic press remotely** and allows the operator to move with greater freedom of movement compared to using the pendant control panel.

The radio control always works with the use of **double buttons to be used simultaneously** and manages all the movement of the main cylinder, the press frame and the lifting cylinders (if installed).

The radio control is supplied with **2 easily interchangeable rechargeable batteries**, so as to always have a charged reserve battery ready.

However, if both batteries are accidentally discharged at the same time, it is possible to continue using the controls installed on the electrical panel.

Also in this case, the radio control replaces the 3-lever control present in the basic version of the press.





Digital controller

Upon request, **the Siemens KTP 900 - 9**" **touchscreen display** can be installed on the electrical panel, allowing the following parameters to be set:

- Maximum stroke of the hydraulic cylinder in ascent and descent
- Pressure holding time on the lower platform
- Working pressure
- Decompression time
- Piece counter
- Prestop ascent/descent: function that allows the ascent or descent to be stopped before reaching the quota, thus eliminating errors caused by speed and cavitation due to the weight of the mold. It guarantees a precision of 0.1 mm.
- Alarm management

It is possible to store up to **100 different processing programs.**

Together with the installation of the Siemens touchscreen display, **a screen is mounted on the upper part of the frame**, on which it is possible to view the values relating to the position of the cylinder and the pressure exerted in real time.

In addition to this, the stem anti-rotation device is also installed.





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 digital control kit** because it allows the cylinder position detection system and the pressure transducer to be connected.

Heat exchanger with decompression valve

The air/oil heat exchanger is used to **cool the hydraulic circuit** of the press and uses ambient air as a cooling source, which is conveyed to the circuit by a fan.

It is used to **prevent overheating** of the hydraulic circuit and to maintain a constant oil temperature, thus **avoiding damage** to the hydraulic system and seals.

It is a particularly recommended accessory when the press needs to work for long production cycles or in very hot environments.

The **decompression value is also mounted** as standard together with the heat exchanger to safeguard the cooling system.

The decompression valve has the task of **decompressing the pressure** accumulated in the hydraulic circuit and comes into operation just before the hydraulic cylinder rises, thus **avoiding overloads** and preventing potential damage to the machine.

When the pressing cycle is completed or when the stop control is released, the decompression valve opens, allowing the hydraulic fluid to return to the reservoir in a controlled manner. This process ensures that the hydraulic cylinder stops safely and there are no sudden movements.





GENERAL FEATURES

Oversized welds

The structures of all the presses produced by **SICMI** are 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.**



European manufacturer



Metal guard

The press is supplied as standard with a metal guard placed between the columns of the machine.

This guard **secures the area of the transverse movement of the cylinder** and prevents the risk of crushing the hands of a second operator between the columns and the flange of the cylinder.

This is in all respects an **additional safety measure**, which is not designed for the operator who operates the press, given that to operate the machine he must have both hands busy to press the double buttons (or lever and button), but **for a second possible worker**, who, despite the safety regulations expressly prohibiting it, accidentally finds himself operating in the work area of the hydraulic press.



Stopflex anchorage

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 pipes

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 closing

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.





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Buly the best is enough

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