

SICMI

PRESSE OLEODINAMICHE

HYDRAULIC PRESS

Model PRT



Introduction

The hydraulic press with **travelling gantry**, model PRT, is designed for **straightening** pipes and round metal profiles.

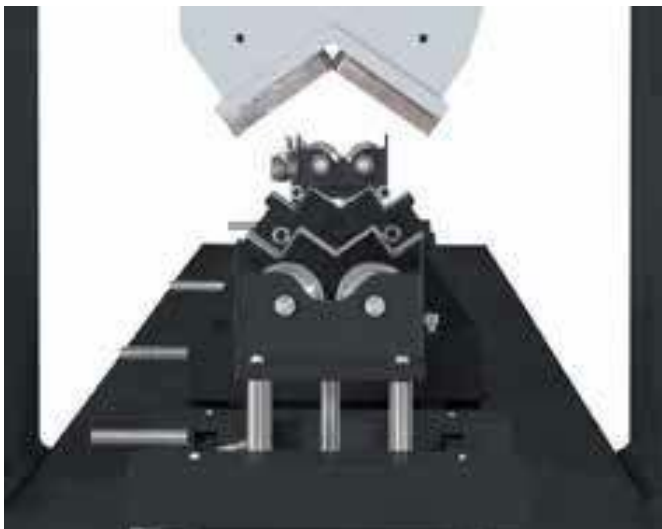
The upper frame slides along the main base of the press via a hydraulic motor.

On the lower base there are **4 manually operated sliding supports** on which the metal pipe to be straightened is placed.

The two central supports have the main purpose of **supporting the metal profile** during the pressing phases, while the two lateral supports, one of which is motorized, have the function of **lifting and rotating the pipe**.

The **double-speed hydraulic cylinder** is positioned on the mobile column and on it is installed the equipment necessary to carry out the metal pipe straightening operations.

The press is supplied as standard with Rexroth solenoid valves, with Siemens PLC and with Siemens KTP700 touchscreen display for setting the working parameters and for setting the pressing times and operating pressure.



Digital controller

The **Siemens KTP 700 touchscreen** display is installed on the press's electrical panel, which allows the following parameters to be set:

- Maximum stroke of the hydraulic cylinder in ascent and descent
- Pressure holding time on the lower floor
- Working pressure
- Decompression time
- Piece counter
- Pre-stop 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**.

Control panel

The control panel is installed on one side of the mobile frame and **manages the following hydraulic movements** of the press:

- the ascent and descent of the main cylinder
- the longitudinal movement of the gantry
- the lifting and rotation of the tube to be straightened.

It is equipped with a **mobile arm** that allows the operator to adjust the working position and to be close to the piece to be straightened.

The control panel works with the system of **double buttons** to be pressed simultaneously, so as to force the operator to have **both hands busy**, as required by current European safety standards.



Radio control

The radio control is an **optional replacement** for the control panel mounted on one side of the press.

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 button panel provided as standard.

The radio control always works with the use of **double buttons** to be used simultaneously and **manages all the various movements of the press**.

It 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.



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 valve 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.



Proportional valves of speed and pressure

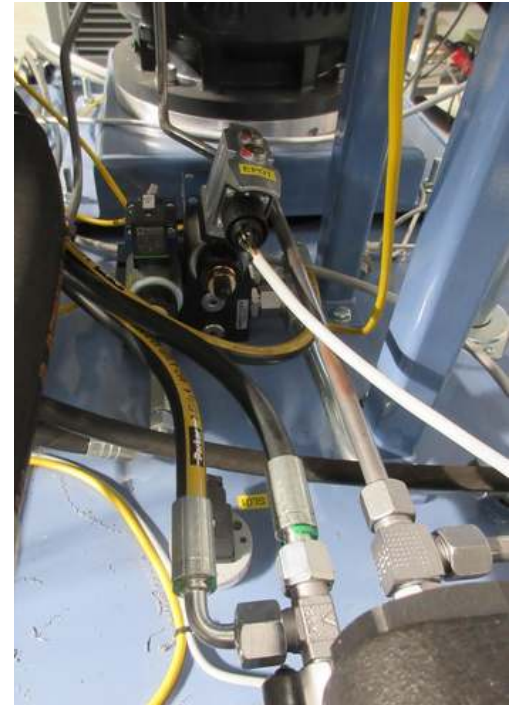
Proportional speed and pressure valves are crucial components in modern hydraulic presses, playing a vital role in **controlling speed and pressure during pressing operations**.

These valves are designed to **regulate the flow** of hydraulic oil in proportion to the system input, allowing for continuous variation in the rate of descent and pressure.

Their importance is evident in various industries, such as metalworking, automotive manufacturing and aerospace. Proportional speed valves allow for **greater precision** in pressing operations, minimizing errors and component wear.

These devices work by sending electronic signals that regulate the flow of oil, providing precise control over the speed of the process.

This results in more efficient production, reduced maintenance costs and improved quality of the final products.



Oversized welds

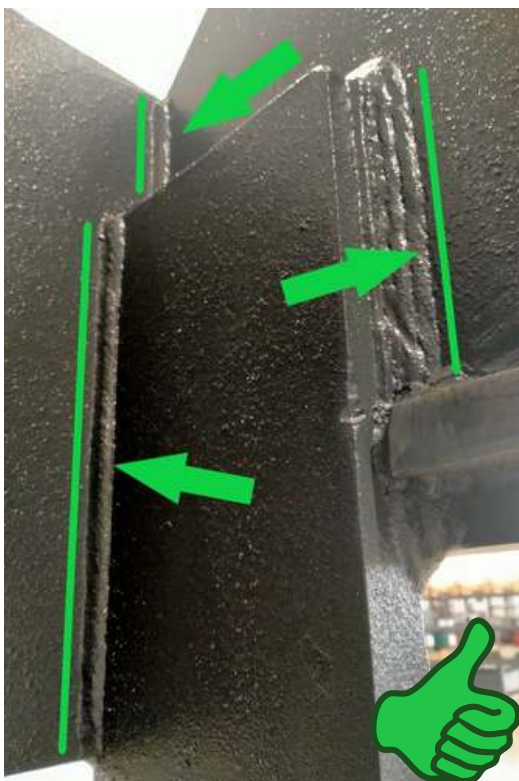
The structures of all the presses produced by **SICMI** are made of **very thick milled steel**, which is **completely welded** along the entire perimeter of the press with **oversized welds**.

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**.

SICMI



European manufacturer



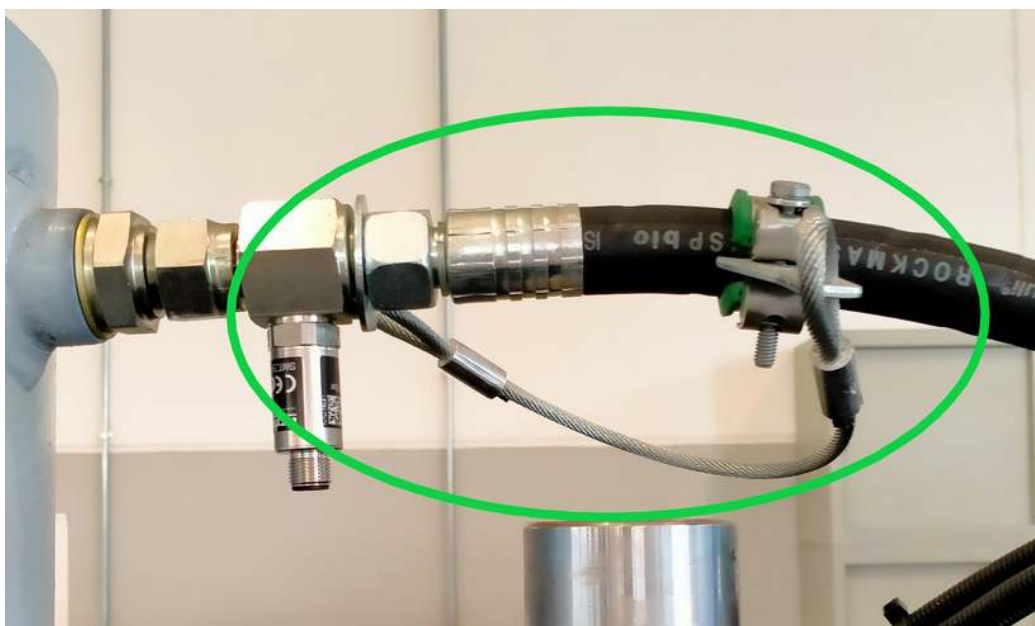
Stopflex anchorage

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.

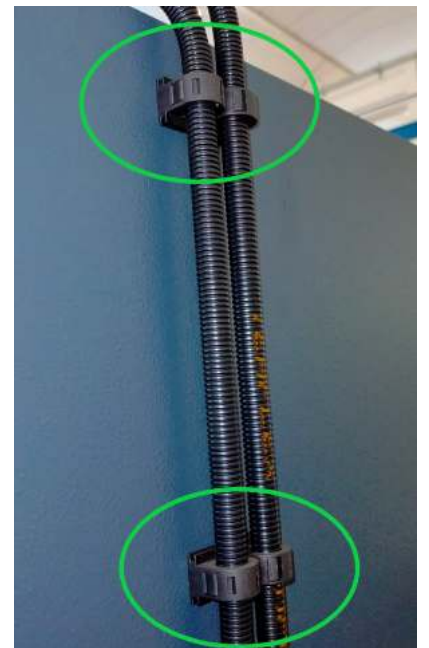
These collars have the **base welded** to the frame, while the upper part is screwed.



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**.



Anti-fall and anti-burst valves

Anti-fall and anti-explosion safety valves are installed on all hydraulic presses that have equipment mounted on the cylinder.

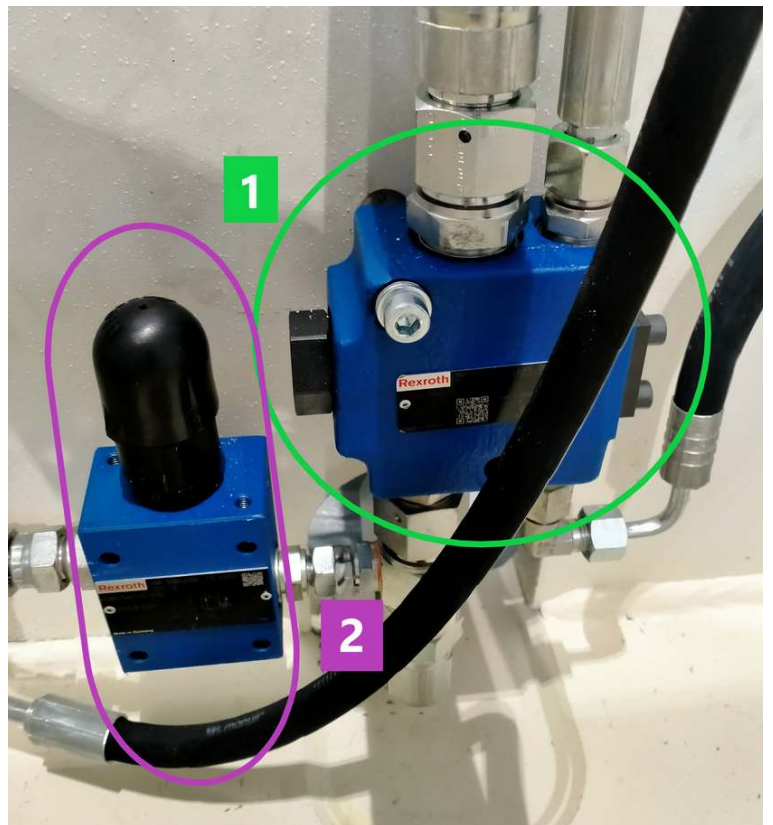
The **anti-fall valve (1)** has the function of maintaining the hydraulic cylinder **under pressure** in the event of a hydraulic hose slipping out.

In this way, **the cylinder**, despite the weight of the upper platform connected to it, would remain still in its position and **would not fall downwards**, thus avoiding injury to the operator.

As an additional form of safety, the **anti-burst valve (2)** is installed, which comes into operation in the event that the anti-fall valve jams.

The function of the anti-burst valve is to **drain the hydraulic oil** from the cylinder if the pressure rises above the permitted limit and therefore **prevents the cylinder from bursting**.

Both valves are from the famous **Rexroth** brand which is recognized globally for its high quality and extremely reliable products.



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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Only the best is enough

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