

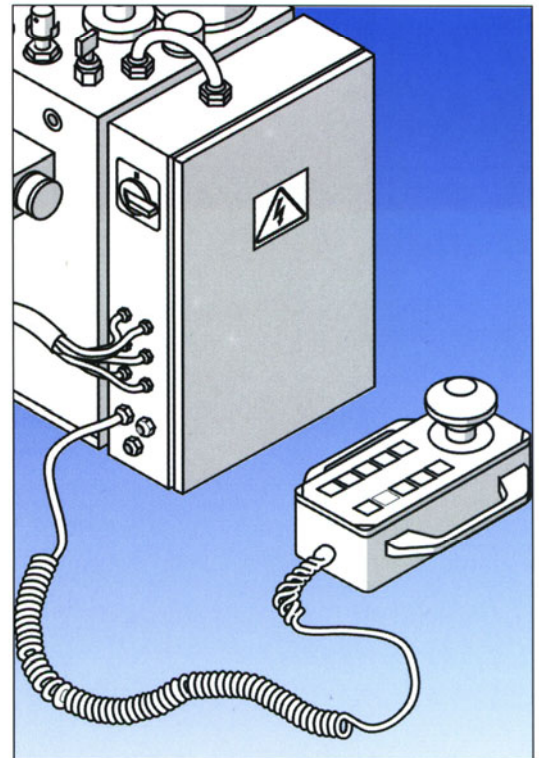
### Field of application

The design of the machine controls on forming presses takes into account even the most exceptional cases, including the fast clamping of forming tools, which will be retrofitted at a later point in time.

Thus, when retrofitting such machines with semi- or fully-automatic tool changing systems, the control functions of the hydraulic unit which are necessary for this may be taken over by separate electrical controls which are specially designed for the clamp units.

### Basic equipment

- design for 2 hydraulic circuits
- components in a sturdy steel plate housing
- terminal box with master switch attached to the unit
- continuous monitoring of hydraulic pressure
- provision for a manual operation panel to be added
- monitoring of the safe minimum working pressures
- interfaces to the machine controls for the following functions:
  - emergency stopping of the machine when pressure falls below the safe minimum working pressure
  - releasing of the machine controls when the nominal clamping pressure is reached
  - electrical cut-out of the manual operation panel while the press is in operation



### Installation

When using the Optima units, the control boxes may be directly fastened to the unit housing.

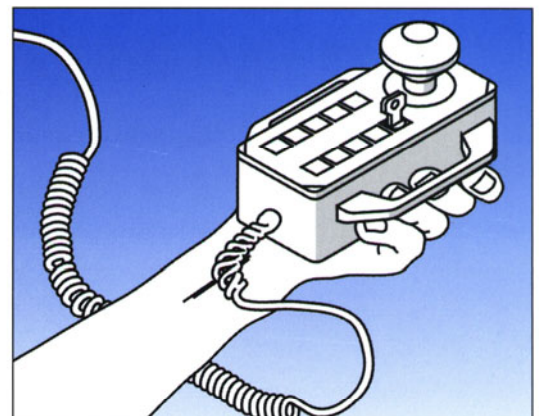
### Field of application

In order to give the machine operator the opportunity to control and check the clamping process in numerous positions, a manual operation panel is provided for the hydraulic unit. At the same time, the user's requirements have been taken into account for a manual operation panel which is as clear and compact as possible, but which contains all important functions.

### Basic equipment

- sturdy housing with mounting rails and plastic handles on the side
- clearly labelled control field
- 1 key switch (manually operated „on/off“)
- 2 light keys for each circuit („clamp“ „unclamp“)
- central fault indicator light and emergency off switch
- coil cable for connection to the control unit, length „extended“ approx. 4 m, „not extended“ approx. 1 m

### Manual Operation Panel



### Installation

The basic version is designed for two clamp circuits. However, it may be expanded by additional clamp circuits and functions.