Retrofit and Upgrade of hydraulic and mechanic Presses

Retrofit, upgrade, refurbushment, modernization. All these terms are in use . But they all mean the same : to redesign and to reconstruct the control of an old press up to the actual state of technology.

Before deciding the question whether to buy a new press or to retrofit the old one the following aspects should be considered :

The basic elements of the old machine e.g. machine body and cylindres are still in a good shape.

Machine operators are familar with the machine handling.

There are lot of tool sets for the press or pressbrake.

But the electrical and/or hydraulical machine control are obsolete and do often not meet the requiremnts of the actual safety instructions. Repair are expensive. Spareparts are rare or even not available any more

By retrofitting the old press yoe will get a press or pressbrake as good as new but much cheaper ! Normally the retrofit costs are only 25-30% of the price for a new machine. And you should also consider that retrofit mearures can increase the machine properties and the capabilty, too :

Increase of Productivity

by reducing the repair times and times off.

Increase of Quality

by better accuracy and better machine handling and programming.

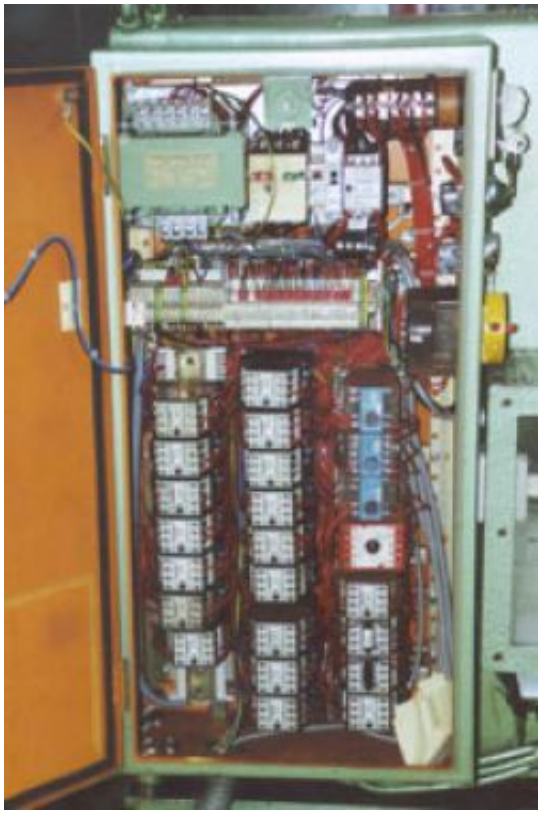
Cutting Repair Costs

by improved spareparts availabilty and cnc-supported failure analysis.

We have about 14 year experience in retrofitting and upgrading old presses. We learnt that in average the costs for retrofitting do not exceed more than 25-30% of the price of a new machine.

Please contact us. We will advise you and will check which special possibilties of retrofitting can be realized at your press/pressbrake.

These photos show a 3000 kN Safan pressbrake in Abu Dhabi (IMAC IMCC). We have installed a new Delem DA69 at this machine and an electrical cabinet with a Pilz PSS plc and linear scales, too. Now the machine conrol is good as new.



Electrical press cabinet in obsolete technique

In many presses or pressbrakes you still find electrical cabinets like this one. They are unsafe and do not meet the actual safety instruction. They consist of harware-logic with relais and switches. This technique is inflexible and often fails. For safety purposes (emergency cicuit, two-hand control, valve control etc.) discrete components are used. Components which of course also very often fail.

Main disadvantages of this relais technique :

Unflexible concerning expandation or modifikation of the electrical circuit.

Components often fail.

Repais costs are relatively high.

Circumstantial service

Safe Presscontrol PSS 3100 (Pilz)

The current european safety instructions require for the electrical circuit and the hydraulic press control as well the safety level 4 resp. SIL 3 to avoid accidents during operating the presses. That means : electrical and hydraulical circuit must have a at least 2 chanel redundancy. If there is a failure in one of the control componets, all movements of the press have to stop immediately, the failure has to be displayed and further critical press movements have to be prevented.

Electrical cabinet in hybrid technics : PSS / S7-300

Press Controls based on modern PLC-Technics

For retrofitting or upgrading hydraulic presses or pressbrakes we always use safe plc controls : PSS controls (Pilz) or S7 31x Failsafe (Siemens). These plc have the required redundancy and they are allowed for controlling presses. All safety functions like emergency control two hand control, operating of the lightcurtain output signals , valve control etc are realized by software moduls.

This SPC technics has a lot of advantages :

Very flexible concerning expandation or moidificatioon of the press control.

Integration of diagnostic softwrae which makes the service very easy. Failures can be displayed at a screeen or text display.

The are no electrical components which can fail, all functions are realized by software

The CPU is safe concerning failures

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Hydraulic Safety Controls

In presses or pressbrakes also the hydraulic cicuit has to be designed and realized with the required redundancy. Normally presses have 2 controlled valves at each cylindre with electrical deflection control.

Well, we retrofit and upgrade your hydraulic press control so that it will meet the requirements of the current safety instructions. Please contact us, we will advise you.

The right hand photos shows an upgraded hydraulic safety control with deflection controlled valves