Machines for Joining • Assembly • Testing

position and force monitored
position and force controlled

ULBRICH

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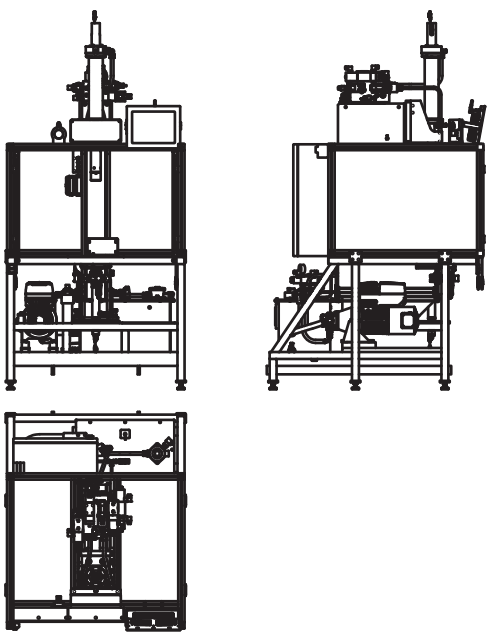
Description / Technical data

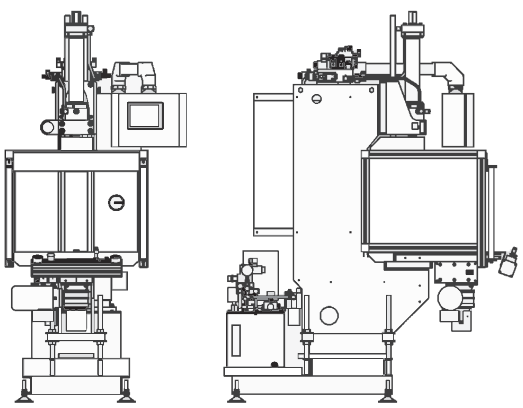
Assembly Presses C50, C80, C125, C500



Nominal Pressing force	50 kN	80 kN	125 kN	500 kN
Force range	2,5 – 50 kN	4 – 80 kN	10 – 125 kN	20 – 500 kN
Stat. force control accuracy from 10% of the Nom. force	0,5 kN	0,5 kN	0,1 kN	0,2 kN
Measuring accuracy in range 10-100% of the measuring range using a pressure sensor (f.a.v*)	< 3%	< 3%	< 3%	< 3%
Measuring accuracy in range 5-100% of the measuring range using force measuring dose (f.a.v*)	< 0,5%	< 0,5%	< 0,5%	< 0,5%
Res. of the force display	0,01 kN	0,01 kN	0,01 kN	0,01 kN
Positioning accuracy	± 0,05 mm	± 0,05 mm	± 0,05 mm	± 0,05 mm
Res. of the measuring system	0,001 mm	0,001 mm	0,001 mm	0,001 mm
Working speed max.	40 mm/s	20 mm/s	20 mm/s	10 mm/s
Working speed min.	2 mm/s	2 mm/s	2 mm/s	2 mm/s
Feed speed	60 mm/s	30 mm/s	30 mm/s	30 mm/s
Reset speed	120 mm/s	60 mm/s	60 mm/s	60 mm/s
Opening width	500 mm	500 mm	500 mm	700 mm
Cylinder stroke	450 mm	450 mm	450 mm	600 mm
Reach	250 mm	250 mm	250 mm	250 mm
Working height ±50mm	925 mm	925 mm	925 mm	925 mm
Width	1300 mm	1300 mm	1300 mm	1300 mm
Depth	1550 mm	1550 mm	1550 mm	1550 mm
Height	2750 mm	2750 mm	2750 mm	3000 mm
Weight	1100 kg	1100 kg	1300 kg	1600 kg
Pressing table	500x500 mm	500x500 mm	500x500 mm	500x500 mm
Network and remote maintenance capability	✔	✔	✔	✔

* from actual value

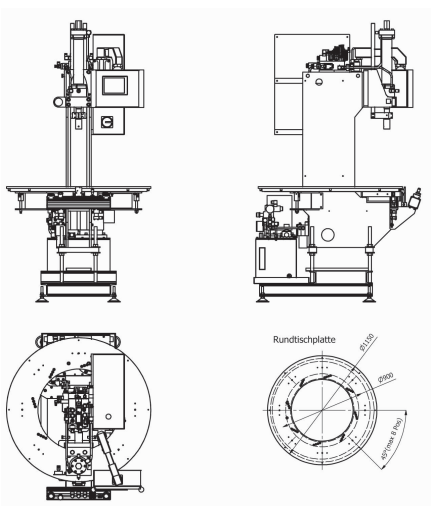
Presses with inside rotary table



Example: C80 Press with	Inside rotary table	Outside rotary table
Table diameter	600 mm	1150 mm
Pitch circle diameter for press position	390 mm	900 mm
Drive	automated	manual/automated
Angular speed	1,6 s for 90°	

Ierrors and techn. changes remain reserved

Presses with outside rotary table



Mechanics
Table plate with T-Slots or customised mechanical interface assembly
Optional:
Special frame for adapting to reach and opening widths

Safety technology
Enclosure with light grid protection
"Safeballs" or two-handed operation

Options
Rotary table variations as part or tool transport
Slide table variations as part or tool transport
Signal lamp
Potential-free i/o interface for in and output such as 24VDC/3A power supply to control / read out the sub-system.
Integrated ejector and tension cylinder in the press table
Individual table plate
Increased infeed rate

Assembly presses
C50, C80, C125, C500
Features and characteristics

Special
ULBRICH
Presscylinder

Integrated
Position sensor

Non-rotating
Pistonrod

Force measurement
using a pressure
transducer or force
transducer

Enclosure and light
grid protection *

Joystick for one-hand
operation and "Teach in"
function

Control block with
proportional pressure
and directional valves

Energy optimized control,
for example:
"Hydraulics off" after 3 mins

Drive controlled via a low-
noise frequency controlled,
vibration-dampened housed
pump/motor combination

Power pack with contamination,
level and temperature monitoring.
Error messages on screen

***Occupational Health and Safety**

For single and multi-sided access of more than 650 mm, a light grid fuse is mandatory

For single-side access of less than 650 mm, a two-hand protection is permitted

Only for speeds up to max. 10 mm / sec no additional protective measures are required

Options:

Table optional with ejector cylinder

T-Slots for tool acceptance according to DIN 650

Interface for additional tools

Further options upon request

ULBRICH

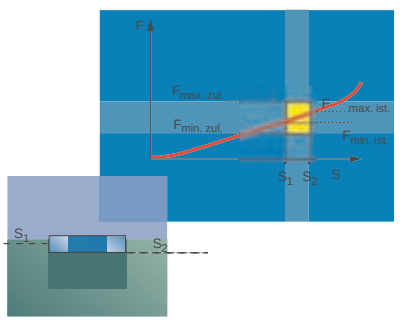
Assembly press with inside rotary table

• Position and force monitored
Positions and forces are measured, monitored and evaluated according to the programmed criteria.

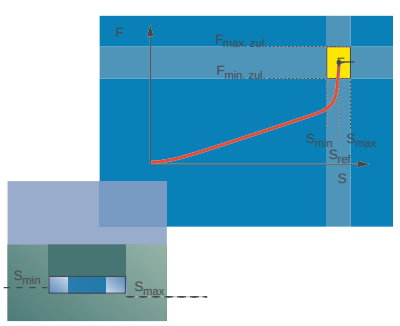
• Position and force regulated
In addition, the "intelligent" Ulbrich joining machines are able to precisely approach preselected positions and apply selected forces in a controlled manner.

Typical examples of a variety of programmable monitoring windows

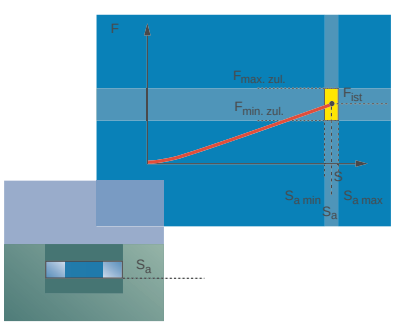
Press force-through-flow window



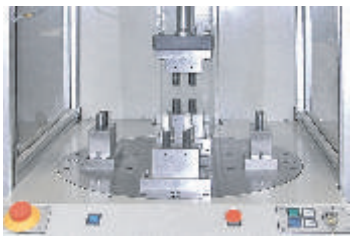
Position monitoring with pressing with end force on “Block”

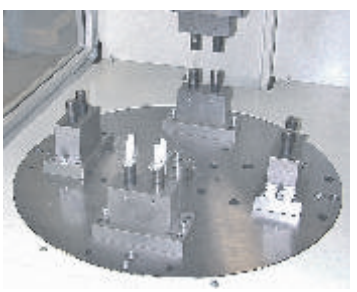


Force and position monitoring-with pressing into position



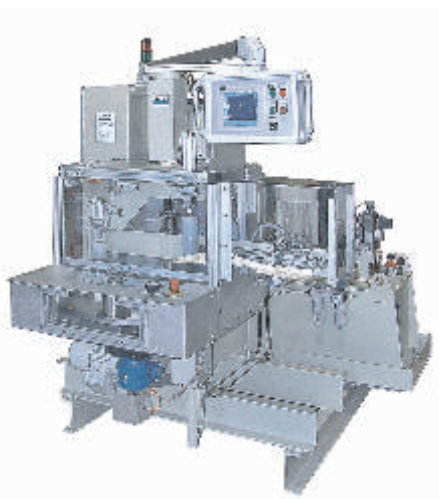
Design example





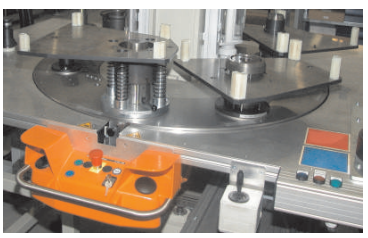
Main area application:
With rotary table (inside) the table is rotated with the work piece, where the stations are designed as either only as a “magazine” or as an additional work station for insertion, pre-pressing, ejection. However, it can of course also be used as a tool carrier.

Press design example



Assembly press with outside rotary table

Design example



Main area of application:

With outside rotary table the arrangement of various tools is performed according to the various subsequent steps or applications.

Process integrated quality control

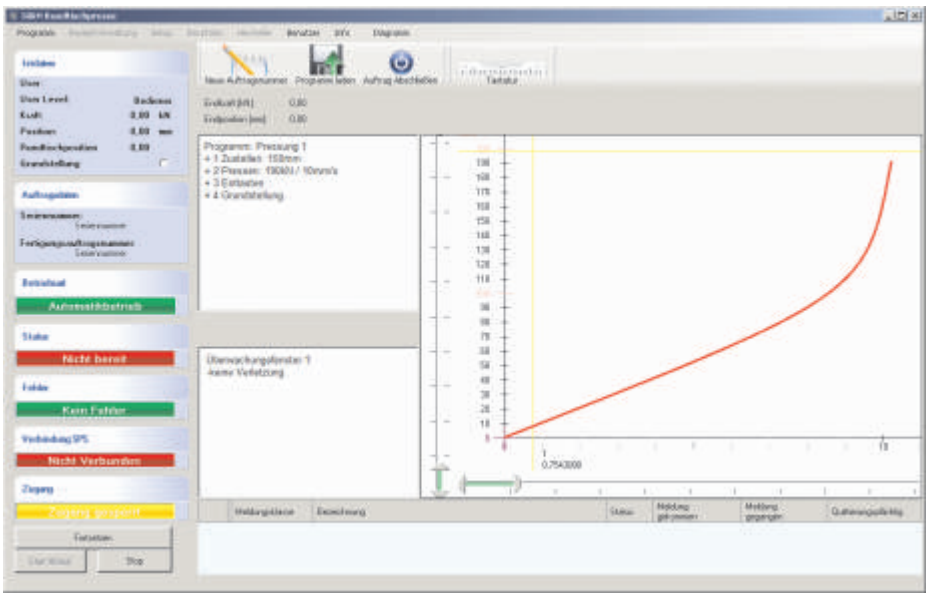
The Ulbrich software enables the customer to document production processes in the press without gaps. A Siemens S7/300 or S7/1500 control system is used as the machine-side control system. The pressing visualization, which is executable on an industrial PC with a current Windows operating system (Win 7, Win 8.1 and Win 10), has been developed by Ulbrich themselves.

The use of up-to-date ".net technology" makes it possible to flexibly respond to requests and customized expansions.

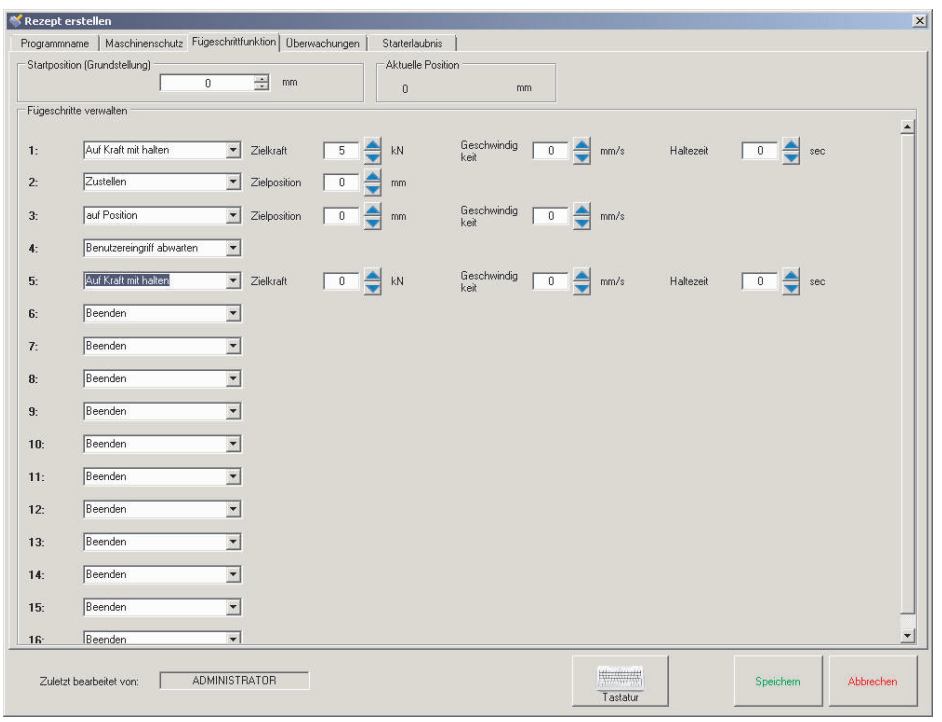
Visualization

The Ulbrich press visualization offers the operator a quick overview of the current status of the press and the compression.

For this purpose, the most important data is visualized in colour. Error, notifications and information is read out in its own message window in plain text. All relevant data are permanently displayed on the visualization.



The current program step is likewise displayed, as well as the status of the monitoring window.
The force/path diagram, displayed in real time, allows the operator to have a graphical impression of the pressing process. Depending on user level, all other functions of the press are configured. A fast program selection as well as easy input of the required order data are the main focus.



Assembly steps

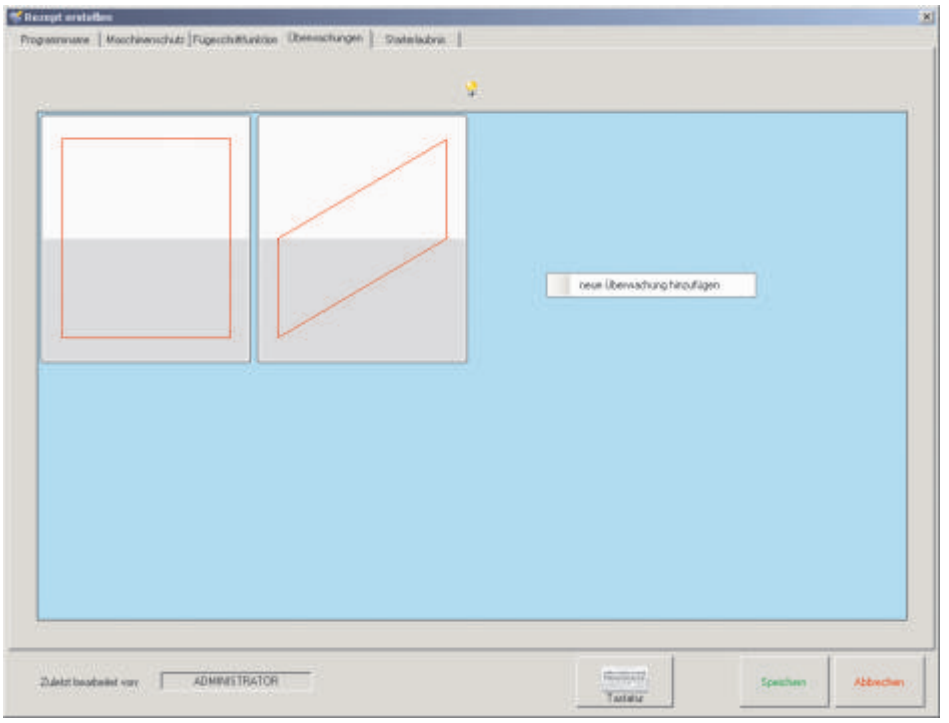
The movement and pressing processes required for the machining of a wide range of workpieces can be arranged in numerous ways as required.
Up to 16 commands can be linked, whereby only the relevant data relevant for the respective command must be entered. The available commands range from a motor where the target force as well as the pressing speed is defined by commands for pressing to a target position, targeted user intervention as well as the linking of external inputs and outputs.

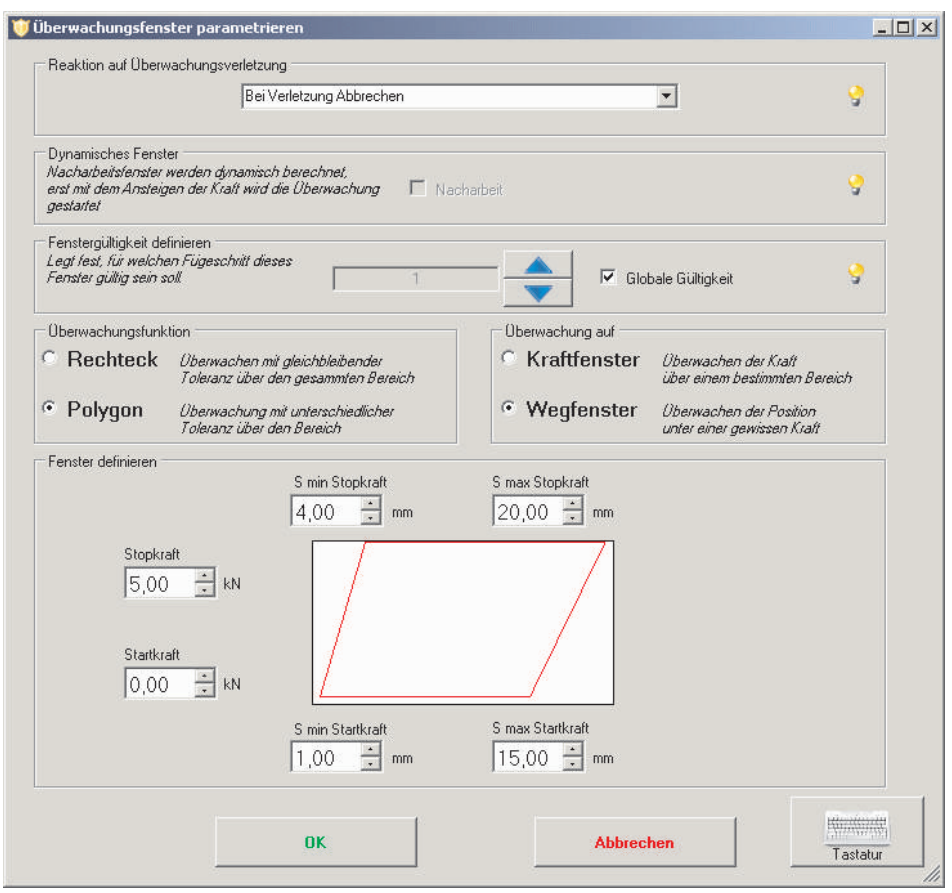
In addition to the sequence, program dependent parameters which are also superordinate, such as maximum force or minimum position etc., are also defined. Limit values can also be set for the individual commands, which allow the monitoring of the individual steps. The input mask is also easy and intuitive to operate on a touchpanel. All programs are stored in the .xml format on the hard disk.

Monitoring window

In order to be able to document and monitor the pressing process appropriately, monitoring windows are defined during program creation.

In this case, either the force is evaluated at a specific point, for example, shortly before reaching the end position or the position when the end force is reached. Furthermore, windows can also be defined which monitor the force profile during the pressing. The defined monitoring functions are applied and administered in a clear selection screen.





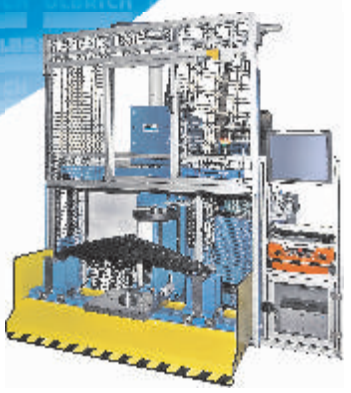
Parameter monitoring window

The entering of the required parameters of the monitoring windows is done via a graphical input screen.

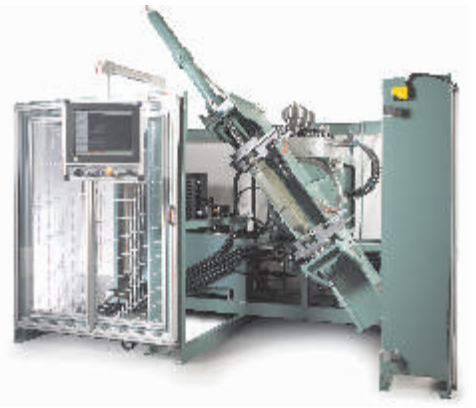
With this, the window type as well as the reaction to a possible violation of the monitoring window can be determined. Assignment the monitoring windows to the pressing steps allows the monitoring of multi-phase pressing operations. In a window violation, the target and actual values are displayed and stored in the log file for pressing. Dependent on the defined reaction, the press can also be shut-down in a window violation. In this case, the release is carried out by authorized personnel.

User **administration** is also part of the standard in the Ulbrich press visualization as well as the possibility to have machine parameters, e.g.: calibration of the force measuring system on the press changed by authorized personnel. Functions for operating the press in manual mode as well as via a diagnostics screen complete the functional scope.

Puffer Testing Machine



Spring Testing Machine



Shock Absorber Testing Machine

Machines for testing assembling & joining

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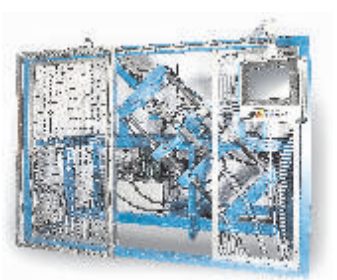

Spring and Shock Absorber Testing Machine

Chockblock Testing Machine

Central Coupler Testing Machine

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