

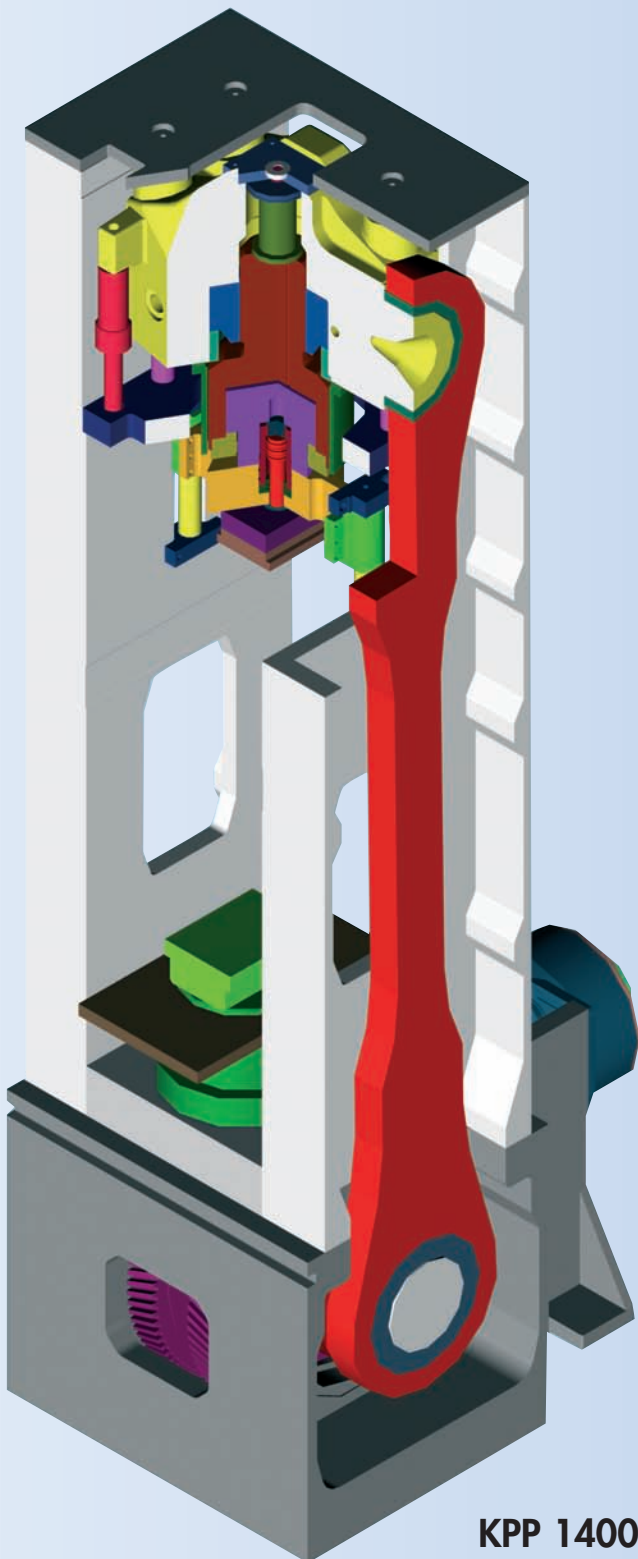


**Mechanical-Hydraulic Powder Presses
Type KPP**

Mechanical-Hydraulic Powder Presses Type KPP

The KPP series has been developed to combine the productivity and energy efficiency of a mechanical press with the flexibility and the capabilities of a hydraulic press.

Base frame, upper part of the press as well as press frame are made of spheroidal graphite iron and thus guarantee maximum stability.



KPP 1400

The presses operate in the withdrawal principle. The top ram is driven mechanically by a double eccentric shaft via connecting rods. All other axes including die, top punch hold down device, filling shoe, core rod and additional axes, are closed loop controlled CNC-axes and hydraulically driven.

Unlike on conventional mechanical presses the frame is not exposed to tensile loadings during compaction. The integrated high-precision guides ensure highest geometry accuracy and thereby an optimum guide of the top ram.

Gearbox

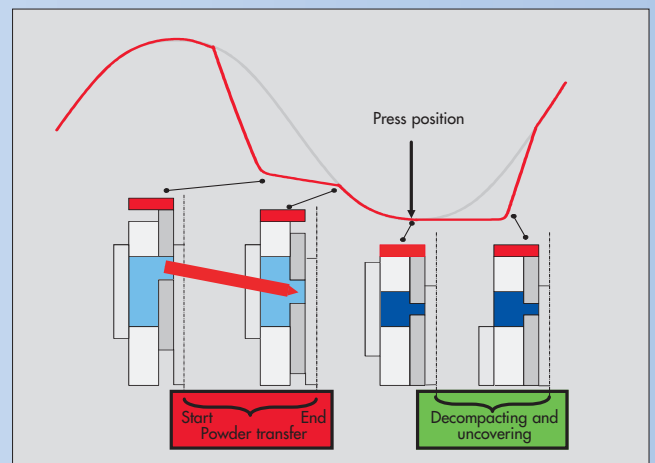
The double eccentric shaft is driven via a variable asynchronous motor. The motor accelerates the flywheel through a toothed belt. A combined hydraulic clutch brake unit with slip-monitoring provides a perfect drive, accurate gear changing times as well as a highly reliable and safe brake-function. The complete drive unit is located in the base frame of the press.

Hydraulic Power Unit

The hydraulic axes are driven by a state-of-the-art hydraulic accumulator system. The manifold blocks are mounted as near as possible to the cylinders.

Multifunctional Top Punch Hold Down

Freely programmable



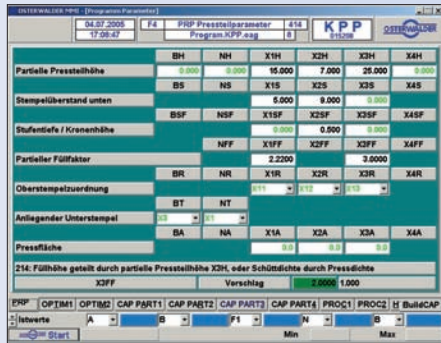
The closed loop controlled hold down device fulfills the following functions:

After the filling process the tooling is closed by running down the top ram and lowering the top punch hold down at the same time. Subsequently the powder transfer is performed via top punch hold down device and the axes of the multiplaten die-set. This sequence corresponds to that of a fully hydraulic press. It can be executed with or without precompaction.

After the top ram has reached the press position, the top punch hold down is activated. The demoulding process can be executed relating to force or to position.

Easy Programming and Operation

The three programming levels PRP, CAP and FRP ensure easy and fast programming. The parameters entered into the PRP and CAP levels are used to calculate a complete press sequence, which is displayed in the FRP. The press sequence can be optimized on all three levels.



PRP

(Part Related Programming)

The part dimensions are directly entered in PRP.



CAP

(Computer Assisted Programming)

Process parameters are defined on CAP level. Integrated optimization programs assist the operator in bringing the part to size and density after a few strokes.



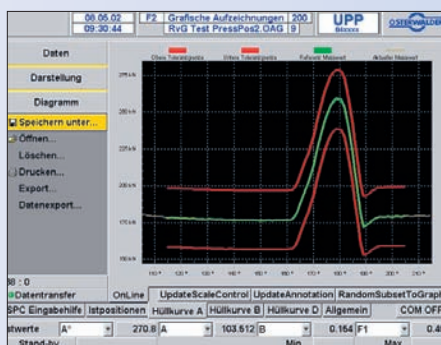
FRP

(Free Programming)

In free programming almost any movement can be programmed with the highest level of safety for the tools and the press.

Production- and Quality Monitoring

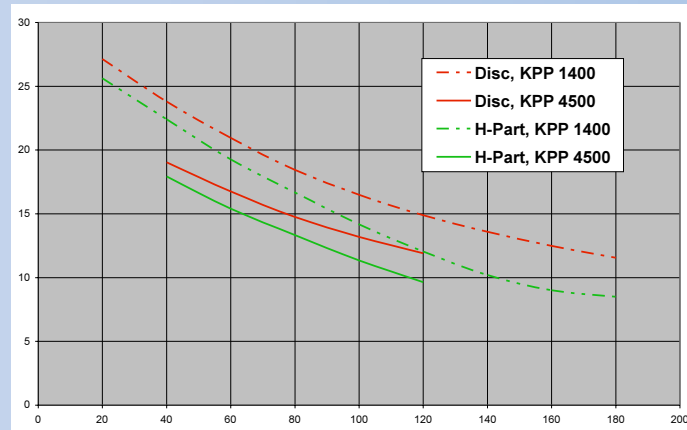
A continuous force- and position monitoring of all axes guarantees maximal process security. The visualisation is numerical or graphical.



- Dynamic force measurement
- Tool protection
- Force monitoring
- Oscilloscope
- SPC (Statistic Process Control)
- Internal or external data storage

Productivity

Compaction trials have proven that the presses of the KPP series do not only feature highest productivity but also exceptional part quality. The Osterwalder angle-/time management optimizes the timing sequence and allows maximum filling time.



Energy Efficiency

The extremely low energy consumption of the KPP-presses cannot be met by any fully hydraulic system.

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Quality

- Positioning accuracy $\pm 0,01$ mm
- Repetition accuracy $\pm 0,01$ mm

Productivity

- High stroke rates due to mechanical main drive

Energy Consumption

- The hybrid drive concept results in minimal energy consumption

Key Features

- Three-level programming (PRP, CAP and FRP)
- Powder transfer with closed loop top punch hold down
- Compensation of punch deflection
- Automatic filling height correction
- Contour filling
- High reliability

Press series		KPP 630	KPP 1400	KPP 2500	KPP 4500
Forces					
Pressing force top ram max. (m)	kN	630	1400	2500	4500
Withdrawal force max. (die) (h)	kN	400	1050	2000	2600
Counter force in press position max. (die) (h)	kN	400	1300	2000	2900
Force lower core rod up/down	kN	35/15	65/40	65/40	65/40
Force top punch hold down in pressing direction	kN	70	95	125	450
Strokes					
Stroke top ram (m)	mm	200	218	218	218
Compact height adjustment (h)	mm	80	80	80	80
Filling height	mm	180	180	180	120
Stroke die	mm	180	180	180	120
Stroke lower core rod (h)	mm	150	150	150	150
Stroke filling shoe (h)	mm	320	320	320	320
Stroke top punch hold down (h)	mm	100	100	100	100
Positioning accuracy					
Minimum programmable increment	mm	0,001	0,001	0,001	0,001
Repetition accuracy	mm	± 0,01	± 0,01	± 0,01	± 0,01
Positioning accuracy filling shoe	mm	< 0,1	< 0,1	< 0,1	< 0,1
General information					
Stroke rate	H/min	6-35	6-30	5-22	5-18
Electric power (without additional axes)	kW	43	64,5	97,5	152,5
Opening for die-set	mm	Depending on the number of pressing levels			
Total height	mm	Depending on the height of the multiplaten die-set			
Total weight (incl. multiplaten die-set)	kg	11 000	27 000	42 000	70 000

Remarks: h = hydraulic, m = mechanical

Dimensions, technical data and design are subject to change

The Osterwalder product range:

- Hydraulic powder presses of the CA-NC II series with a pressing force of 120 up to 1200 kN
- Hydraulic powder presses of the UPP series with a pressing force of 1400 kN up to 10 000 kN

Our service program offers:

- Engineering
- Application consulting
- Commissioning
- Training
- After-sales service
- Inspections

Together we will reach your goal!

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