HYDAC INTERNATIONAL

Components, Systems and Service for Presses and Forming Machines

EN 10.135.2/09.25

Components, Systems and Service for Presses and Forming Machines

Whether it's hydraulics, cooling, lubrication or other auxiliary functions for presses – hydraulic as well as mechanical: as a reliable and innovative partner, HYDAC tackles a wide range of tasks for presses and forming machines worldwide.

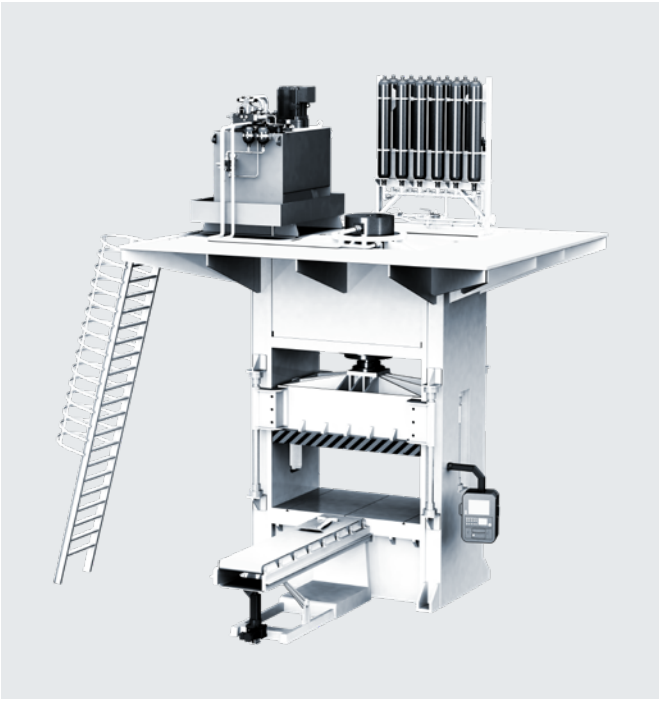
Your partner for expertise in all kinds of machine types in press and forming technology.

Mechanical presses

(Servo-)mechanical presses (stroke-controlled machines) are categorised as cam, spindle, eccentric or knuckle-joint drives, or servo presses.

The challenges with this type of press are the high safety and digitalisation requirements that need to be fulfilled, which HYDAC meets with press safety valves and compact control units, hydraulic overload protection, die cushions, cooling strategies and smart sensors, for example.

Hydraulic presses



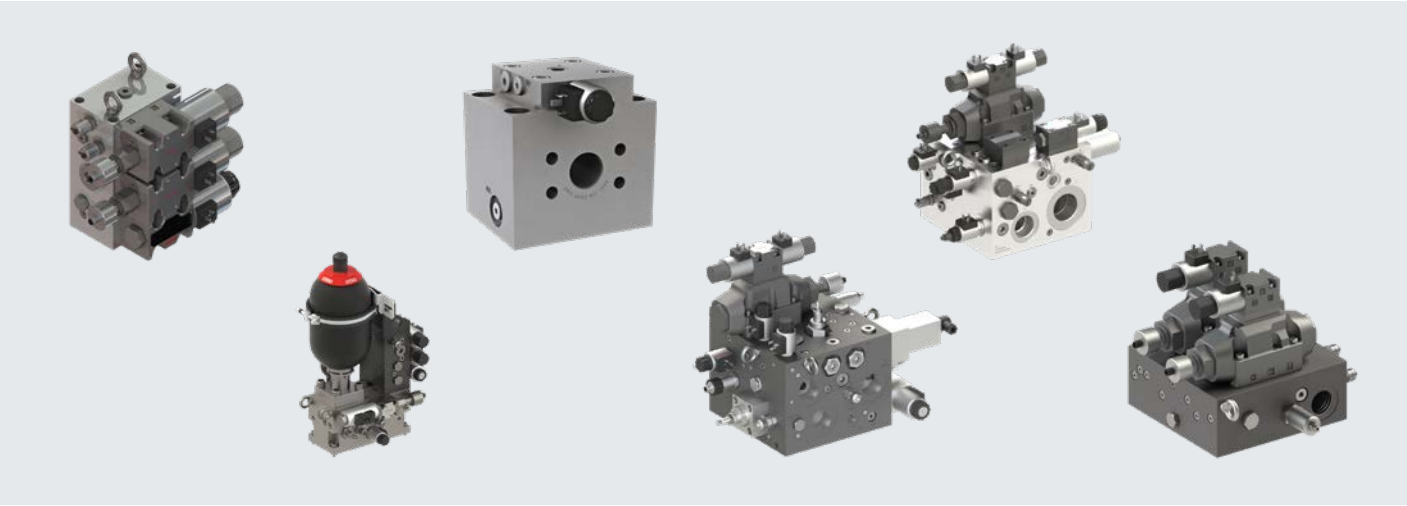
In hydraulic presses (force-controlled forming machines), the required force of the press stroke can be set by adjusting the oil feed to the pressure cylinder.

The advantage of this type of press is the variable nominal press force – the challenge, on the other hand, is that they are often not sustainable enough.

HYDAC solves these problems by optimising the installation space or increasing the energy efficiency of the drive concept, for example. The latest valve technology also ensures that the strictest safety standards in accordance with DIN EN 16092-3 are met.

Retrofitting presses and forming machines

For existing presses and forming machines, a retrofit can be a cost-effective alternative to a new purchase.
HYDAC assists with the retrofit by replacing obsolete components in accordance with DIN ISO 16092.
Get in touch with us – we'll develop a custom solution for you!



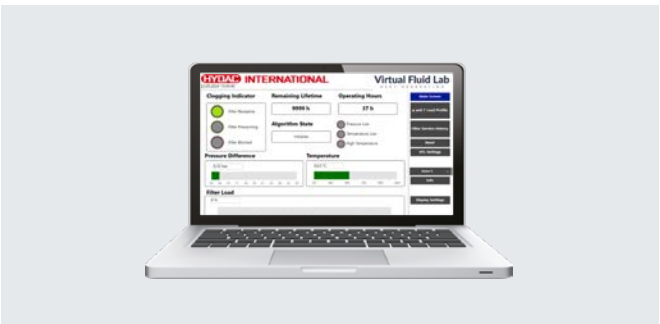
Optimising presses

Tank optimisation with Air-X and the Tank Reduction Unit TRU

We see potential for optimising and reducing the tank size in every existing tank system. Work with us to reduce your CO_2 footprint and the associated costs.

Digitalising forming machines

Transparency in presses is important to us. We monitor your machine with products for measuring pressure, temperature, linear position, position, level, flow rate, speed, contamination and oil condition.



Oil analysis via the HYDAC Fluid Care Portal

Oil samples are important for measuring oil parameters that cannot be adequately determined using online measurement technology. However, what is even more important are the interpretations of these measured values, and the actions derived from them. HYDAC is happy to share its decades of experience in the industry with you.

Mechanical presses

Functional safety

Press safety valve PSV

- The hydraulic control system complies with the requirements set out in DIN EN ISO 16092-2
- Optional integrated hydraulic accumulator
- EC-type examination
- Simple and robust control system design
- Requires minimal space, piping and maintenance
- Fast switch-on / switch-off times
- Use of standard components

Progressive compact control unit KS

- Smooth engagement and release of the clutch
- With built-in press safety valve PSV in accordance with DIN EN ISO 16092-2
- Fast switch-off / switch-on times for emergency stops
- With built-in hydraulic accumulator and mount

Hydraulic overload protection ULSV

- Rapid relief of pressure points
- Various ratios can be selected
- Optional electro-hydraulic switch-off
- Optional fast-switching electronics
- Compact design

Actuators

High-pressure (low-pressure) die cushion axes

- Available as a high-pressure or high-pressure / low-pressure version for efficient pressure supply
- Die cushion force from 800 kN to 1,750 kN or custom design

HEZ electric cylinders

- Simple implementation of linear movements
- Maximum force range up to 500 kN
- Speeds up to 2 m/s
- Controlled functions can be implemented with a drive controller

Efficiency

Fluid-water cooling systems for servomotors

Energy-efficient intermediate circuit for direct cooling of the drives with the available cold water to prevent contamination and corrosion in the coolant circuits, which can be caused by direct cooling with poor water quality.

- Energy-efficient and low-noise
- No heat input into the machine building
- Saves resources by controlling the amount of cold water
- Waste heat can be used

Power unit cooling

With fluid-air or compressor cooling systems: fluid cooling independent of a cold water supply.

- Energy-efficient passive cooling systems for cooling using the ambient air
- Compact chillers for coolant temperatures below the ambient temperature

Pressure and lubrication oil supply

Hydraulic power units for clutches and brakes

- Choice of constant pressure supply or energy-efficient, variable-speed drive
- Optional press safety valve or compact control unit with additional convenient functions built into the power unit

Compact power units for hydraulic overload protection

- For fast filling and precise pressure retention at the mechanical press pressure point
- Reduction in waiting times after the overload is triggered with optional pre-fill pumps or variable-speed drive
- Many custom solutions are possible – get in touch with us!

Compact lubrication unit HYLU

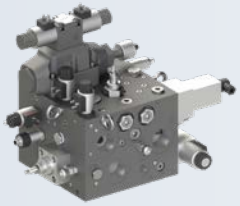
- No design work
- Cost optimisation thanks to a modular system for lubrication oil applications with low flow rates
- Short delivery time due to stock-keeping

Hydraulic presses

Functional safety

Variable-speed drive solution KineSys DVA-Kit

- Speed-controlled constant pressure supply
- “Piggyback” drive controller → no control cabinet installation necessary
- Safe Torque Off (STO) safety function can be integrated
- Fieldbus connection possible
- Up to 22 kW



Press control block PSB(H)

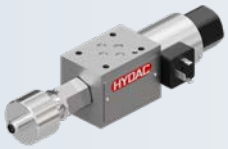
- Upper press ram control up to 315 bar
- Max. flow rate 1,000 l/min
- Many auxiliary functions integrated into the block – without additional valve technology: e.g. control of a filling valve, Sitema holding brake, ejector, clamping functions or an accumulator for supplying additional auxiliary functions
- Complies with DIN EN ISO 16092-3 and PLe according to DIN EN ISO 13849

Die cushion block ZSB(H)

- For die cushion systems up to 300 l/min and 315 bar
- Safe movement of the die cushion in both motion directions
- Hybrid block design: requires minimal space, piping and maintenance

Retrofit Block PSN(H)

- For existing connections up to 315 bar and a flow rate of up to 600 l/min
- Existing press hydraulics can be brought to the current state of DIN EN ISO 16092-3
- Changes to the existing hydraulic operation are usually not necessary, which reduces machine downtime



Switch position-monitored valves

- Valves for switch status monitoring in a system to comply with the safety principles set out in DIN EN ISO 13649-2
- Direct-acting, solenoid operated directional valve
- A coil that can be rotated by 360° enables flexible installation

Efficiency

Power unit cooling

Fluid cooling independent of a cold water supply. Prerequisite: the temperature requirements and the ambient temperature must be compatible with the fluid cooling system.

Compact hydraulic oil cooling with an air cooler or plate heat exchanger

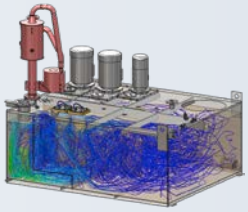
Our cooling solutions ensure that hydraulic oil is cooled efficiently. This prevents oil degradation, maintains a uniform viscosity and extends the service life of the filters. The result: greater operational reliability and lower maintenance costs.

- Various standard series and sizes
- Also for bypass flow cooling and filtration
- Decentralised, compact and cost-effective compact unit

Hydraulic accumulator (stations)

- Fully piped and ready for operation
- With all the necessary valve controls, fittings and safety devices

Simulation technology



- Feasibility studies: testing new ideas and press drives at a very early stage in development
- Drive design: which drive concept is suitable for my application? This question isn't always easy to answer. However, we can help you find it.
- Optimising drives and machine functions: calculation models for simulating drive behaviour that take external influencing factors into account

Actuators

Hydraulic cylinders

- Your partner for the development and production of custom hydraulic cylinders up to 12 m stroke and 1,000 mm diameter
- Precise requirements for service life, corrosion resistance, installation space, weight optimisation and temperature
- Many special solutions are possible for functional integration

HEZ electric cylinders

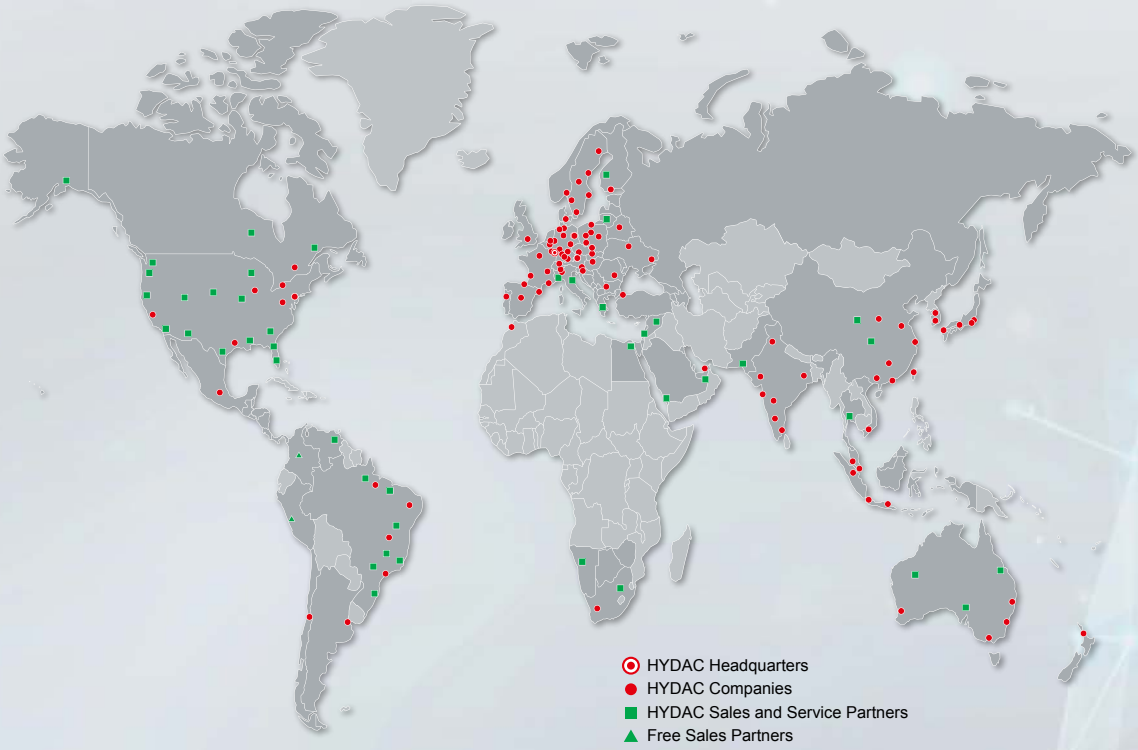
- Simple implementation of linear movements
- No hydraulics required – ideal if only one main axis is needed without any other secondary functions
- Force range up to 500 kN
- Speeds up to 2 m/s
- Controlled functions can be implemented with a drive controller

HYDAC is your development partner

With over 60 years of expertise in the fields of fluid technology, hydraulics and electronics and impressive innovative strength, we devote our energy to the technologies of the future.

Around 10,000 employees, 50 HYDAC subsidiaries and more than 500 sales and service partners ensure that HYDAC is on hand to help you as a reliable partner worldwide. Our product range extends from components and subsystems right up to complex drive units with closed-loop control for mobile and industrial systems. We also offer our customers a large range of technical services relating to HYDAC fluid engineering for hydraulic oil, lubricants, coolants and water.

Trust in our global network of experts and our top quality standards.



HYDAC INTERNATIONAL

HYDAC INTERNATIONAL GMBH

Industriegebiet
66280 Sulzbach/Saar
Germany

Tel.: +49 6897 509-01

E-mail: pressen@hydac.com
Internet: www.hydac.com

Note
The information in this brochure relates to the operating conditions and applications described. For applications and / or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

EN 10.135.2/09.25