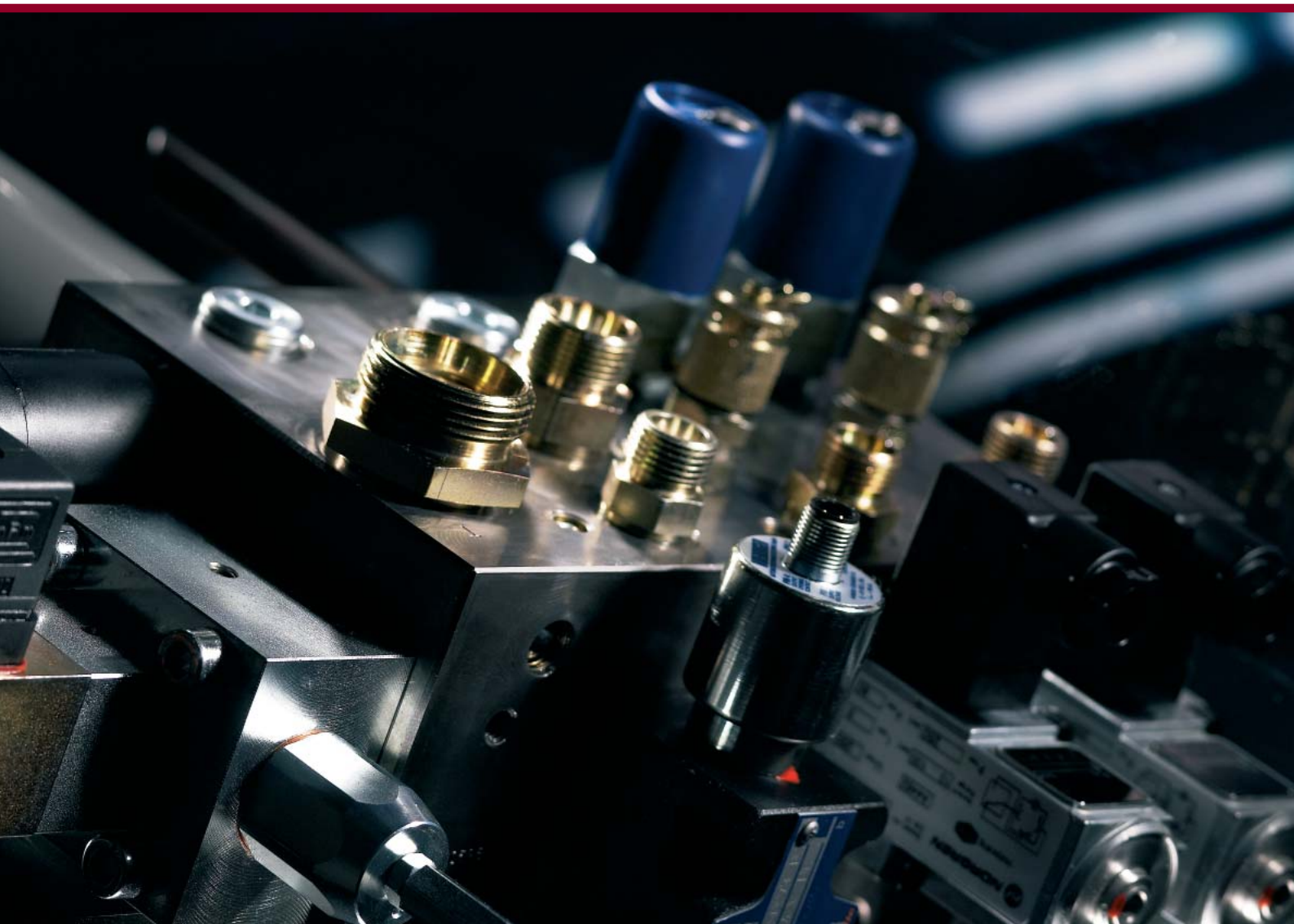


Hydraulic Systems for CNC-Pressbrakes

...safe, precise, dynamic


HOERBIGER
because performance counts

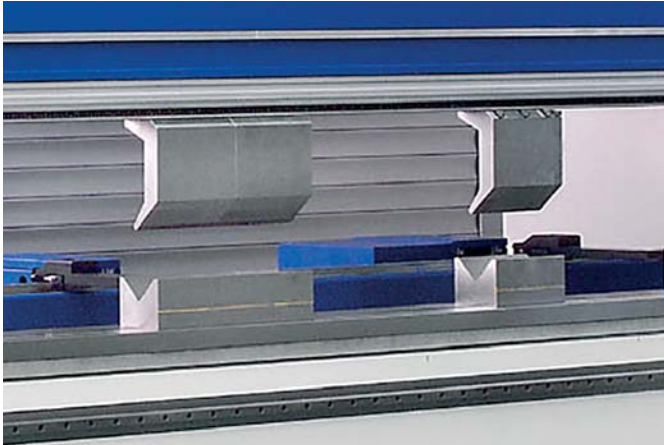




Metal forming processes in modern CNC pressbrakes call for high levels of precision and productivity combined with absolute working reliability. This is the challenge our development engineers and technicians repeatedly face – and they develop solutions for our customers in cooperation on a partnership basis; profitable innovation is one characteristic of these solutions.



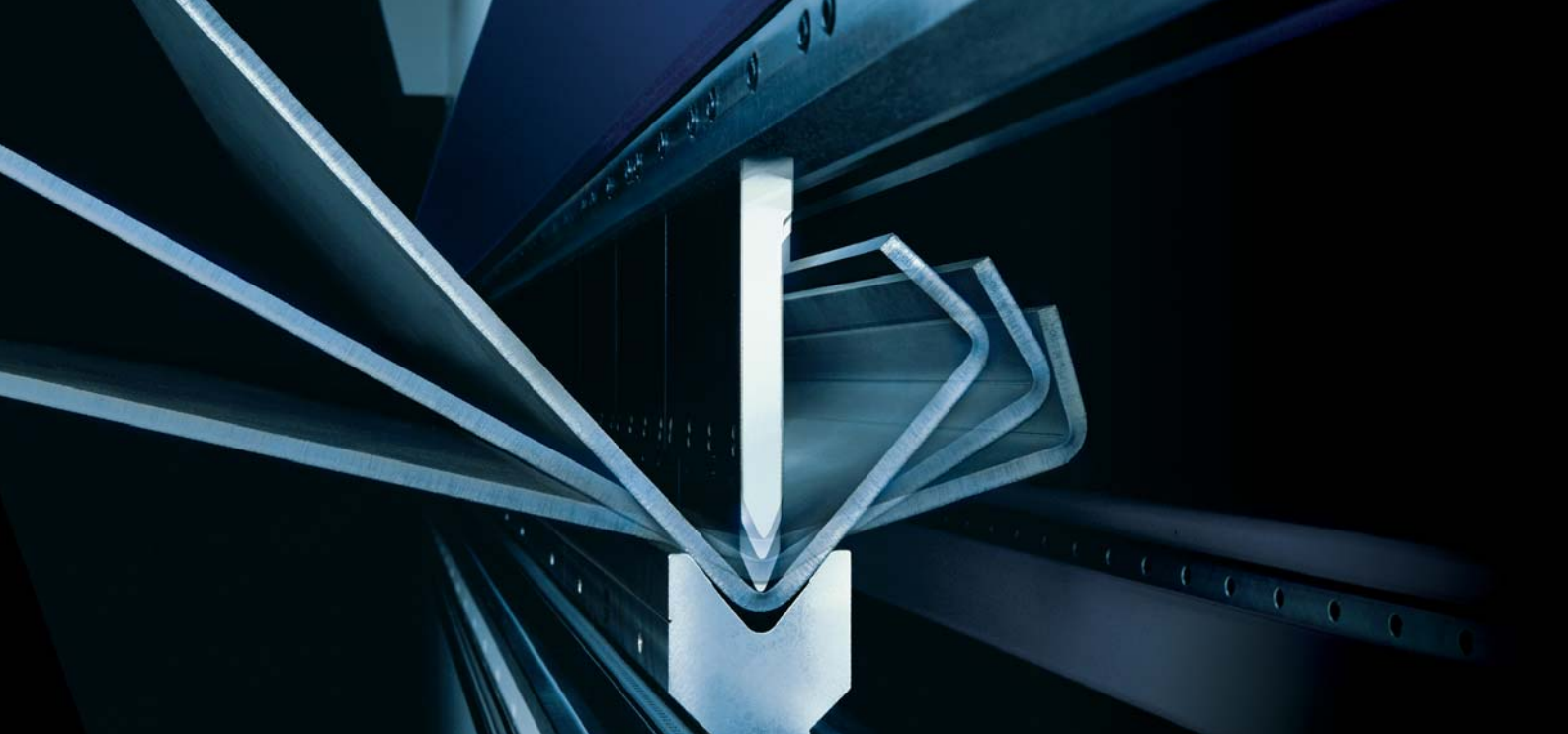
Our entire range of products features a high level of system compatibility. 30 years of greatly varied experience gained from more than 50,000 CNC pressbrakes equipped with HOERBIGER technology worldwide underlines the perfection and reliability of HOERBIGER hydraulic systems – from the pump to the cylinder.



All the processes and measures to ensure consistent high quality are oriented to the realistic operating conditions on the customer's premises. We have state-of-the-art equipment for this purpose; both in the development phase and in series production. And our employees also guarantee efficient and streamlined quality processes due to their commitment in design and implementation.

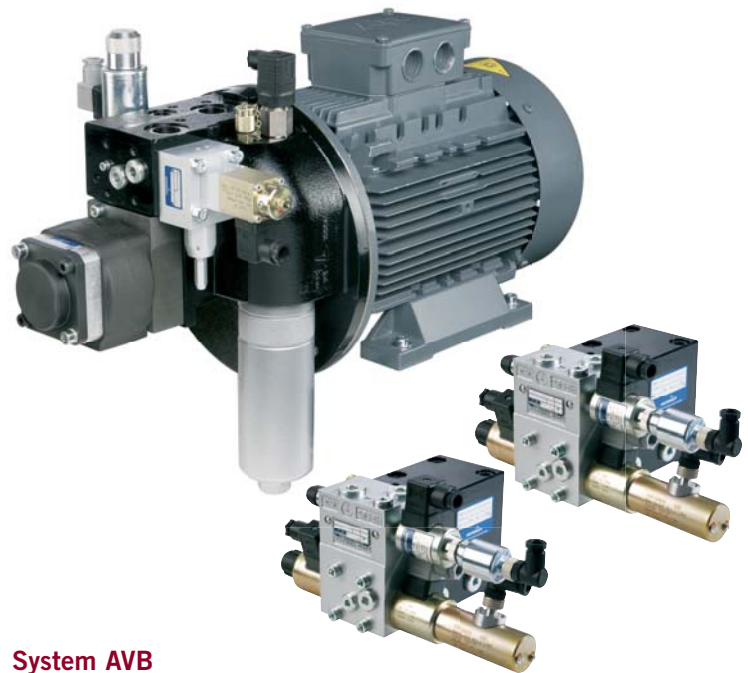
Residues and contaminants in hydraulic systems cause abrasion and functional problems. Our production facilities systematically rule this out: all the components from valve spools to cylinder housings pass through tailored cleaning systems which also reliably eliminate residues in complex components using programs aligned to the respective requirements. Sophisticated filter systems are the final guarantee and provide supplemental assurance of highest quality standards in the final hydraulic testing.





System PVM

- The combination of an integrated press valve IPV per cylinder and the power module PLM creates the extremely compact PVM central hydraulic system solution.
- Power module PLM with integrated high-pressure internal gear pump
- The suction valves are located in the cylinder bottom.



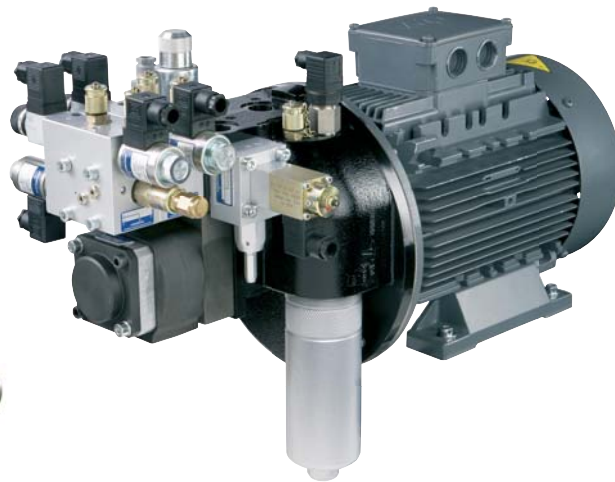
System AVB

- The cylinder block with integrated suction valve is completed by the integrated press valve IPV.
- Individual combination of the modules:
Cylinder block including suction valve optionally with:
 - power module PLM with integrated high-pressure internal gear
 - pump block APB
- Two different nominal sizes permit optimum adaption to machine capacity.

All the hydraulic controls meet the UVV guidelines and are certified by the professional organization.

When accurate positioning counts...

HOERBIGER modular systems for CNC-Pressbrakes



System IPA

- The integrated press actuator IPA represents an ideal combination of press cylinder and hydraulic controls. There are 5 sizes available from 500 kN to 1,700 kN pressing force.
- All the hydraulic valves and sensors required for control and high retaining are integrated in the one-piece cylinder housing.
- This system is supplemented by the power module PLM. High-pressure internal gear pump, hydraulic oil filtering with electrical contamination gauge, proportional pressure control and suction valve control are all combined in this extremely compact unit.





Progress by Innovation

Unique, profitable features are product characteristics which are today more important than ever. Our extensive international experience with pressbrakes of varied construction and operating conditions means that we provide our customers with decisive competitive advantages.



The power module PLM combines pump, pressure filter and pressure adjustment in a bell housing developed as a control block. The low-noise high-pressure internal gear pump, from 5 to 50 ccm/r,

feeds at up to 350 bar directly into the model-cast bell housing via an axial pressure outlet.

This unconventional structure has clear advantages:

- Extremely compact assembly dimensions
- Substantially reduced noise level
- Can be directly flanged to standard motors

Many components such as the hosepipe between pump and filter and the tube between filter and control block are no longer required thus reducing the materials, logistics and assembly costs. A high degree of dynamics and control

accuracy as well as the extremely low production spread of the control valves are important preconditions for optimum movement and accurate positioning.

The new control valves type PIH/PRH in combination with our system amplifier PVR permit load-independent positioning of CNC press axes within a few μm .





The system amplifiers PVR5 and PVR6 specially developed for CNC pressbrakes form the interface between machine control and overall proportional hydraulics including position and pressure sensors. The entire data exchange for CNC is effected via rapid field bus systems. Functions relevant to the hydraulics system such as load sensing and pressure control are implemented in the PVR.

All the valves required for the movement and high retaining of the beam together...

The IPV press valve creates constructive space. The IPV represents the optimum combination of PIH control valve technology with non-leaking high retaining and pressure valves. Modular use on the PLM as a compact central hydraulic system solution PVM or the optimum supplement with suction valves as a system AVB for mounting directly at the cylinder.

Reliable retaining of the beam, minimum response time for very short

slow-down distances and equipped with switching position sensor for reliable monitoring. The Hoerbiger type IVN high retaining valves leave no customers' requirements unfulfilled.

Use of long-life, leakproof pressure control valves parallel to the high retaining valves means that additional "upstream" directional valves can be dispensed with. The new VDB E03 series has been developed exclusively for the special requirements in press brakes.

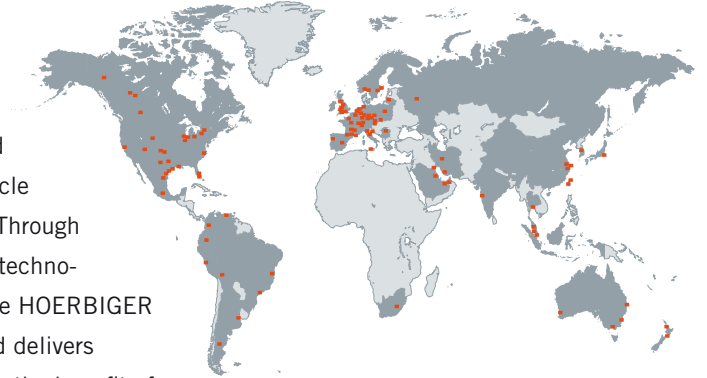


HOERBIGER - the technology group.

**With forward-looking ideas and innovative technologies as well as first-rate products and services,
we are always within reach for our customers.**

HOERBIGER Automation Technology is a business unit of HOERBIGER Holding AG, Zug / Switzerland. HOERBIGER is active throughout the world as a leading player in the fields of compression technology, automation technology and drive technology. In 2009, its 6,500 employees achieved sales of 772 million Euro. The focal points of its business activities include key components and services for compressors, gas engines and turbomachines, hydraulic systems and piezo

technology for vehicles and machine tools, as well as components and systems for shift and clutch operations in vehicle drive trains of all kinds. Through innovations in attractive technological niche markets, the HOERBIGER Group sets standards and delivers cutting-edge solutions for the benefit of its customers.



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