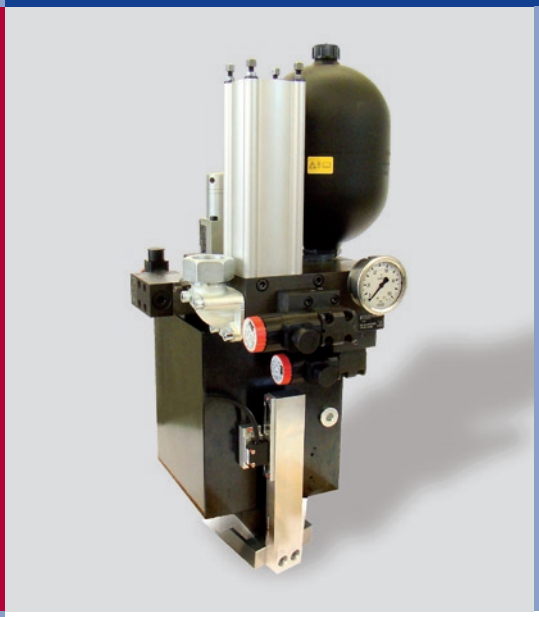
Voith Turbo

Punch System HCC



Design Concept and Operating Principle

HCC is an integrated stroke unit, specially optimized for applications in punching, nibbling and forming. HCC offers a good balance between performance and cost for such machines.

HS3 is the electronic link between HCC and machine control PLC/CNC. The machine control will communicate all parameters, like stroke positions, using the data interface. After cycle starting, all management and monitoring of hydraulic actuators and sensors are done by HS3. A robust position feedback with digital signals interface are used to monitor the hydromechanical closed loop.

Highly efficient use of power is achieved using the load-controlled “two-pressure-system”. Accumulator charging for low pressure results in high speed cylinder operation for nibbling and high speed punching. For high pressure operation, the reduced cylinder speed results in a reduction of noise and machine stress. In a compact design, all valves are placed on a manifold directly on the cylinder. The benefits of this are good hydraulic response together with simple installation and maintenance.

hydraulic

Specifications

- highly dynamic punch drive with simple and rugged directional valves
- predefined machine cycles with programmable stroke parameters
- high precision and robust valve technology
- process safety by feedback monitoring
- optimized power consumption with load-controlled active “two-pressure-system”

Scope of delivery

- **Punch Drive HCC**
  – optimized punch cylinder
  – manifold with valves and accumulator charging
  – various damping elements
- **Electronic Control HS3, data sheet 912**
  – intelligent drive control
  – data interface: RS-232, CAN Bus, Profibus, Ethernet (option)
- **Power Pack**
  – application optimised dimensioning
  – integrated cooling and filtering circuit

Options

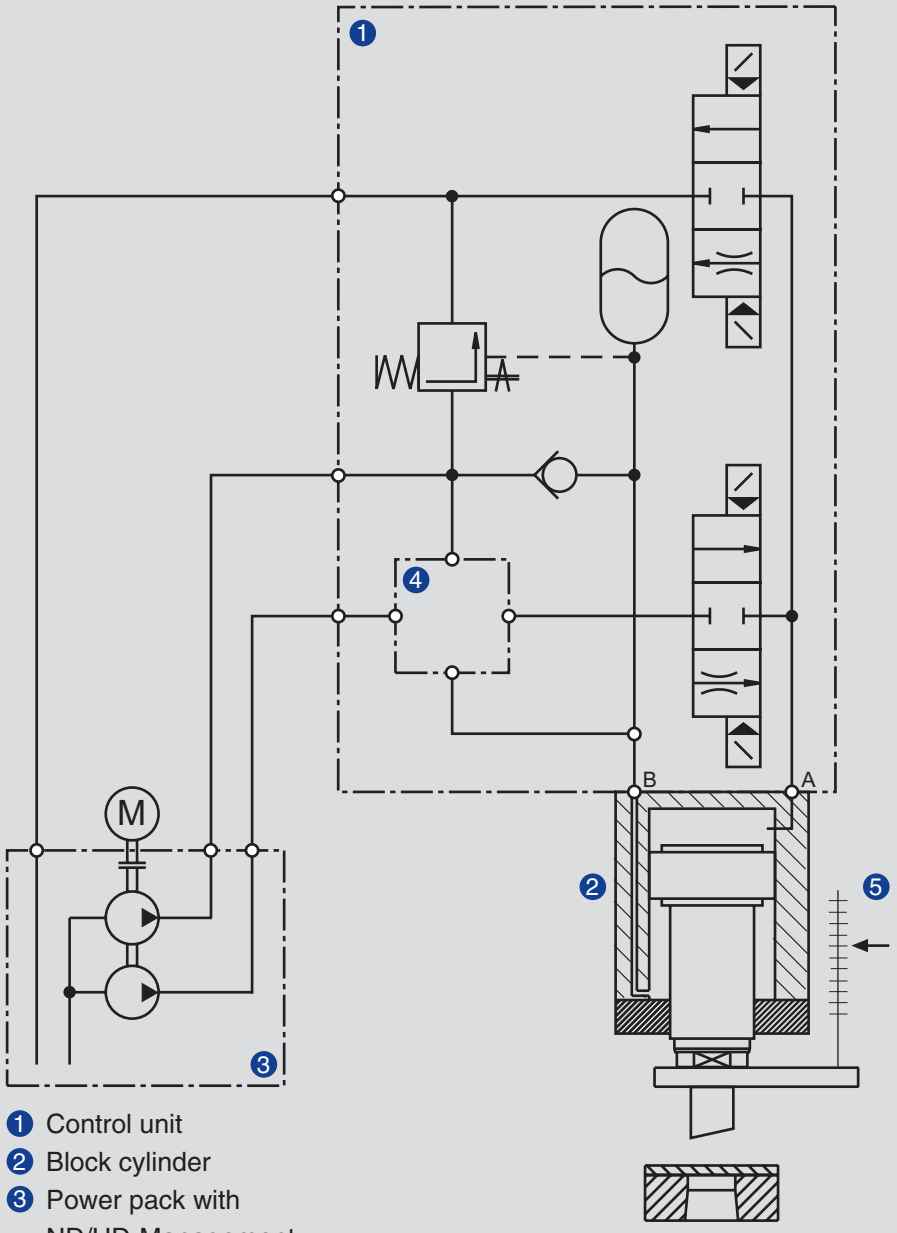
- additional sizes of max force
- cylinder with alternative fastening possibility
- power packs in conformity to customer‘s requirement
- data interface Ethernet

Key performance figures HCC

		HCC Type (tonnage)	
		20 t*	30 t
operating pressure ND/HD	[bar]	70/285	70/285
max. effective force	[kN]	220	330
max. return traverse power	[kN]	25	45
effective power by partial load (ND)	[kN]	35	50
cylinder stroke (standard)	[mm]	40	40
installed electric motor power	[kW]	7,5	11
cycle time punch stroke 6 mm	[ms]	55	60
cycle time punch stroke 10 mm	[ms]	85	90
			* in preparation

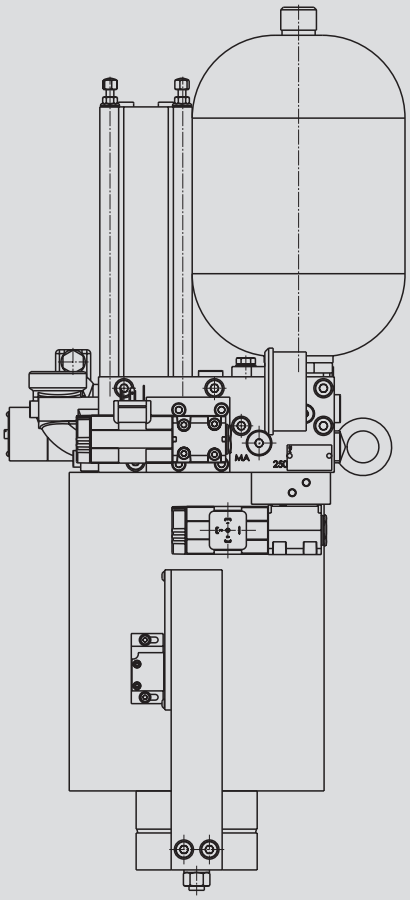
additional data according to dimensioning protocol

Functional diagram

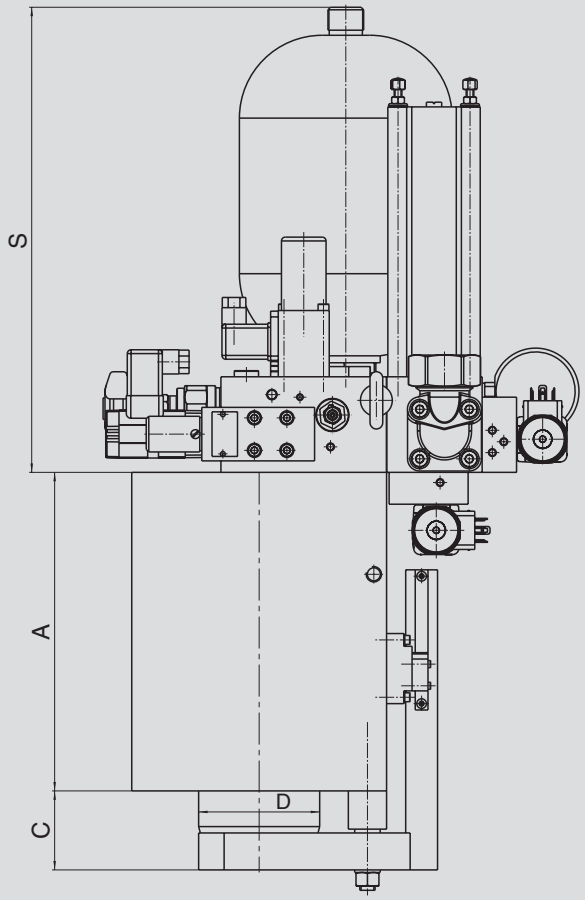


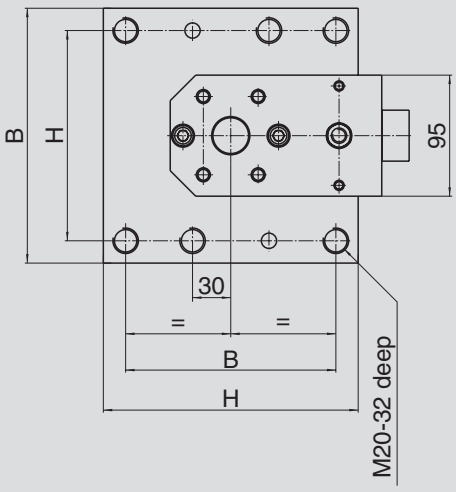
1 Control unit
2 Block cylinder
3 Power pack with ND/HD-Management
4 with load sensing
5 Way sensor

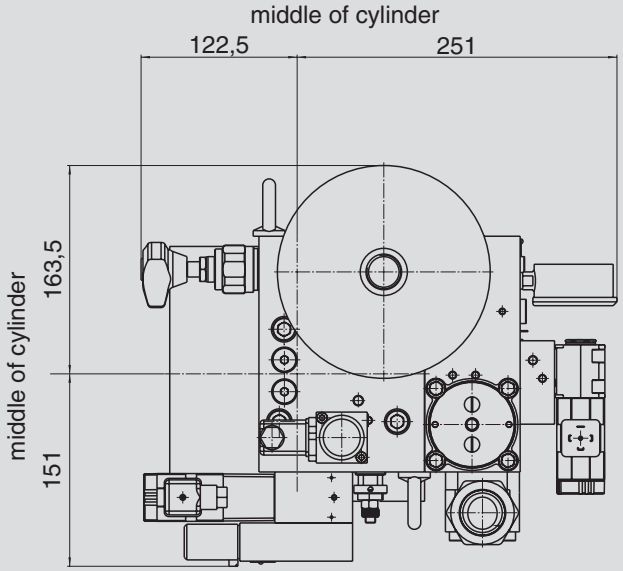
Basic dimensional drawing HCC Punch System 20 t/30 t:



view downside, without valves



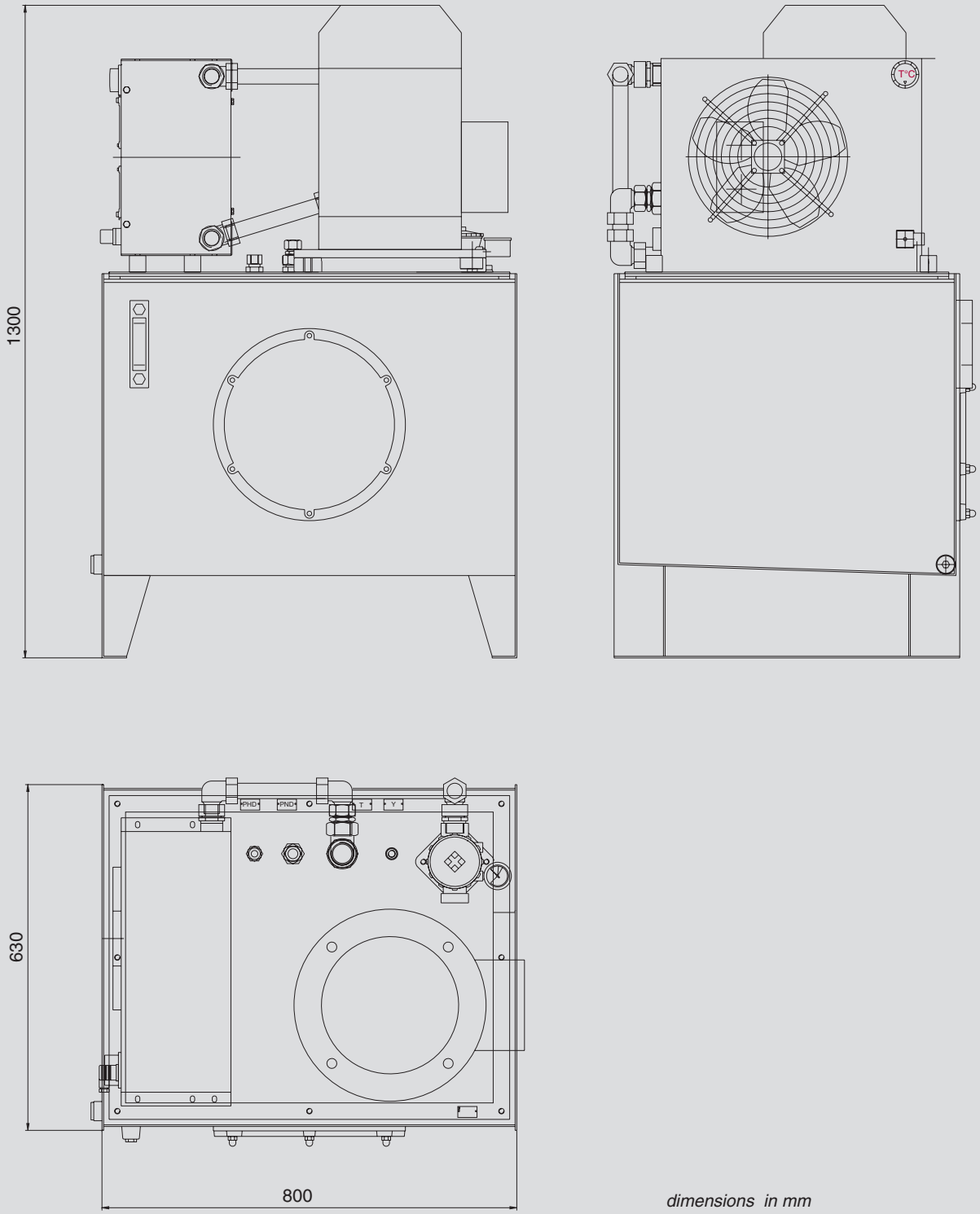




	A	B	C	D	H	S
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
HCC 20 t*	240	145	62	80	180	365
HCC 30 t	250	165	62	95	200	365

** in preparation*
dimensions in mm

Dimensional drawing power pack HCC 20 t/30 t:



dimensions in mm

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