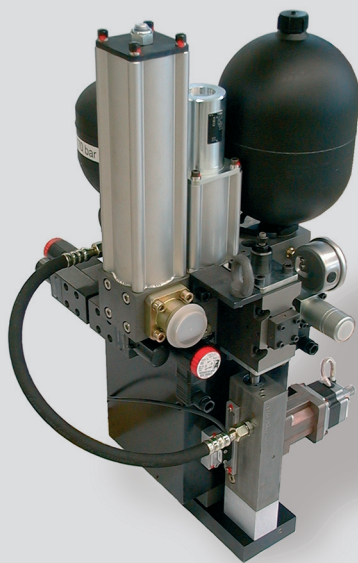


High Performance Punch System HRE



Design Concept and Operating Principle

HRE is an integrated stroke unit, specially optimized for applications in punching, nibbling and forming. HRE offers high-end performance for such machines.

All parameters like positions and speed may be programmed electronically. The cylinder is operating in a hydromechanically closed loop system. This system provides the expected performance figures for high speed punching and nibbling, as well as high precision forming and shaping.

PCU is the electronic link between HRE 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 PCU. A robust

position feedback with digital signals interface is used to monitor the hydromechanical closed loop.

Highly efficient use of power is achieved using the load-controlled “two-pressure-system”. Separate accumulator charging for low pressure and high pressure results in high speed cylinder operation in all conditions. 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.

Specifications

- highly dynamic punch drive with hydromechanic closed loop control
- predefined machine cycles with programmable stroke parameters
- high precision and robust valve technology
- process safety by feedback monitoring
- optimised power consumption with load-controlled active “two-pressure-system”

Scope of Delivery

- **Punch Drive HRE - NG 10**
 - optimised punch cylinder
 - manifold with valves and accumulator charging
 - various damping elements
- **Electronic Control PCU, data sheet 913**
 - intelligent drive control
 - data interface: RS-232, CAN Bus, Profibus, Ethernet (option)
- **Power Pack**
 - power optimised dimensioning
 - integrated cooling and filtering circuit

Options

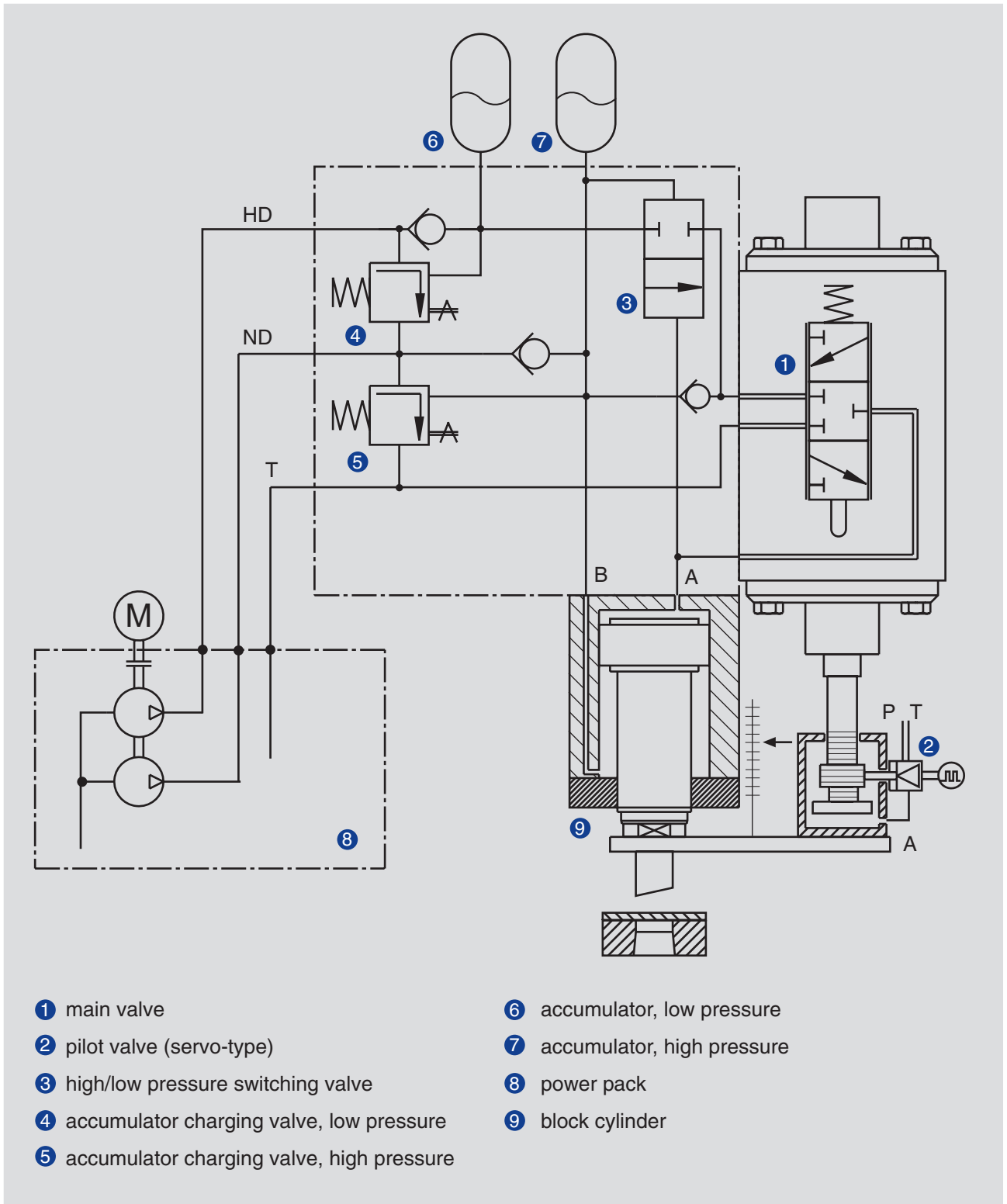
- HRE nominal size 16, 30 to
- additional sizes of max force
- cylinder with alternative fastening possibility
- power packs in conformity to customer's requirement
- data interface Ethernet
- easy data interface with HL-BRIDGE

Key performance figures HRE NG 10

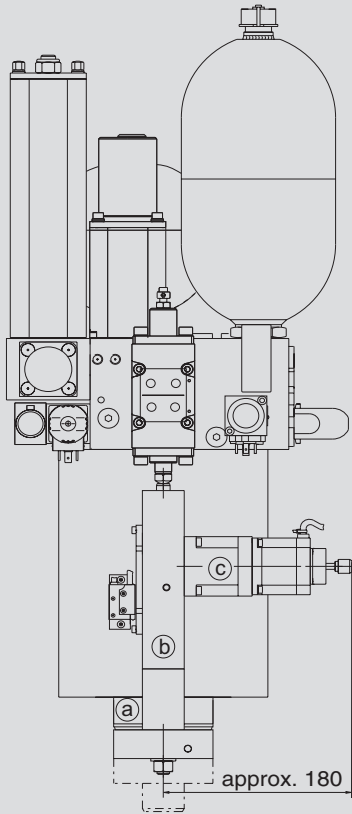
| | | HRE Type (tonnage) | |
|--------------------------------|-------------|--------------------|--------|
| | | 20 t | 30 t |
| operating pressure ND/HD | [bar] | 80/285 | 80/285 |
| max. effective force | [kN] | 220 | 330 |
| max. return traverse power | [kN] | 30 | 50 |
| cylinder stroke (standard) | [mm] | 40 | 40 |
| installed electric motor power | [kW] | 11 | 15 |
| cycle time punch stroke 4 mm | [ms] | 25 | 31 |
| cycle time punch stroke 6 mm | [ms] | 32 | 43 |
| cycle time punch stroke 8 mm | [ms] | 42 | 55 |
| stroke frequency at marking | strokes/min | 1700 | 1700 |

additional data according to dimensioning protocol

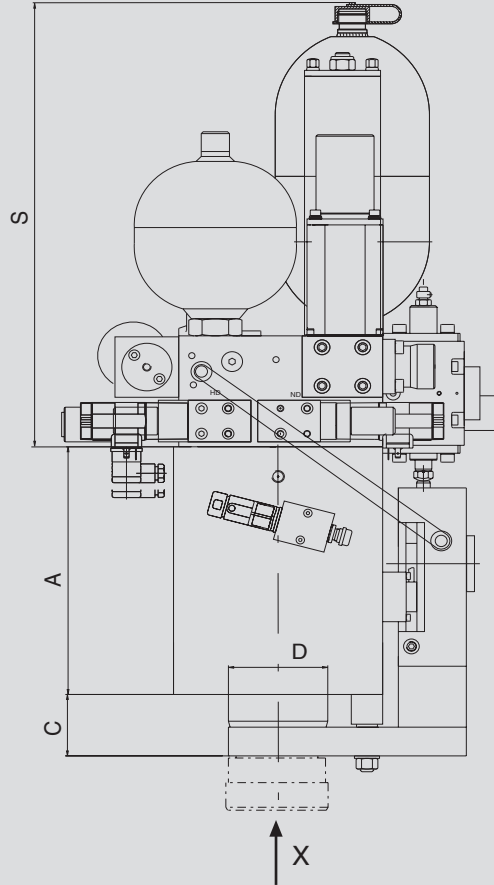
Functional principle



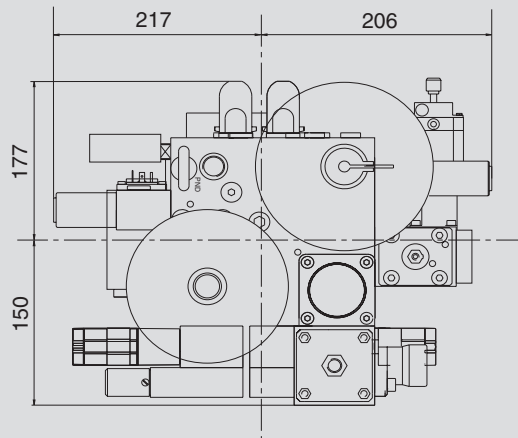
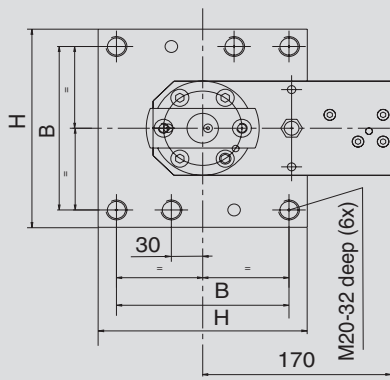
Basic dimensional drawing HRE 20 to/30 to:



Attention:
parts a, b and c will be
moving up/down the full stroke



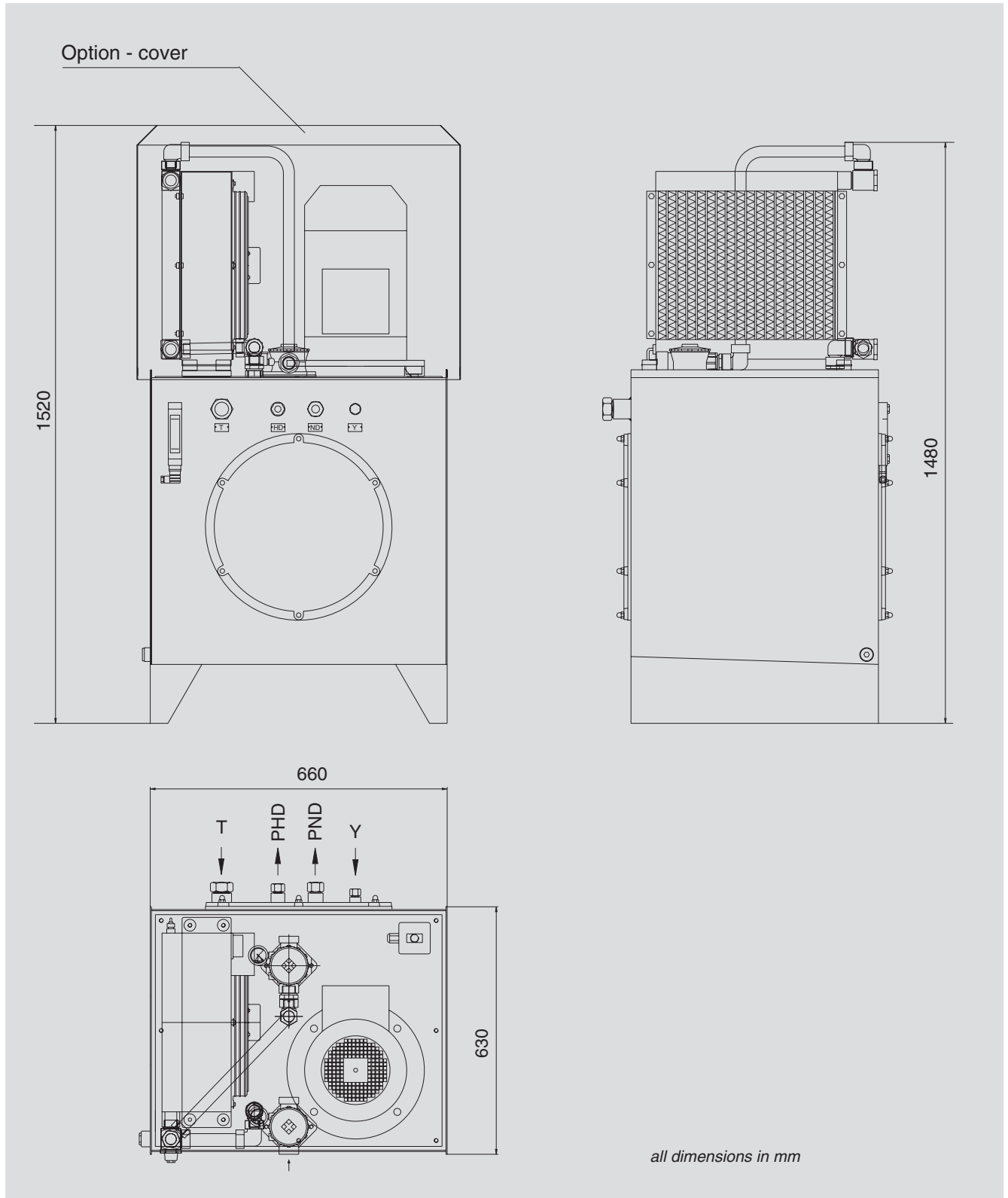
view X



| | A | B | C | D | H | S |
|----------|------|------|------|------|------|------|
| | [mm] | [mm] | [mm] | [mm] | [mm] | [Nm] |
| HRE 20 t | 240 | 145 | 62 | 80 | 180 | 390 |
| HRE 30 t | 250 | 165 | 62 | 95 | 200 | 450 |

all dimensions in mm

Dimensional drawing power pack HRE 20 to/30 to:



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