

Servo Drive BWIL

Technical Data Sheet



Design and Function

The electrohydraulic servo drive BWIL is a free programmable high performance drive.

The ram cylinder operates in the hydro-mechanical control loop and fulfills all the requirements of a high-performance servo drive. In addition to high ram performance at punching or shearing, precise work during forming is self-evident.

HS4 is the electronic link between servo drive BWIL and machine control PLC/CNC. The machine control will communicate all parameters, like stroke positions and speed, using the data interface. After cycle starting, all management and moni-

toring of hydraulic actuators and sensors is done by HS4. A robust position feedback with digital interface is used to monitor the closed loop ram operation.

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.

Technical Data

General

ram force	200 to 2000 kN (standard type series)
return force	10% to 20% of ram force
ambient temperature	-5 to +50 °C
mounting position	mountable in any position

Hydraulic

operating pressure	max. 250 bar
flow rate BWIL 25	max. 350 l/min
flow rate BWIL 32	max. 750 l/min
flow rate BWIL 40	max. 1500 l/min
fluid temperature	-10 to +70 °C
viscosity range	10 to 300 mm ² /s

Electric

control	HS4, data sheet 915
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Force / cylinder dimensions

force*	piston diameter ØD	piston diameter Ød
[kN]	[mm]	[mm]
210	120	110
300	140	130
400	160	150
480	180	165
600	200	185
740	220	205
850	240	220
1020	260	240
1190	280	260
1390	300	280
1590	320	300
1820	340	320
1960	360	335
2210	380	355
2470	400	375
2680	420	390

* additional data according to dimensioning protocol

Product Features

- hydromechanic closed loop
- high dynamic even with high forces and external masses
- programmable start position, working stroke, speed and other free choosable parameter
- process safety by monitored cycle sequence
- robust valve technology
- high availability

Scope of Delivery

- servo drive BWIL
 - optimized hydraulic cylinder
 - control valve
 - high retention valve, in accordance with specific requirements
 - accumulator
 - Voith servo motor
- electronic control HS4-SV1
 - intelligent drive control and diagnosis
 - data interface: RS-232, CAN Bus, Profibus, Ethernet, USB
- linear position measuring system (incremental or absolute)
- cable kit for servomotor

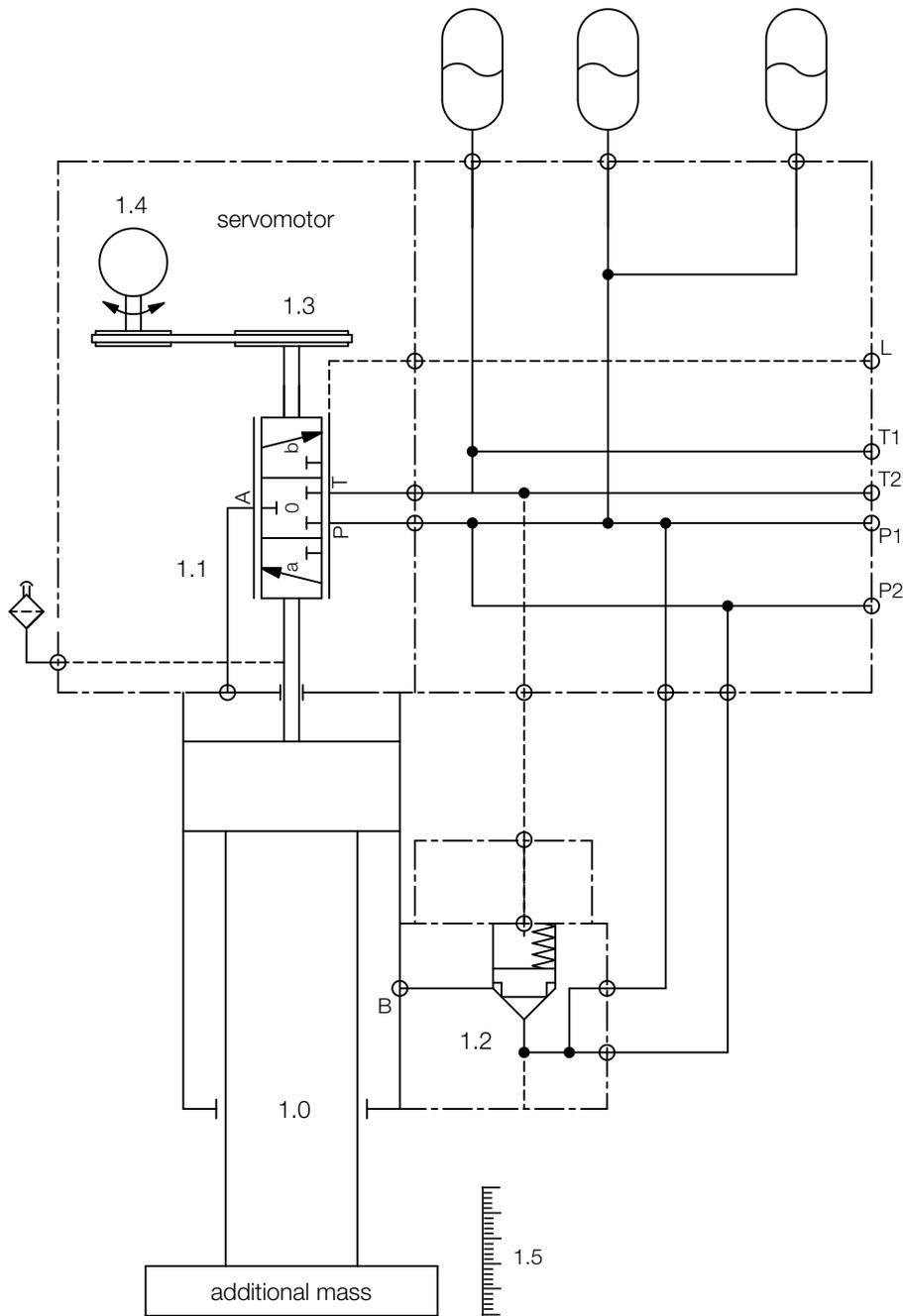
Options

- demand-driven high / low pressure switching
- safety modules (e.g. Performance Level d)
- power pack
- special designs
- customer's setpoint control

Applications

- drive for positioning (active downholder for presses)
- combination drive for punching, shearing and stamping
- servo drive for forming machines

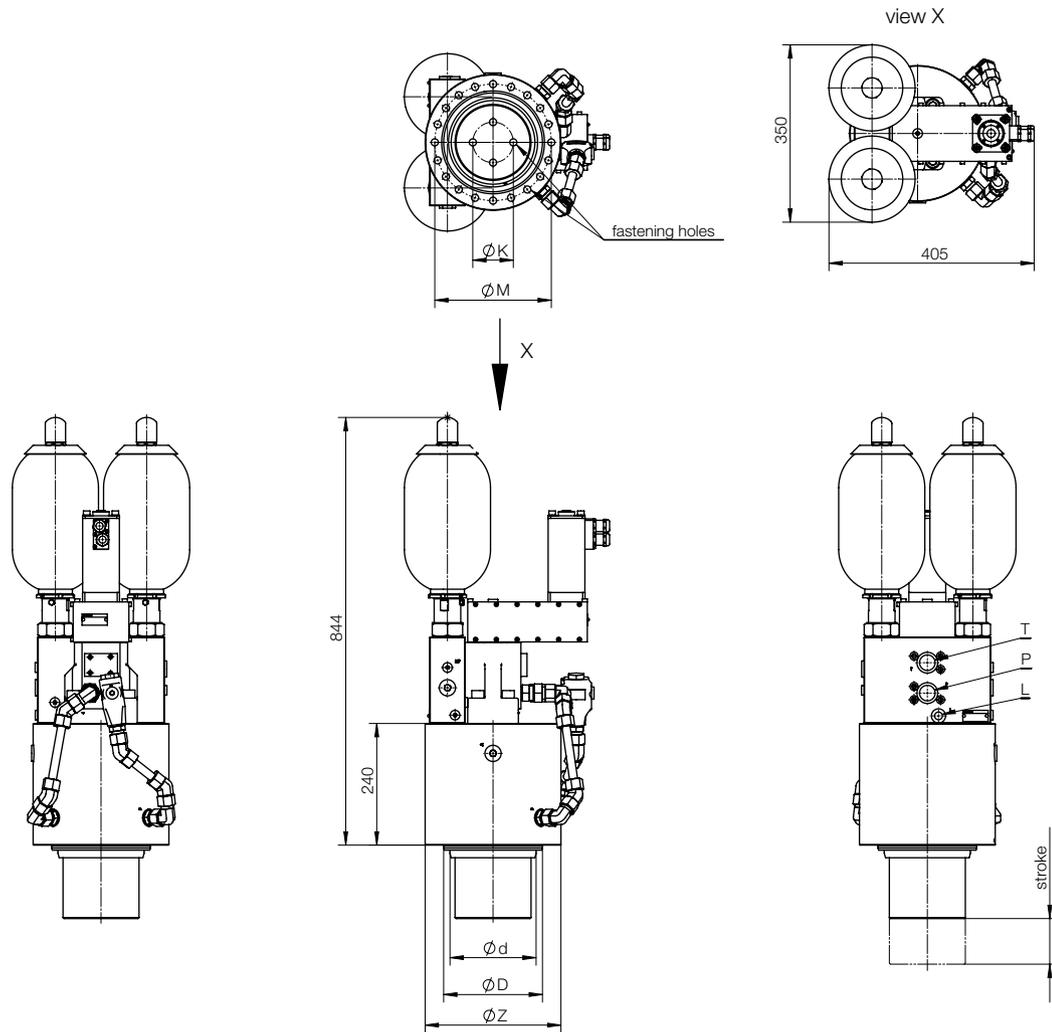
System sketch



Principle of operation

The servo motor 1.4 specifies the setpoint via a toothed belt drive 1.3 to the control valve 1.1 on. In the valve, the rotational movement is converted into linear motion and is amplified by the hydraulic cylinder many times 1.0. The actual position of the working piston is guided directly on these back through

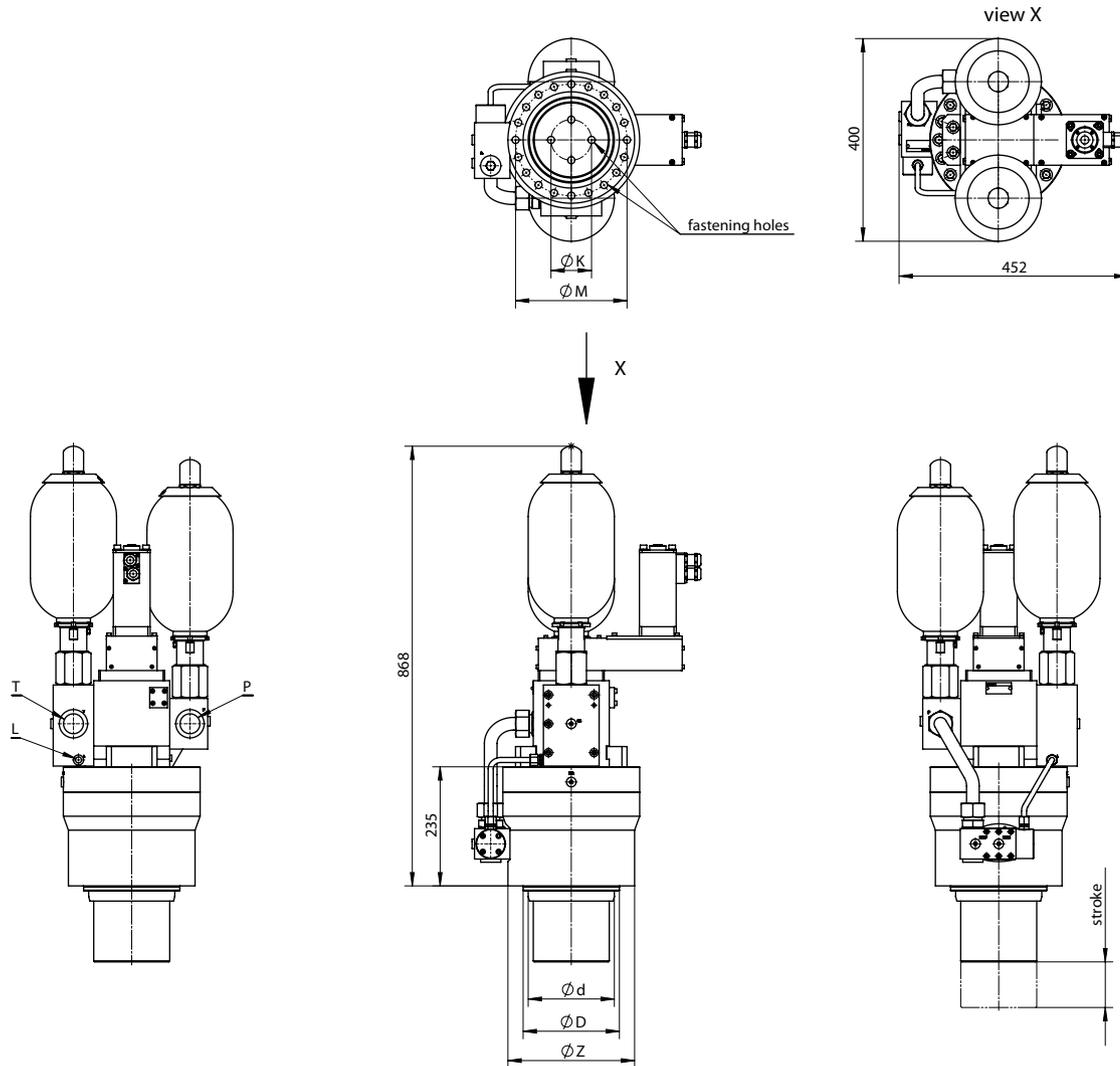
the mechanical connection between the hydraulic cylinder and control valve. Thus, the hydro-mechanical control loop is closed. When switched, the attached high holding valve 1.2 will keep the cylinder, and the mass attached to it, in the starting position.



Example

BWIL 25 with cylinder diameter 180/170/16 - 60mm stroke.
 The dimensions given are to be considered as guidelines. Di-
 mensions and port sizes are defined project-specific basis.

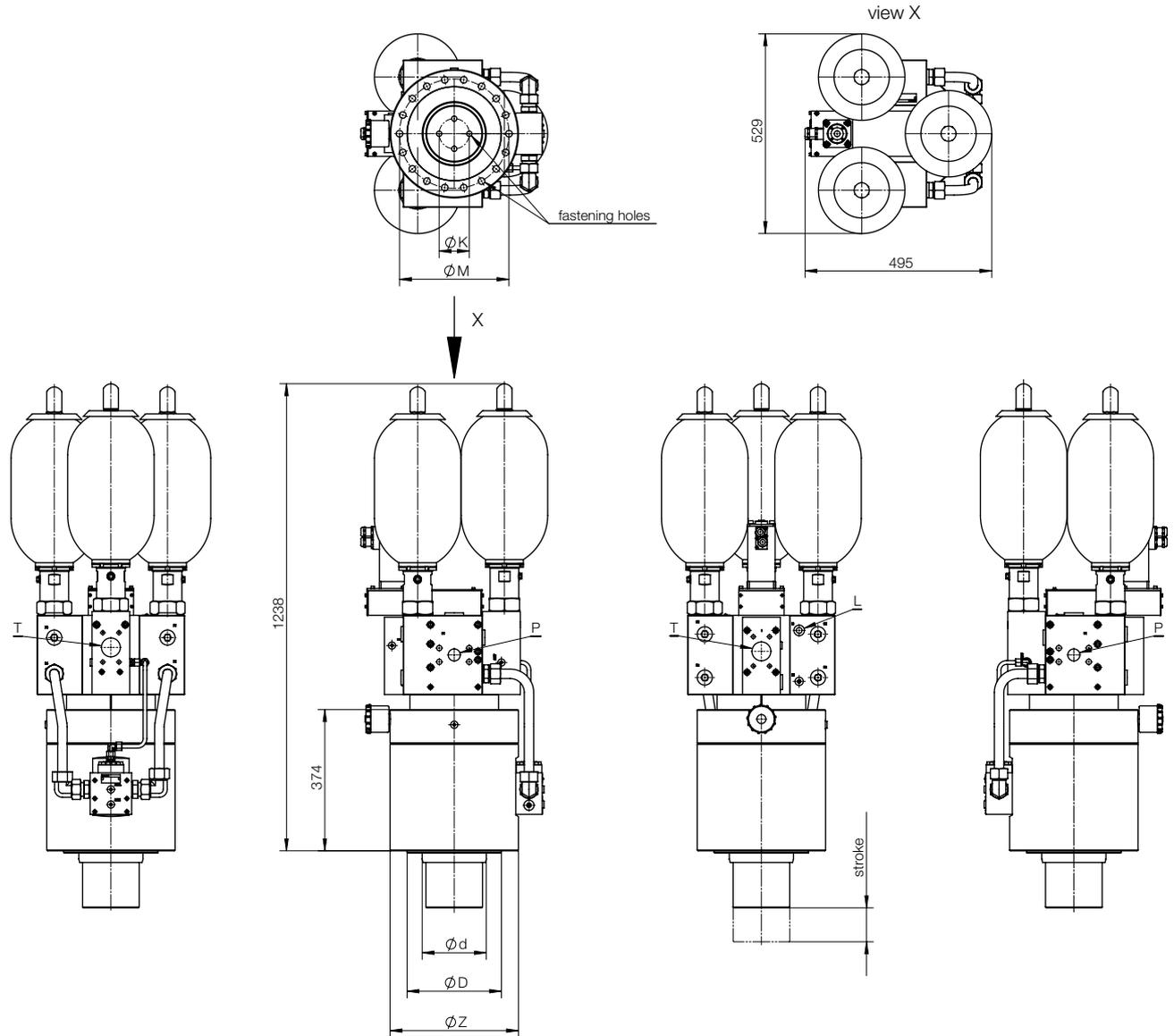
dimensions in mm



Example

BWIL 32 with cylinder diameter 180/160/32 - 25mm stroke.
 The dimensions given are to be considered as guidelines. Dimensions and port sizes are defined project-specific basis.

dimensions in mm



Example

BWIL 40 with cylinder diameter 240/220/60 - 50mm stroke.
 The dimensions given are to be considered as guidelines. Dimensions and port sizes are defined project-specific basis.

dimensions in mm

Type Code

BWIL	25	DW	700	AC	R-0	05	200	180	32	080	S	
												cylinder
												R = backside with groove; S = front side; T = R+S; X = special design
												cylinder stroke
												feedback diameter
												rod diameter
												piston diameter
												support unit holding pressure
												00 = without support unit / annular space protection; 05 = 5 bar; 10 = 10 bar; RA = with annular space protection; HY = application-specific support unit
												safety switch
												I = internal; 0 = without
												arrangement of the motor
												R = belt drive; K = coaxial
												set point motor
												AC = servomotor; SM = stepper motor
												design
												control
												DW = 3-direction-operation HS = High pressure switch lag depending HD = High pressure switch pressure dependent
												size
												servo drive
												material number

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