Voith Turbo

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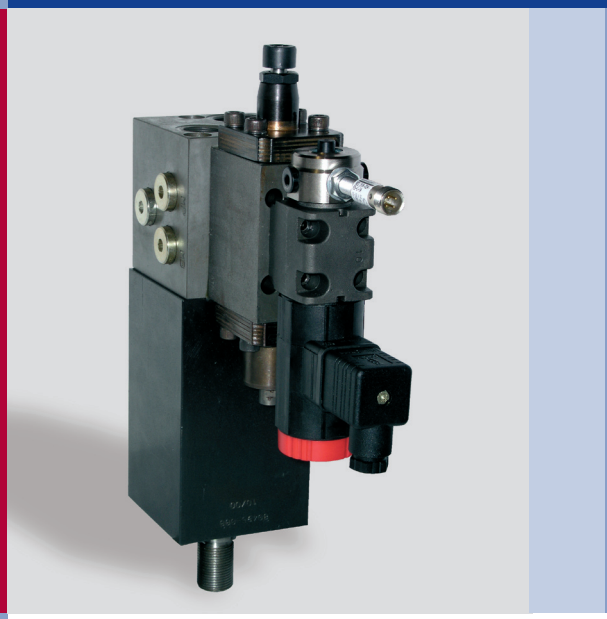
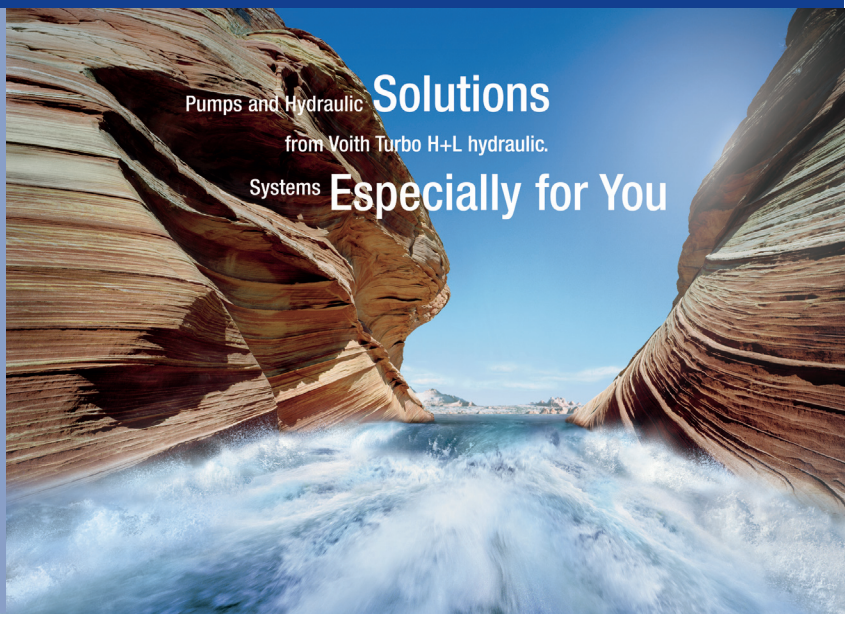
Hydraulic Ram Control Unit HSE NG 6





Design and Function

Common features of VTHL ram control units:

- modular design
- robust valve elements
- high dynamics
- simple control structure

The integration of all necessary valve components into a manifold mounted directly on the block cylinder results in a compact design and best power density. Together with additional mechanical feedback, the hydraulically piloted main valve forms the basis for the stroke control.

Tdc (top dead center) control is always with mechanical closed loop feedback. Bdc (bottom dead center) control may be with electrical feedback or with mechanical feedback control, depending on the application.

The hydromechanical design of the stroce control unit offers an accurate and drift-free tdc. Due to the fast steering process, the bdc has a good repatability as well.

H+L hydraulic

Features

- highly dynamic punching and shearing drive for shortest cycle time
- smooth stroke operation via hydraulically damped cylinder ram
- stable tdc position without drift
- exact bdc reversing for process safe stroke operation
- manually adjustable stroke positions; optionally electrical
- simple functions with robust valve technique
- monitored processes with low control complexity

Options

- stroke control units NG10 and NG25 for higher force range
- stroke control unit HSP for programmable stroke positions
- complete punching systems

Applications

- punching/nibbling
- shearing/cutting
- stamping

Examples of Applications

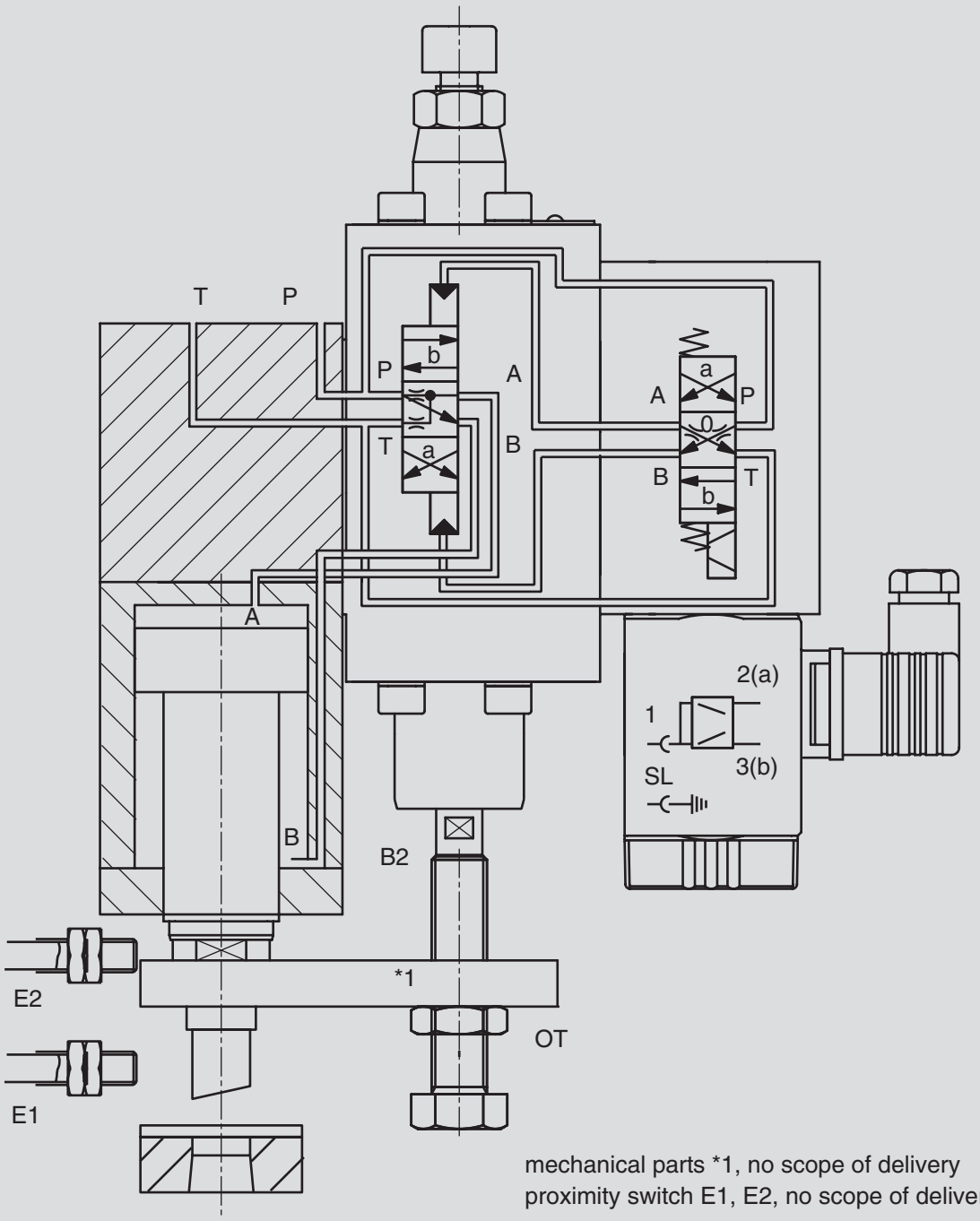
Application	Specific Performance
Punching Drive	Punching force: 70 kN
	Total cycle time at 10 mm stroke: 40 ms
Wire Cutting Machine	Shearing force: 20 kN
	Total cycle time at 12 mm stroke: 35 ms

Technical Data

General		
Ram force	kN	10 to 200 (standard design)
Ram return force		approx. 50% ram force
Operating force tdc	N	250 at 80 bar control pressure
Operating force bdc	N	150 (at mechanical bdc reversal)
Ambient temperature	°C	-5 to +50
Mounting position		mountable in any position
Hydraulic		
Operating pressure	bar	max. 250
Control pressure	bar	80; max. 160
Hydraulic oil temperature	°C	-10 to +70
Viscosity range	mm^2/s	10 to 300
Electric		
Valve control		VTHL stroke control HS2 (data sheet: 9.1.1)
Valve voltage (±10%)	V	24 DC
Switching time „Start“	ms	8 ms (HS2)
Valve switching time from „bdc“	ms	7 ms (HS2)
Power consumption P20	W	20
System of protection DIN 40050		IP65 with valve plug connected

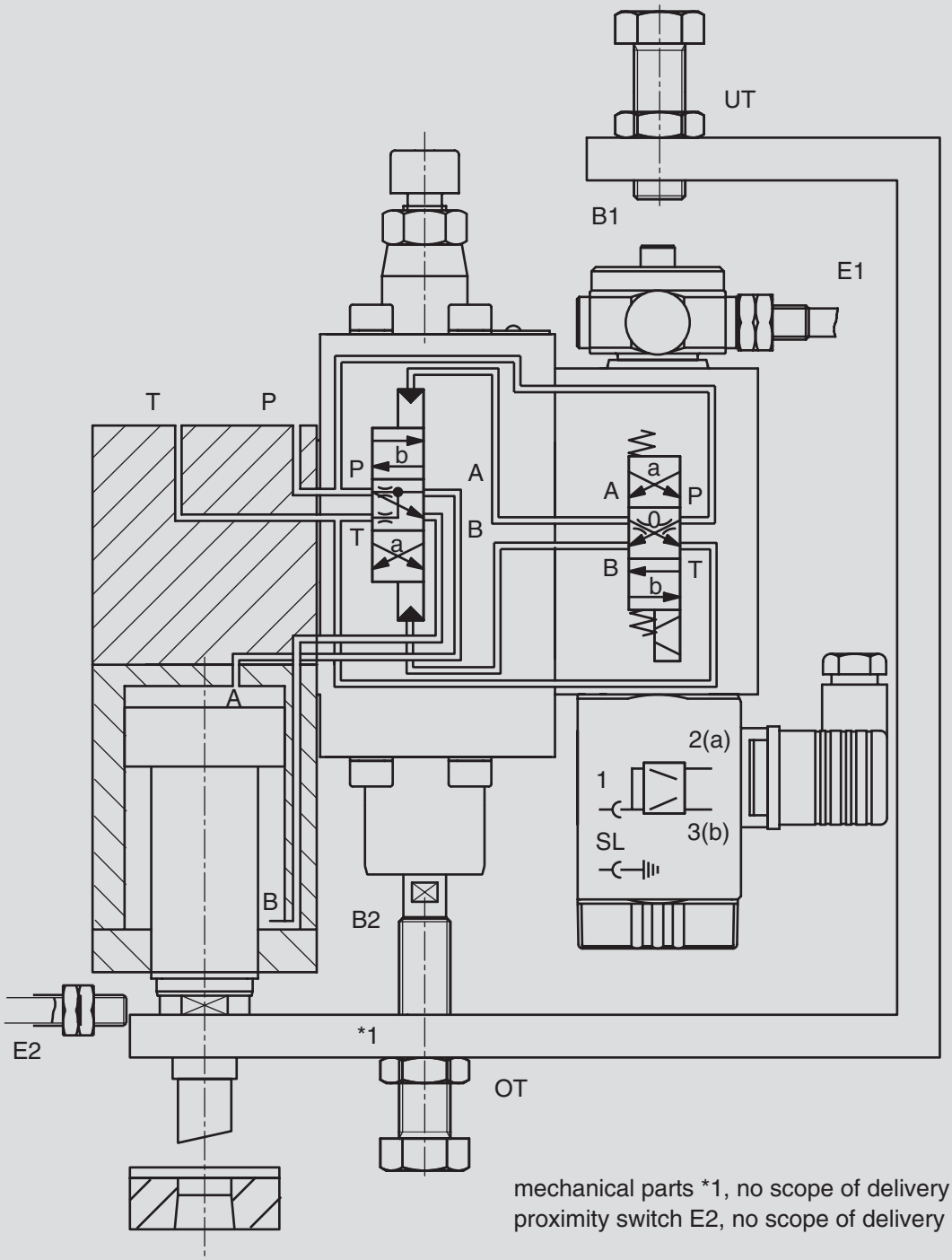
Further specific performance data according to computation minutes.

Functional Diagramm HSE NG 6 with electric bdc reversing



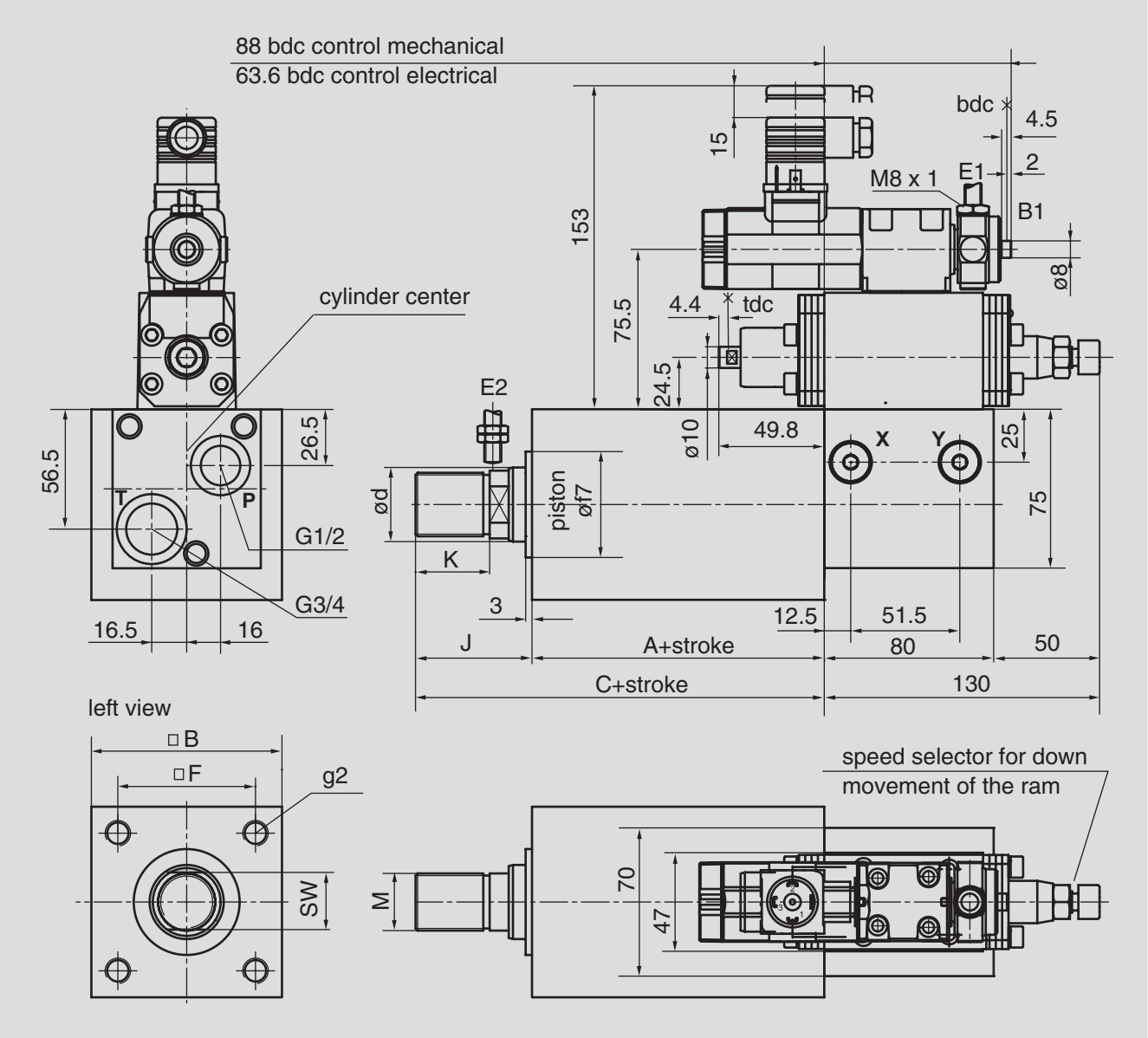
mechanical parts *1, no scope of delivery
proximity switch E1, E2, no scope of delivery

Functional Diagramm HSE NG 6 with mechanic bdc reversing



mechanical parts *1, no scope of delivery
proximity switch E2, no scope of delivery

Dimensioned Drawing Basic Design

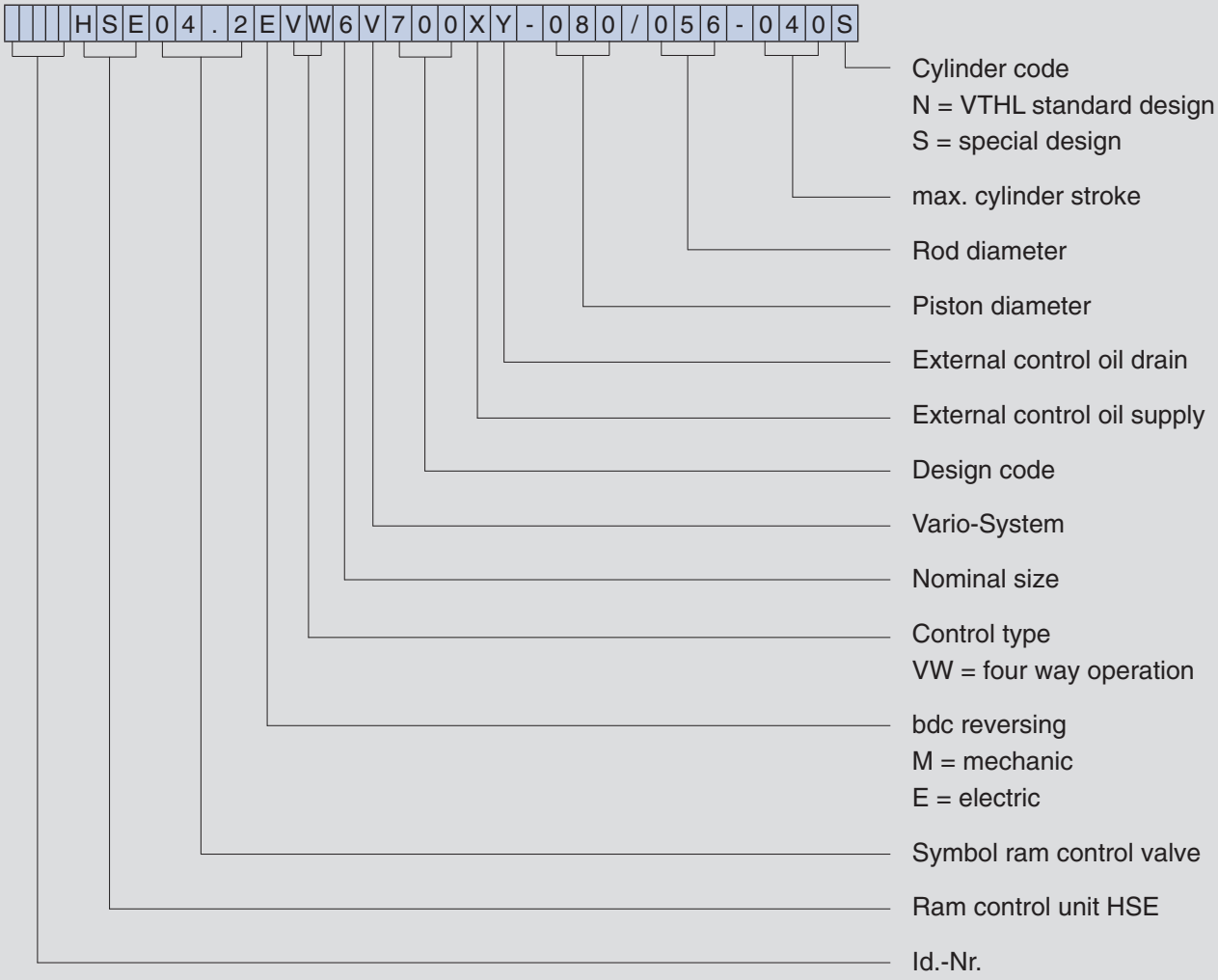


Dimension Table Standard Cylinders

Piston diameter	Rod diameter	A	B	C	F	J	K	M	SW	g2
40	28	90	75	134	55	44	30	M20 x 1,5	22	M10
50	35	98	90	153	65	55	35	M27 x 2	27	M12
63	45	120	105	182	70	62	42	M30 x 2	36	M16
80	56	135	125	210	90	75	50	M42 x 2	46	M16
100	70	190	150	280	110	90	60	M48 x 2	60	M20

further cylinder dimensions on request
all data in mm

Type Code



Electronic Control

The ram control units HSE are delivered with an electronic control, the link between hydraulics and machine control. This control is adapted to the application.

Please refer to the technical data from the data sheet of the electronic control.

Electronic Control	Data Sheet
HS2	9.1.1
HS3	9.1.2

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