

Control for CNC press brakes type ePrAX modular

Product documentation



Operating pressure $p_{\max}$:

320 bar

Volume flow $V_{\max}$:

50 L/min



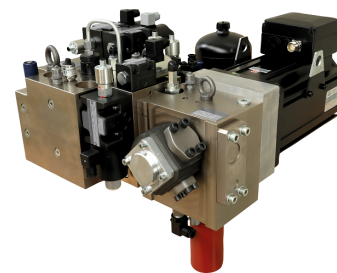
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Product characteristics

The hydraulic press drive ePrAX® modular adapted to the special requirements of drives for CNC press brakes. All required components can be assembled according to the modular principle. The flexible arrangement allows an optimal use of the mounting space.

For each actuator a servo motor takes over the control of power stroke and fast stroke as well as bending force. The return stroke partly takes place using temporarily stored hydraulic energy. In this way a high dynamic with significant energy savings and shorter cycle periods is possible. At the same time the operating noise of the press brake is drastically reduced by each adapted speed.



Press brake control type ePrAX modular

Features and benefits:

- rated power: 24.3 kW (per axis)
- mounting position: horizontal (cylinder module, tank module) or any position (Servo Power Module)
- high system stiffness and thus high control accuracy
- pre-assembled and fully tested press control system with minimum installation and maintenance effort
- standardized cylinder interface allows different cylinder sizes and variable stroke speeds
- Other options, such as modules for tool clamping, are available for press control.
- complies with valid accident prevention regulations
- certified with type examination certificate no. 18003

Intended applications:

- press brakes

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Available versions

Type code Servo Power Module

SPM	2	019	PHS	0001	A001	42	S...
							special design
							shaft diameter motor
							variety counter motor adapter
							variety counter servo motor
							servo motor
							volume flow
							size
							system

system

SPM Servo Power module

size

2 size 2 (HQI 2)

volume flow [ccm/U]

size 2

008	008 ccm
011	011 ccm
013	013 ccm
016	016 ccm
019	019 ccm
022	022 ccm

servo motor

PHS Phase
XXX without

variety counter servo motor

0001 (incl. braking resistor, line filter and converter)

0003 (incl. braking resistor, line filter and converter)

variety counter motor adapter

A001

A004

shaft diameter motor

24 | 24 mm

42 | 42 mm

Type code Cylinder module

S	CM	55368	L	063	-	2	H	X	-	A	S...
											special design
											Slow Up module
											options
											interface tank module
											interface Servo Power module
											size
											design
											number of basic block
											system

monitoring of valves

position monitoring of valves

S	monitoring of:
	- two 2/2-way seated valves - two 4/2-way seated valves
-	no monitoring

system

CM | press brake control

Number basic block

53368 (size suction valve 050)	$V_{\max} = 30 \text{ L/min}$
55074 (size suction valve 063)	$V_{\max} = 50 \text{ L/min}$

design

L | left

R | right

size

050 size 50 ($V_{\max}$ suction valve = 420 L/min)

063 size 63 ($V_{\max}$ suction valve = 680 L/min)

interface Servo Power module

2 size 2 SPM

interface tank module

H 2 1/2"

options

X without option

Slow Up module

A 1.4-210-X

B 2.0-210-X

X without

Type code Tank module

TM	070	H	0001	A	0001	S...
						special design
						variety counter design 0001
						level and temperature switch
				X		without level and temperature switch
				A		with level and temperature switch
						variety counter dimensions 0001
						interface cylinder module H 2 1/2"
						tank size 070 70 L
system	TM					tank module

Type code Slow Up module

1.4	-	210	-	X	S...
					special design
					precharge pressure (p0)
					X unfilled
					— ___ bar
					accumulator pressure (p2)
					210 210 bar
					250 250 bar
					nominal volume accumulator
					1.4 1.4 L
					2.0 2.0 L

Accessories

Cables

components	order number
motor line - 5 m	
PW-A-D04-5-GTV (for SPM2013PHS0003A004-24)	KB3375A
PW-C-D06-5-GTV (for SPM2019PHS0001A001-42)	KB3422A
motor line - 10 m	
PW-A-D04-10-GTV (for SPM2013PHS0003A004-24)	KB3308A
PW-C-D06-10-GTV (for SPM2019PHS0001A001-42)	KB3423A
resolver line - 5 m	
CR-X-A28-5-GTV (for SPM2013PHS0003A004-24)	KB3376A
CR-X-A28-5-GTV (for SPM2019PHS0001A001-42)	KB3376A
resolver line - 10 m	
CR-X-A28-10-GTV (for SPM2013PHS0003A004-24)	KB3309A
CR-X-A28-10-GTV (for SPM2019PHS0001A001-42)	KB3309A

Tool clamping

component	order number
tool clamping without pressure control	HB55369-002A
tool clamping with pressure control 80 bar	HB55370-002B

General

weight	Servo Power module: ~100 kg		
	cylinder module: ~150 kg (including Slow Up module)		
	tank module: ~35 kg		
ambient temperature	0 to +40 °C		
mounting position	horizontal (cylinder module, tank module) or arbitrary (Servo Power module)		
volume	tank module: ~70 L		
surface protection	Servo Power module:	housing:	autokatalytic nickel coating ISO 4527-Fe/NiP (10) 5
		plate:	autokatalytic nickel coating ISO 4527-Fe/NiP (10) 5
		motor flange:	without
	cylinder module:	autokatalytic nickel coating ISO 4527-Fe/NiP (10) 5	
	tank module:	surface after welding: DIN 509 42-Fe/MnPh outside surface coated with BISCON HB NTL , black matt coating thickness 50 - 100 µm	
material	Servo Power module:	housing:	0.7040 (EN-GJS-400-15)
		plate:	1.0718 (11SMnPb30)
		motor flange:	3.1645 (EN AW-2007); alternative material: 3.1355 (EN AW- 2024)
	cylinder module:	0.7040 (EN-GJS-400-15)	
	tank module:	material 1.0037 (S235JR) / alternative material Q235-A	

Hydraulic parameters

Hydraulic fluid: mineral oil according to DIN 51524, other media on request

max. operating pressure (initial pressure)	320 bar		
volume flow $V_{\max}$	NG050	30 L/min	
	NG063	50 L/min	
hydraulic fluid temperature	-10 to +70 °C		
viscosity	10-600 mm²/s; recommended range for continuous operation: 20-100 mm²/s		
permissible degree of pollution	max. class 19/16/13 according ISO 4406		
volume flow $V_{\max}$ suction valve	NG050	420 L/min	
	NG063	680 L/min	

Electrical parameters

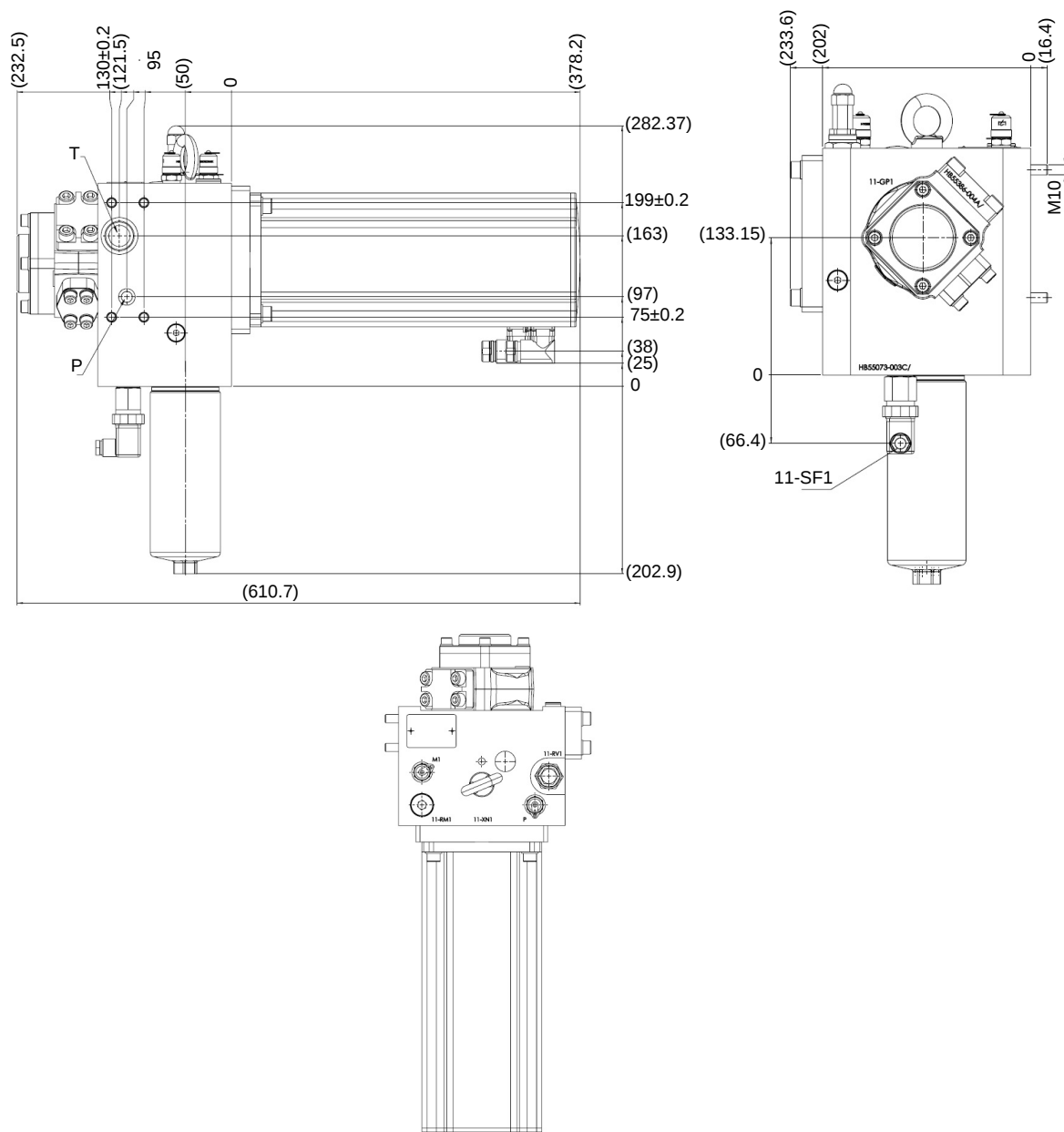
rated voltage	3x400 VAC 50/60 Hz
rated current	SPM2013PHS0003A004-24: 22 A SPM2019PHS0001A001-42: 35 A
fuse	SPM2013PHS0003A004-24: 3 x 25 A gG SPM2019PHS0001A001-42: 3 x 35 A gG
rated power at 400 VAC	SPM2013PHS0003A004-24: 15,3 kW SPM2019PHS0001A001-42: 24,3 kW
frequency	50/60 Hz
frequency fluctuation	± 10 %
asymmetry	± 3 %
operating mode / duty cycle	S1
ingress protection class (DIN 40050)	IP20

Performance data may vary (depending on the motor and inverter used).

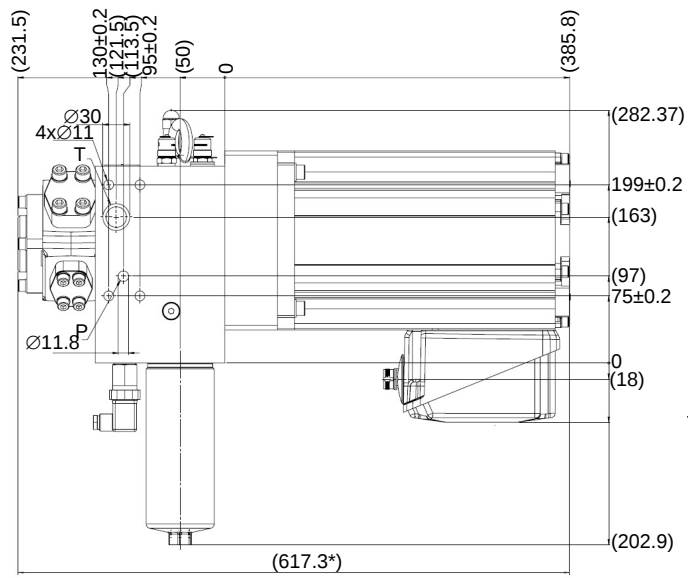
All dimensions in mm, subject to change.

Servo Power module

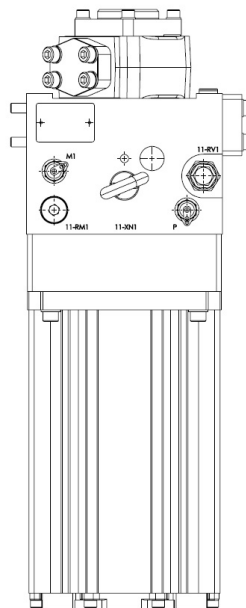
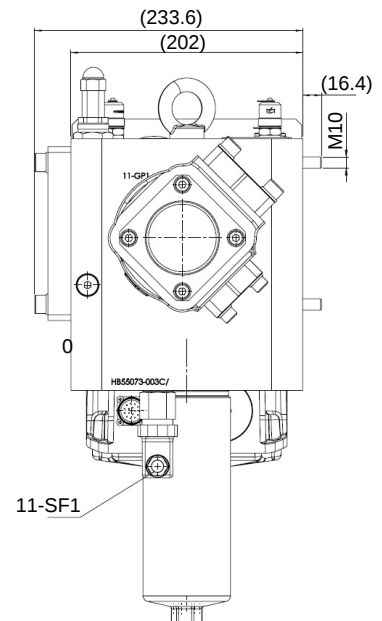
SPM2013PHS0003A004-24



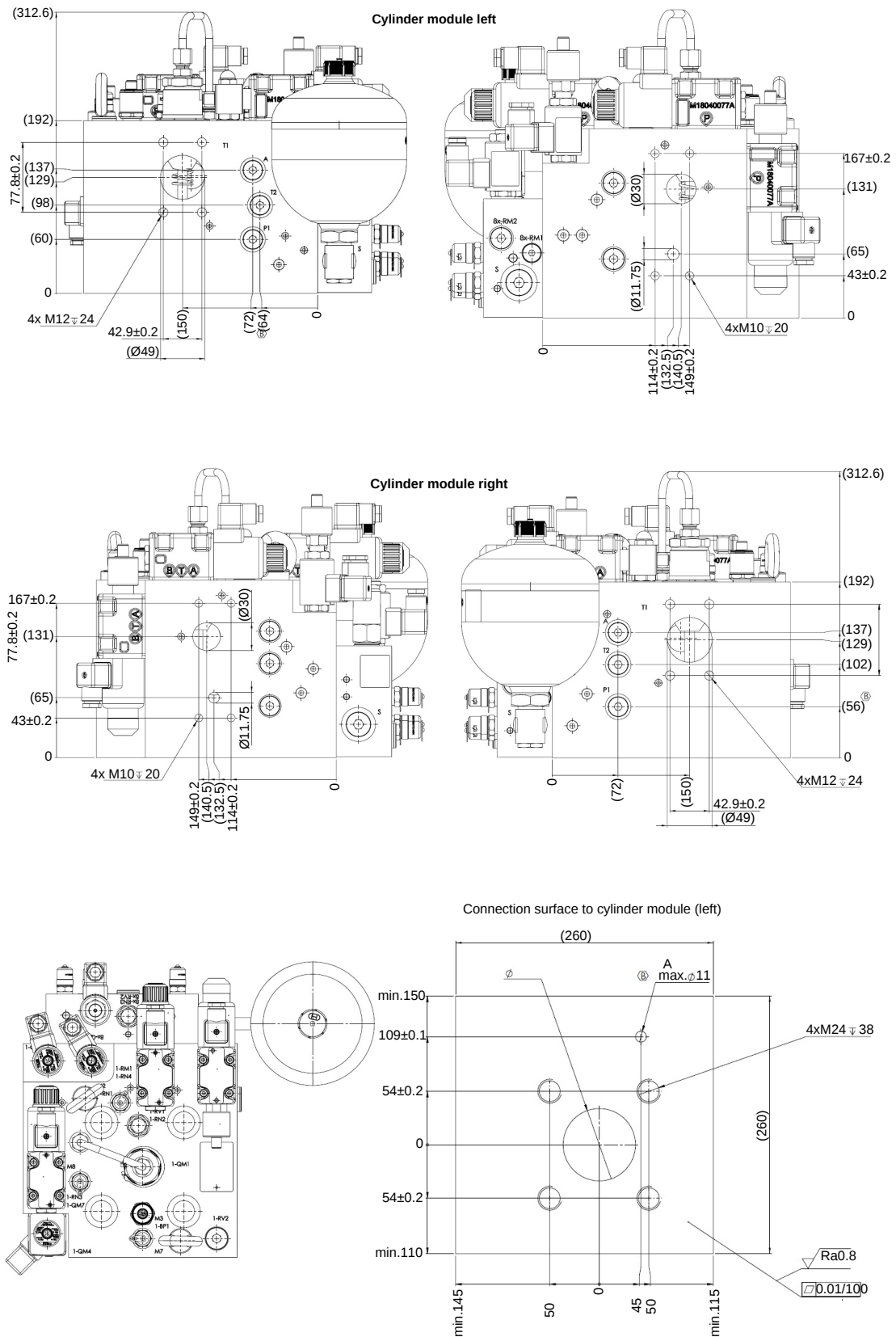
SPM2019PHS0001A001-42



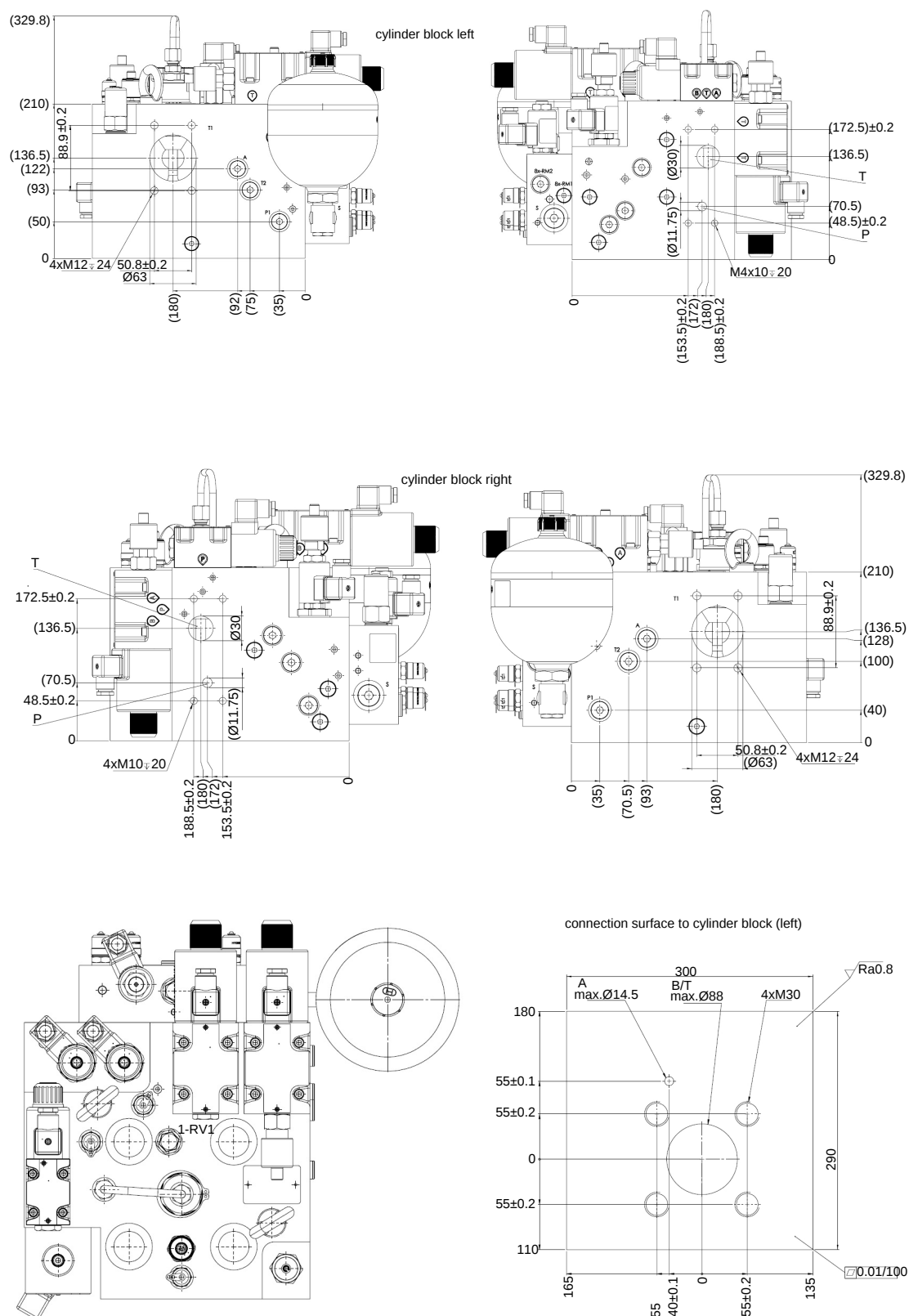
*Pump and motor are size-dependent on tonnage and speed.



Cylinder module CM050

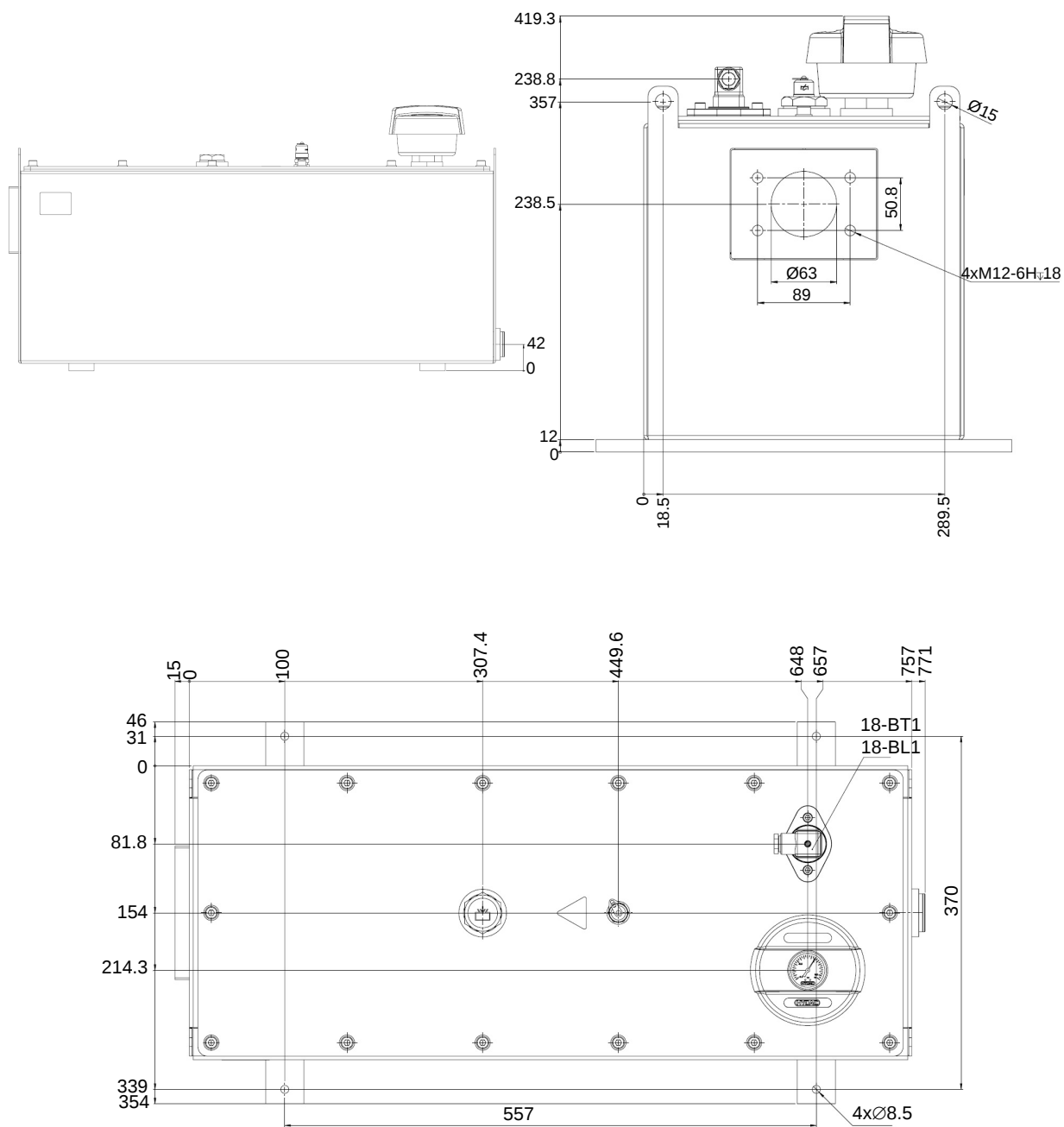


Cylinder module CM063

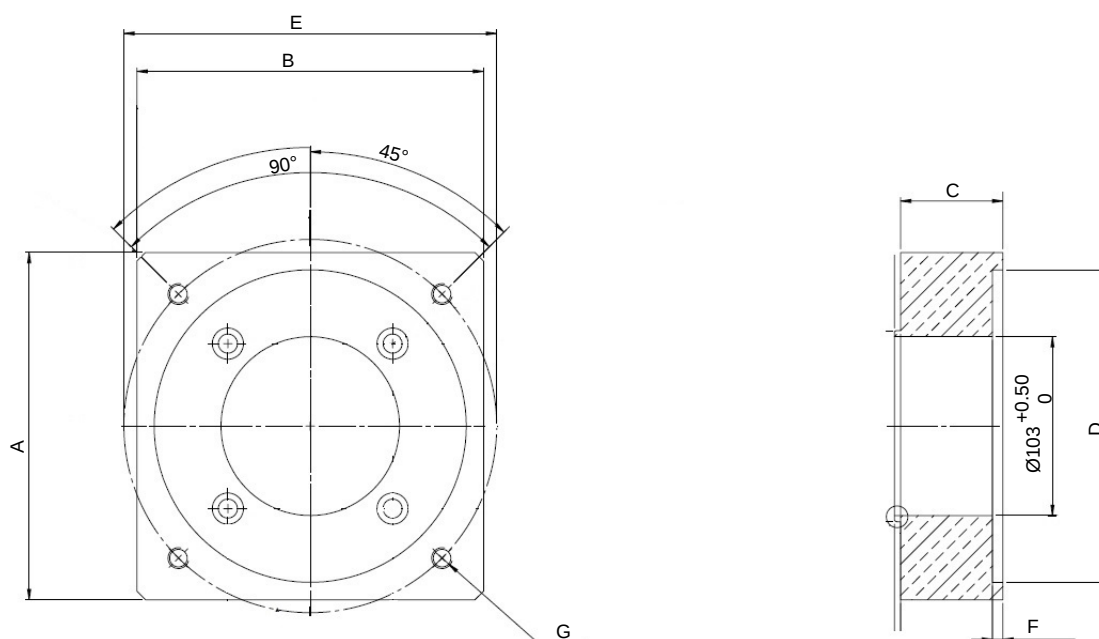


Tank module

TM070H0001A0001



Motor flange

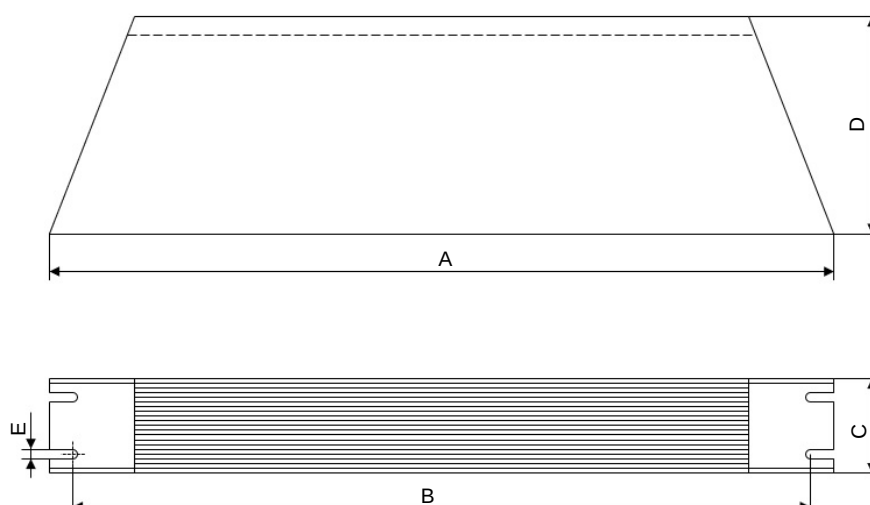


	A	B	C	D	E	F	G
A001	200 ± 0.2	200 ± 0.2	59 ± 0.2	Ø180 F8	215 ± 0.2	6 + 0.5	M12 - 24 deep
A004	160 ± 0.2	160 ± 0.2	20 ± 0.2	Ø130 F8	165 ± 0.2	4 + 0.5	M10 - 13 deep

Braking resistor

RXLG 1200W 12R (for SPM2013PHS0003A004-24), KB3355_

RXLG 2000W 7R (for SPM2019PHS0001A001-42), KB3420_

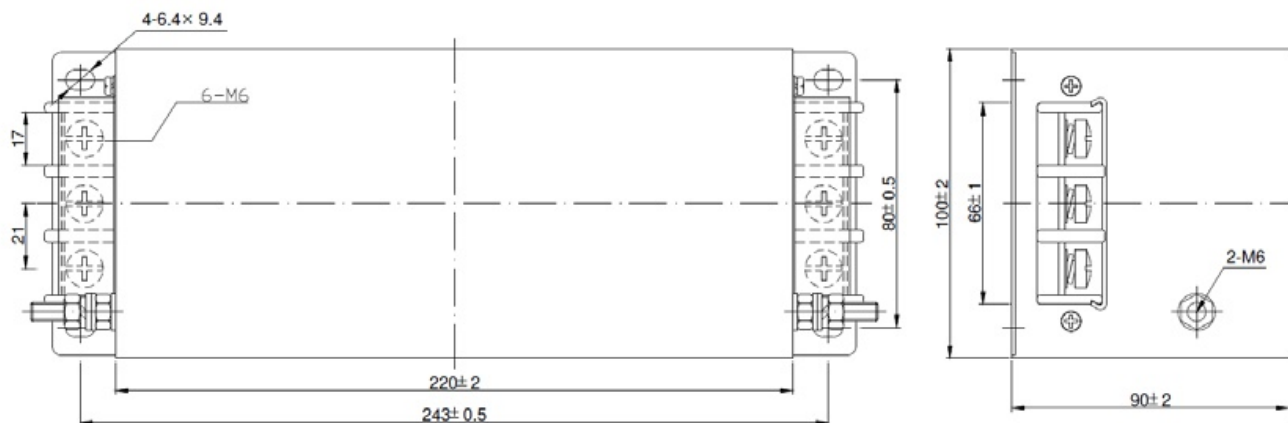


position	RXL 1200W 12R	RXL 2000W 7R
A	450 ± 1 mm	550 ± 1 mm
B	434 ± 0.5 mm	532 ± 0.5 mm
C	50 ± 0.5 mm	50 ± 0.5 mm
D	107 ± 0.5 mm	107 ± 0.5 mm
E	6.1 ± 0.3 mm	6.1 ± 0.3 mm

Line filter

DL-25EBK5/40 (for SPM2013PHS0003A004-24), KB3356_

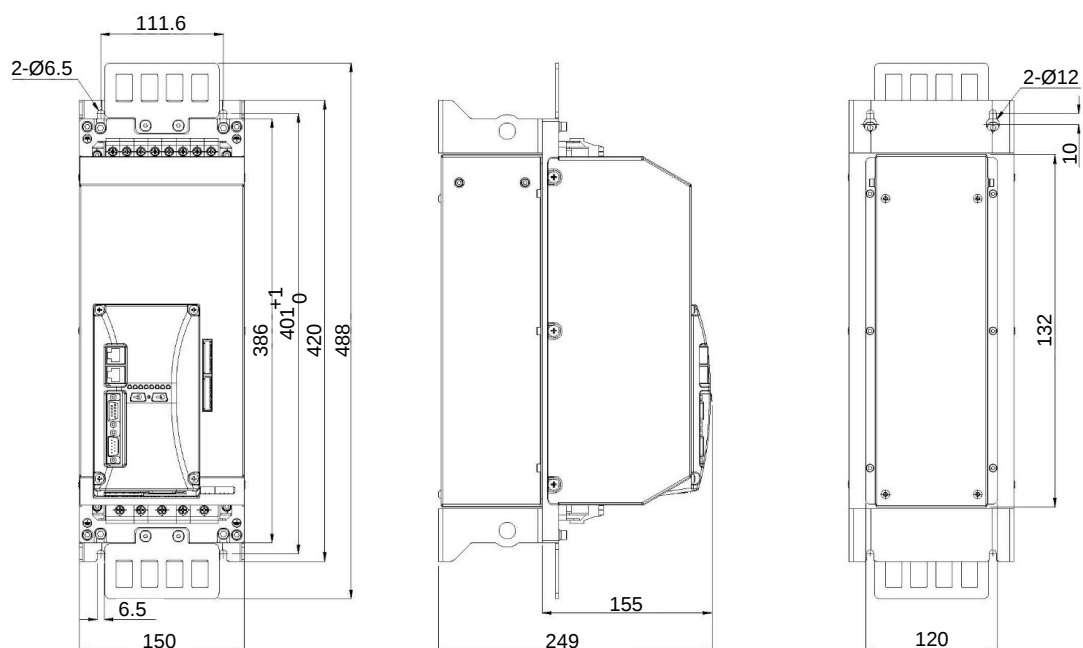
DL-35EBK5/40 (for SPM2019PHS0001A001-42), KB3421_



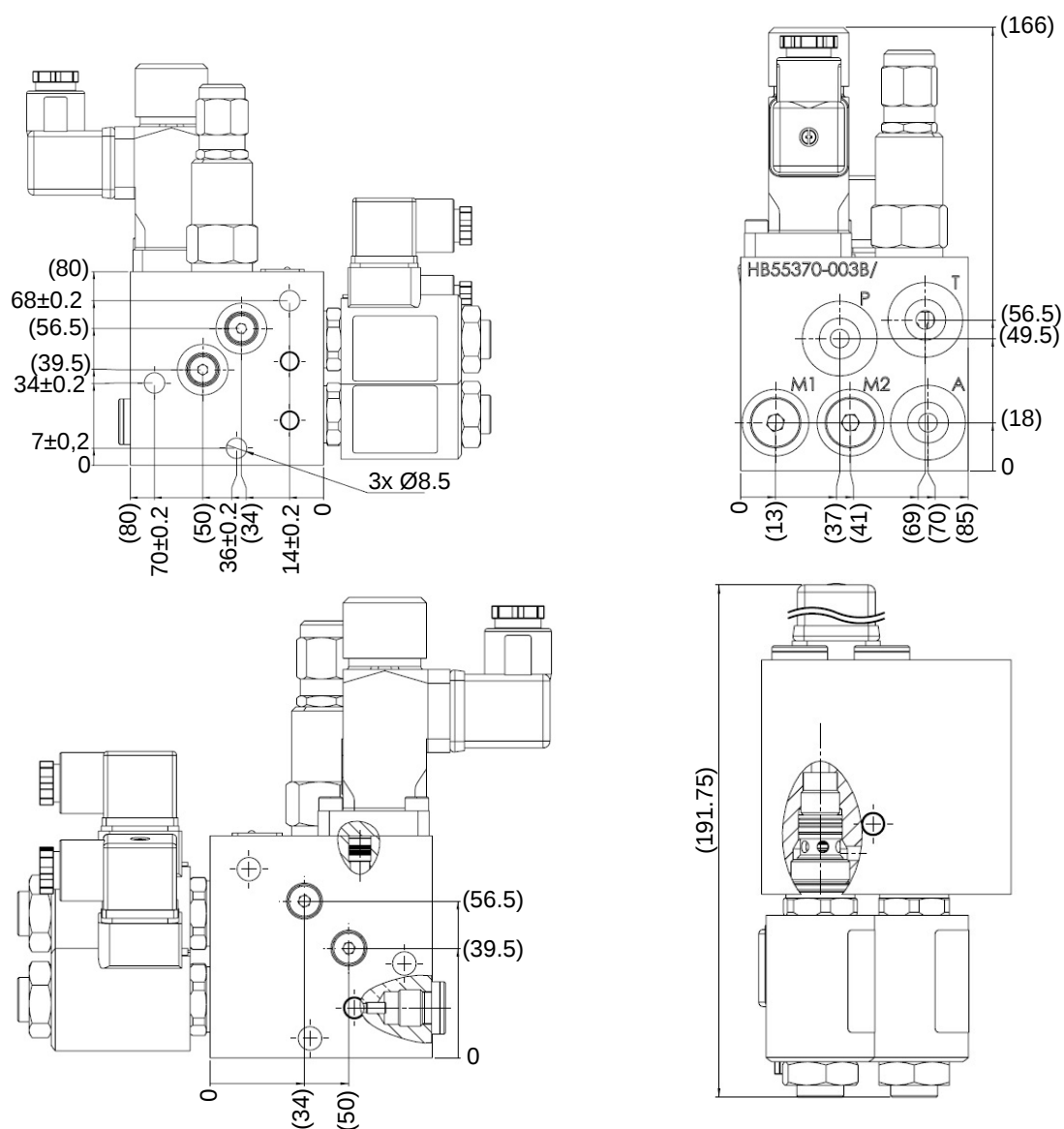
Converter

AxN 22.44.4-OPT.C.STO (for SPM2013PHS0003A004-24), KB3354_

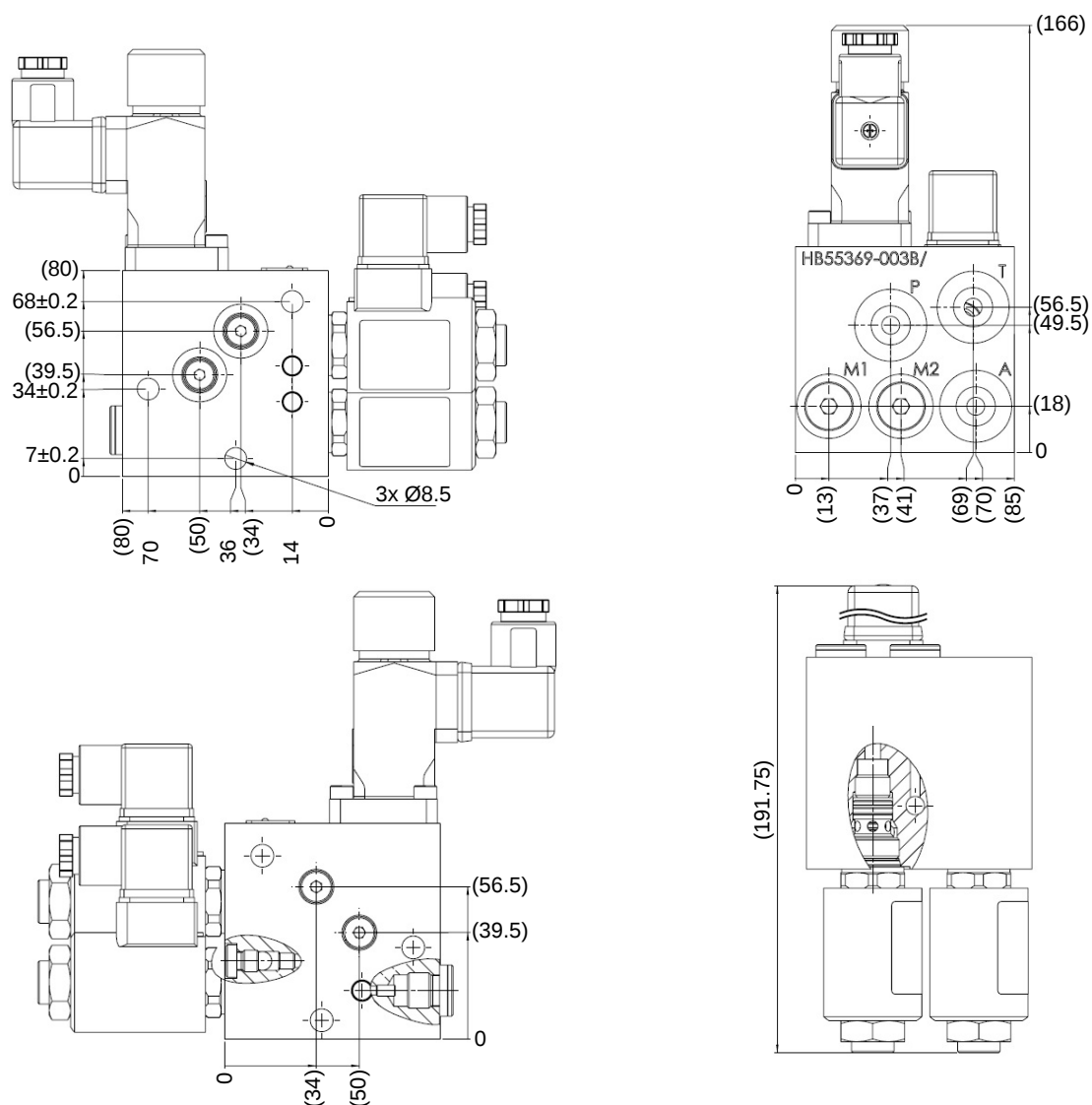
AxN 35.70.4-OPT.C.STO (for SPM2019PHS0001A001-42), KB3419_



Tool clamping with pressure control



Tool clamping without pressure control



4 Other information

4.1 Installation, operation and maintenance information



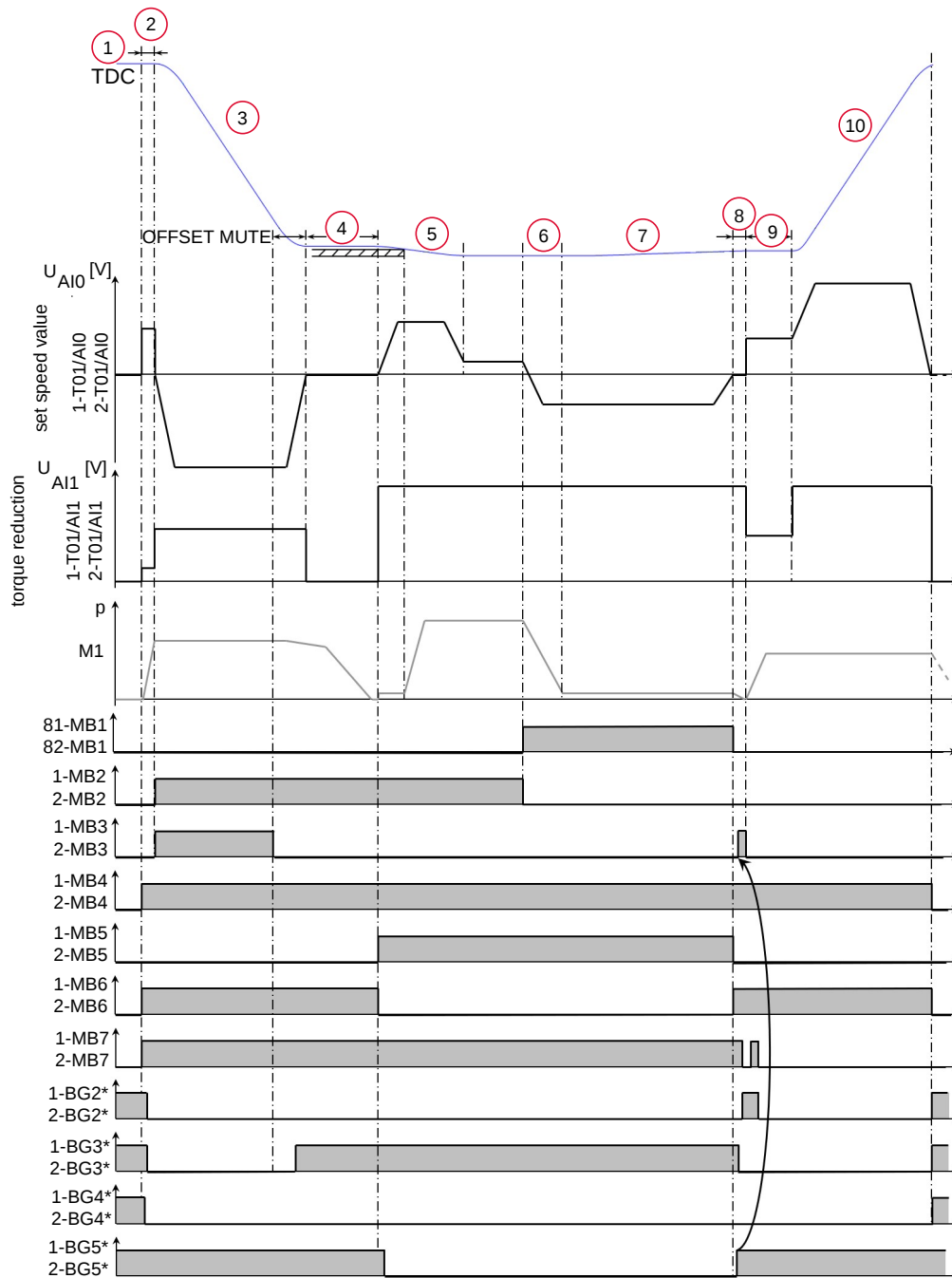
Assembly instructions ePraX modular

There are assembly instructions with operating and maintenance instructions available for this document.

- B 6323

4.2 Functional diagram

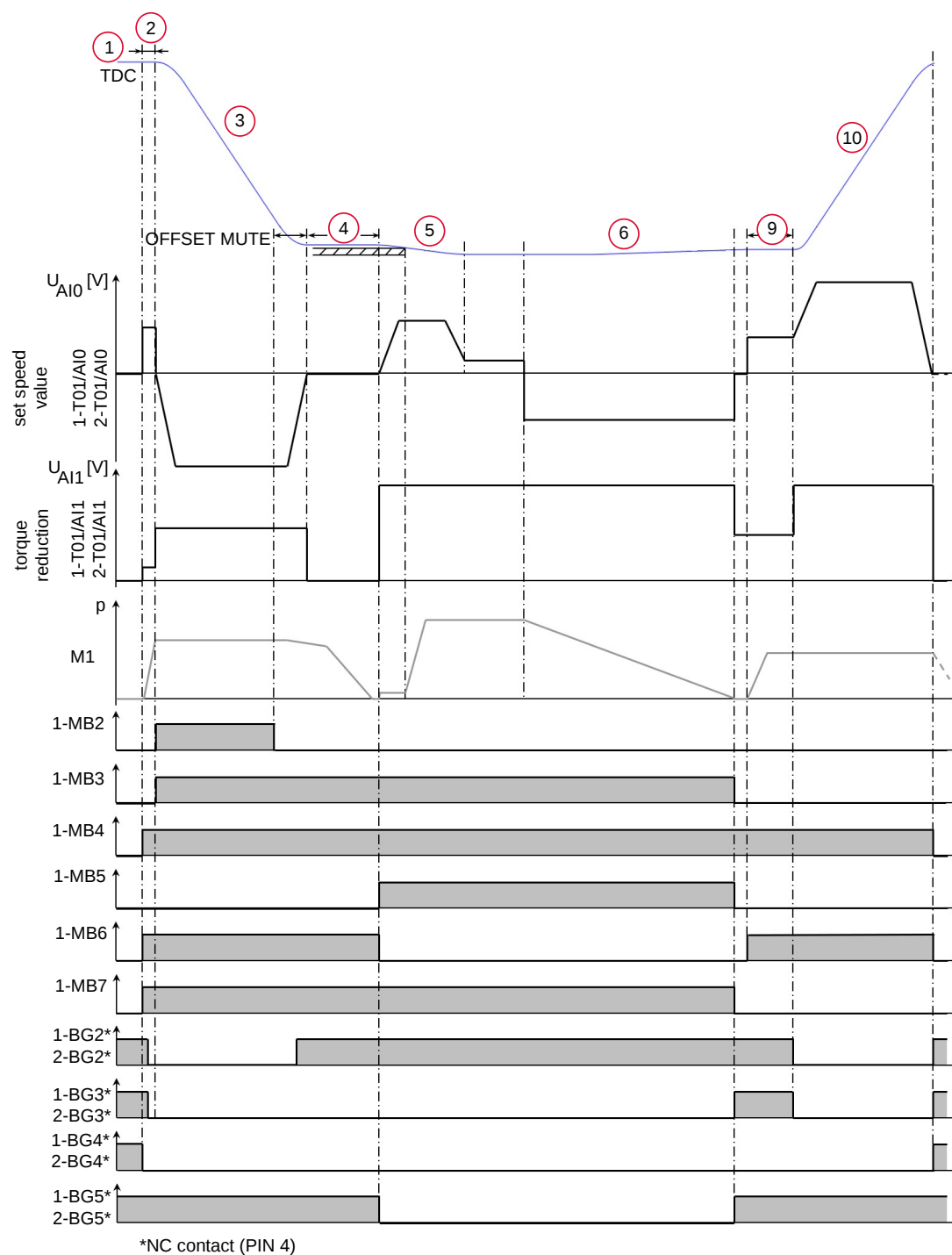
Bending cycle with Slow up option



*NC contact (PIN 4)

1	IDLE	6	DECOMPRESSION
2	PRECLOSING	7	SLOW UP
3	FAST DOWN	8	WAIT
4	MUTE	9	PREOPENING
5	WORKING SPEED	10	FAST SPEED UP

Bending cycle without Slow up option



1	IDLE	5	WORKING SPEED
2	PRECLOSING	6	DECOMPRESSION
3	FAST DOWN	9	PREOPENING
4	MUTE	10	FAST SPEED UP

