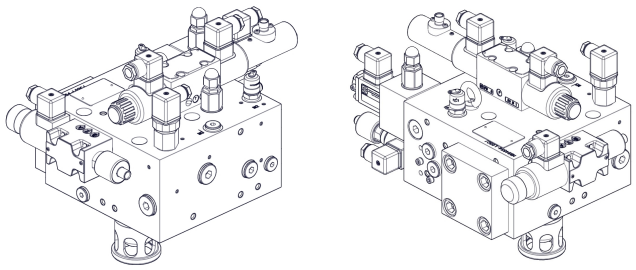
Control for CNC press brakes

ePrAX basic



Product characteristics

The hydraulic press drive consists of two cylinder blocks ePrAX® basic with integrated suction valves, which enable operation of CNC press brakes. The volume flow is controlled via proportional technology. In this way the operating speed (approaching and retreating stroke) and through pressure the required bending force can be controlled.

- consequent separation of the actuators for load-dependent control
- press forces up to 30,000 kN / volume flows up to 200 L/min per module possible
- optimal adaption to machine size through different nominal sizes
- PIH and PSH valves offer a particularly fast and precise control through the simultaneous current feed of the solenoids coils.
- The proportional directional control valves on the cylinder blocks improve the synchronous run through precise control. Their arrangement makes the system more rigid and thus leads to a high positioning accuracy.
- reduced installation effort through simplified tubing (pump block and filter are integrated)
- efficient integrated filter, perfectly aligned to the application
- Further options, such as modules for tool clamping or load sensing, are available for the press drive.

The ePrAX® basic complies with valid accident prevention regulations and is certified with type examination certificate No. 13028.

Table of Contents

Structure 2

Technical data 3

Functional diagram 4

Hydraulic schematics 5

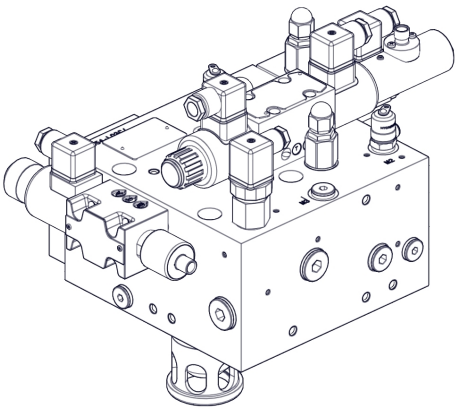
Dimensions and connections 9

Request form 14

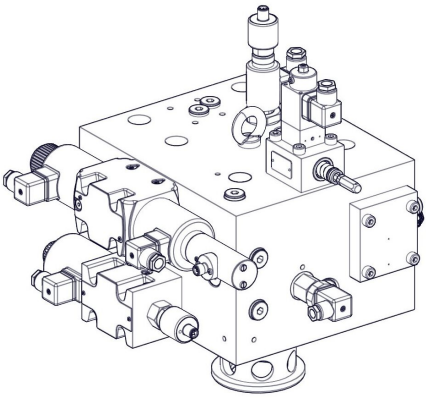
Order information 15

Structure

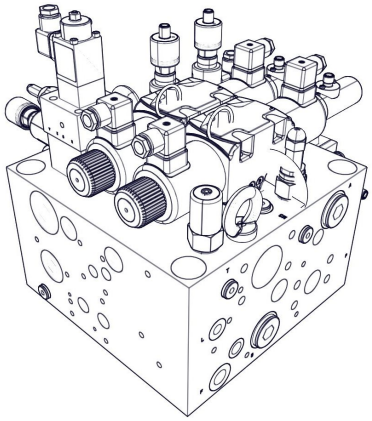
ePrAX 06



ePrAX 10

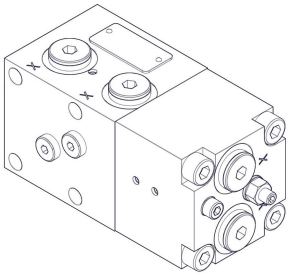


ePrAX 25



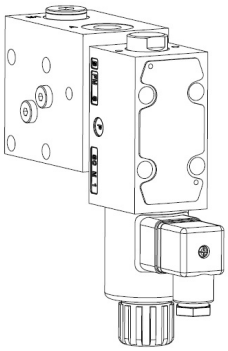
Options

load sensing
NG06/NG10



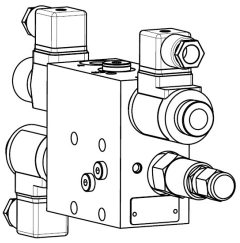
→ Pressure will be adjusted to the requirements requested by the consumer. The heating of the hydraulic fluid will be reduced and energy efficiency will be increased.

proportional hydraulic crowning
NG06/NG10/NG25



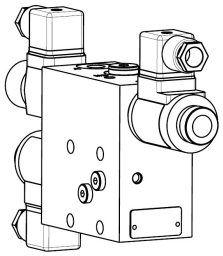
→ adapts the lower beam to the deformation of the upper beam

module for tool clamping
with pressure control



→ Clamp system for tool holder at the upper beam, which enables change and movement of tools. Pressure can be adjusted as required.

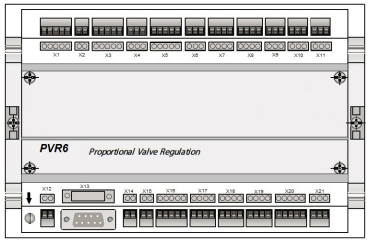
module for tool clamping
without pressure control



→ Clamp system for tool holder at the upper beam, which enables change and movement of tools.

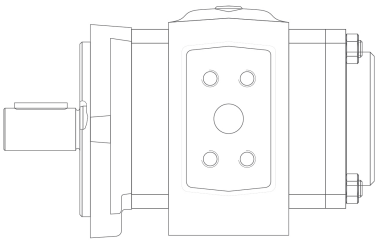
CAUTION!
While using the option crowning in combination with the option load sensing, the P port of the crowning must be connected to the P port of the load sensing module at the second cylinder block.
A balance tube between both tanks is required for the oil level.

digital amplifier PVR6



→ control of up to four proportional valves for position / pressure control via EtherCAT interface or analog ±10 V

internal gear pump HQI



→ robust industrial pump for high pressures with constant displacement volume

Technical data

General

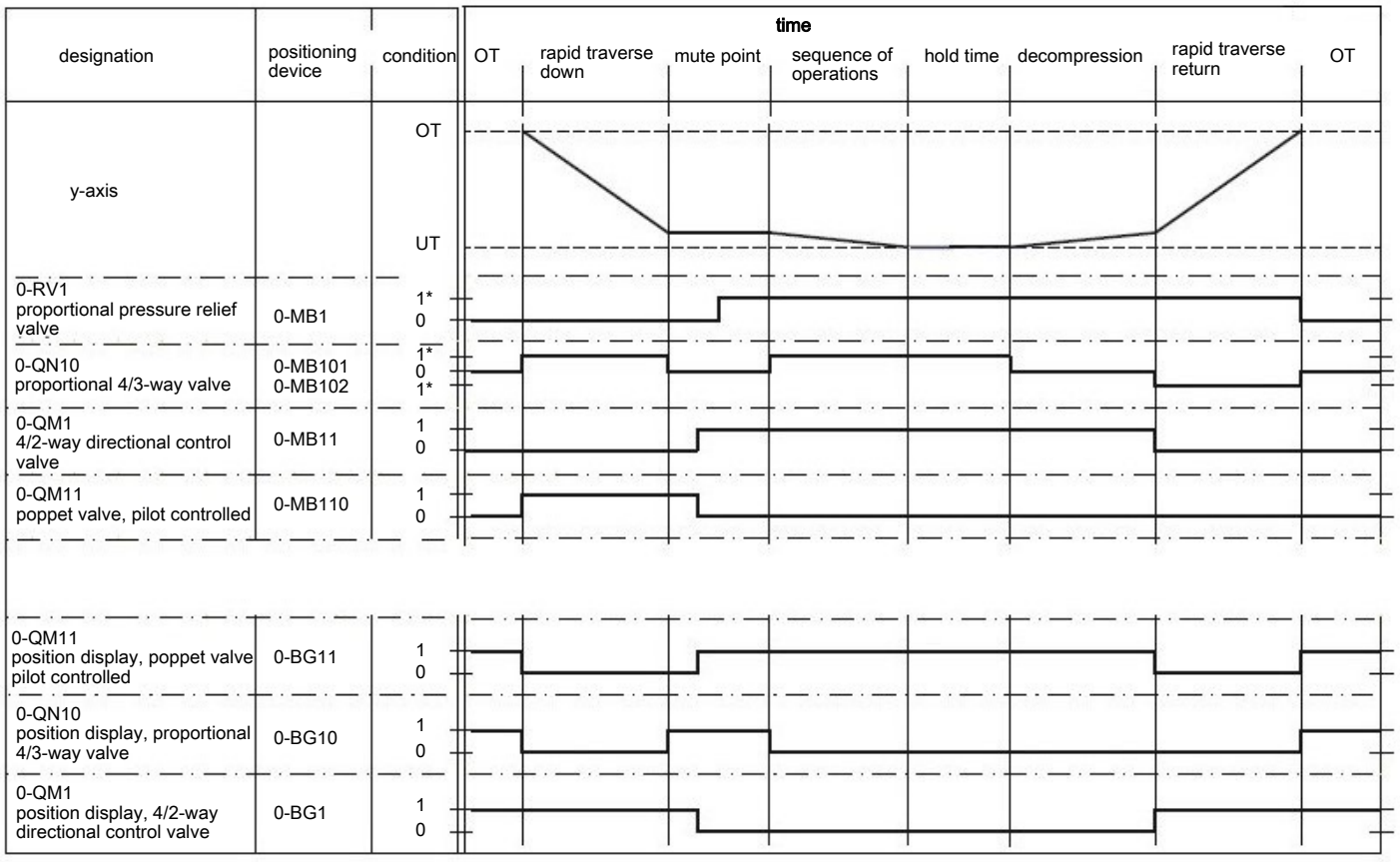
	weight [kg]	ambient temperature [°C]	mounting position	corrosion protection
EPRAXBASIC_54554 (NG06)	41	-10 to +50	arbitrary Attention: proportional directional control valves always in horizontal position	surface protected by corrosion protection fluid
EPRAXBASIC_54861 (NG10)	100			
EPRAXBASIC_54559 (NG25)				
crowning (NG06)	3.6			
crowning (NG10)	6.0			
tool clamping with pressure regulation	4.9			
tool clamping without pressure regulation	4.0			
load sensing (NG06)	3.1			
load sensing (NG10)	7.3			

Hydraulic parameters

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

operating pressure (input pressure)	hydraulic fluid temperature [°C]	viscosity [mm^2/s]	permissible degree of pollution
max. 320 bar	-10 to +70	10-600; recommended range for continuous operation: 20-100	max. 19/16/13 according ISO4406

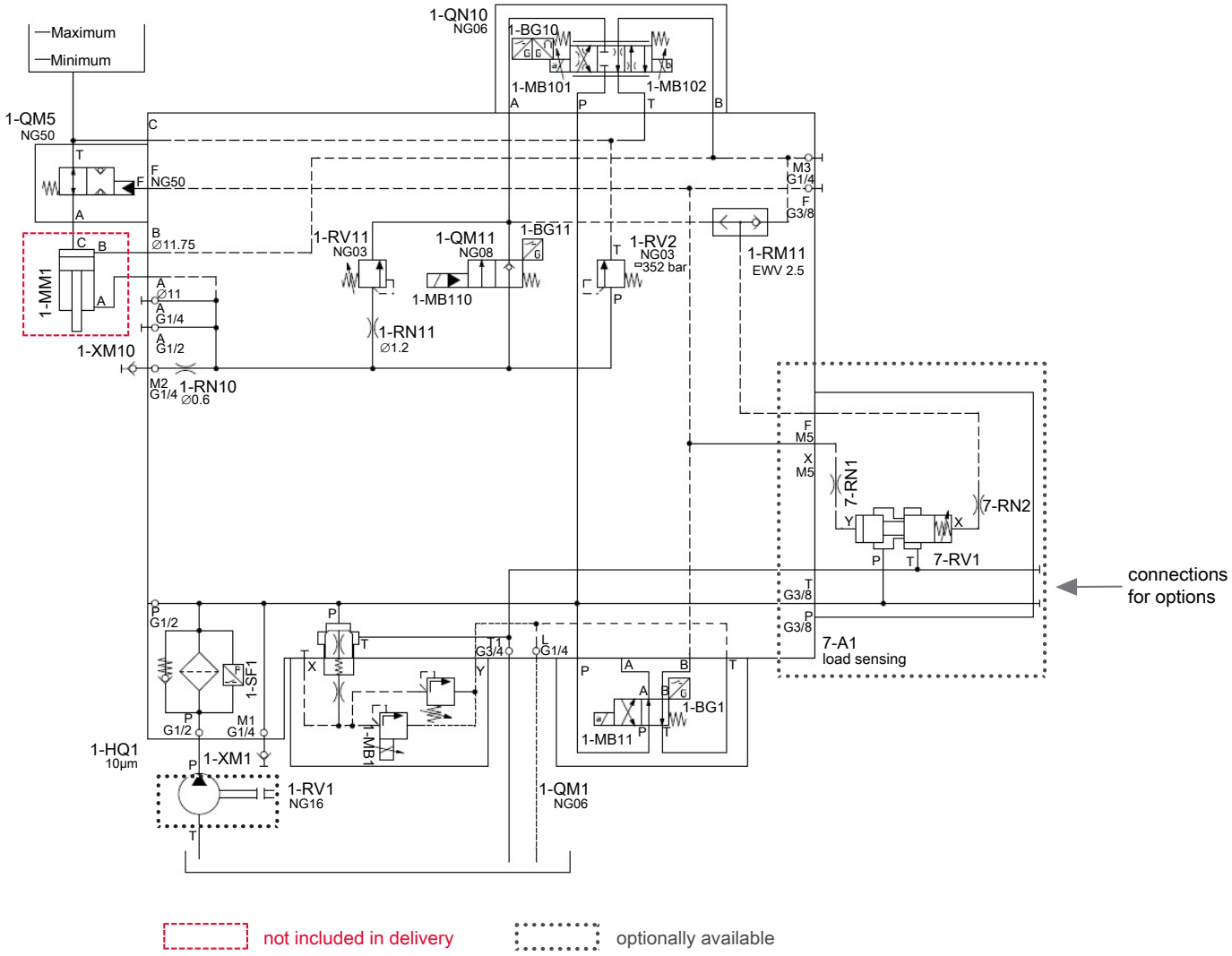
Functional diagram



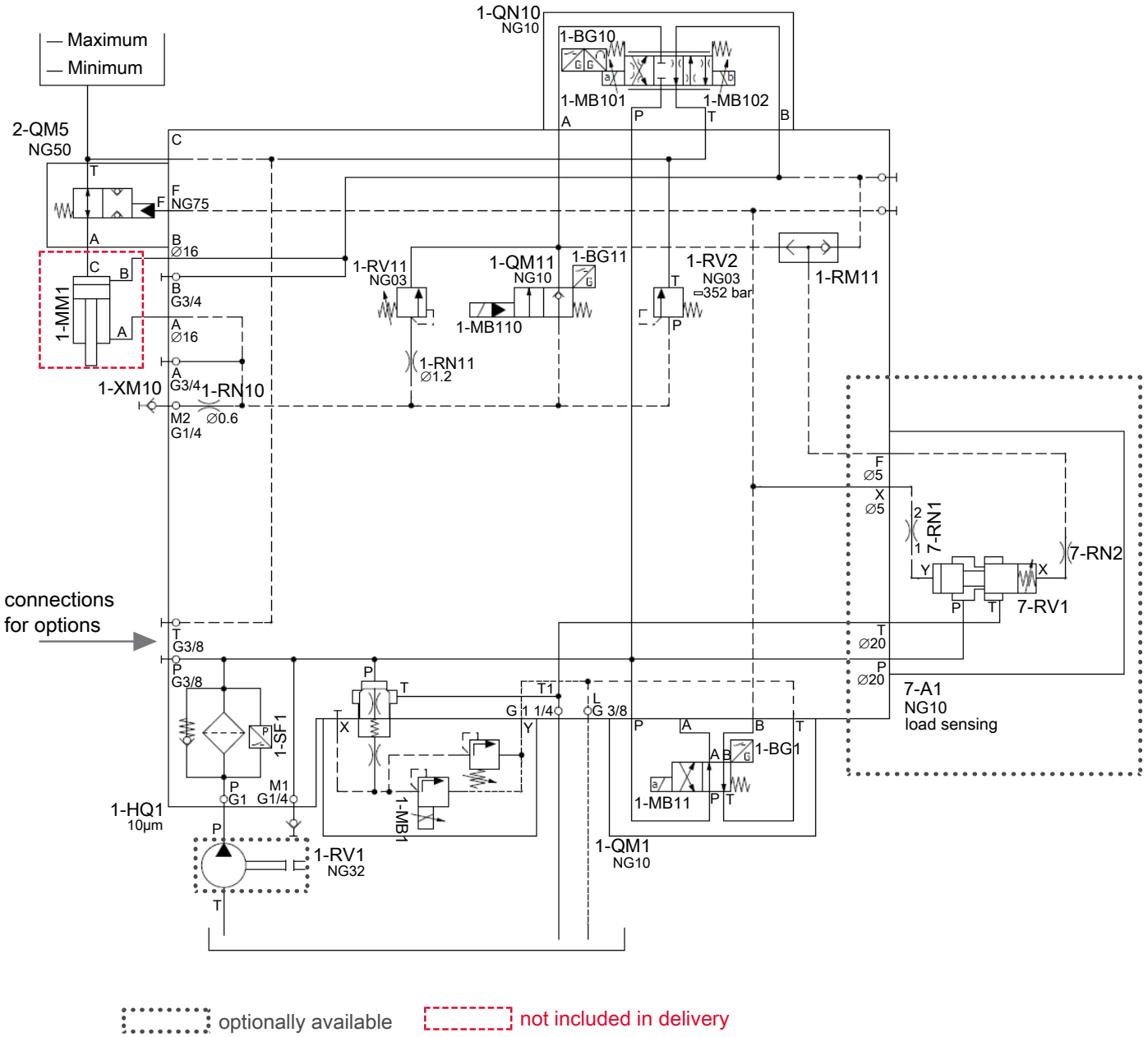
*value 1 at MB1 and MB101/MB102 is machine-dependent and dependent on control state

Hydraulic schematics

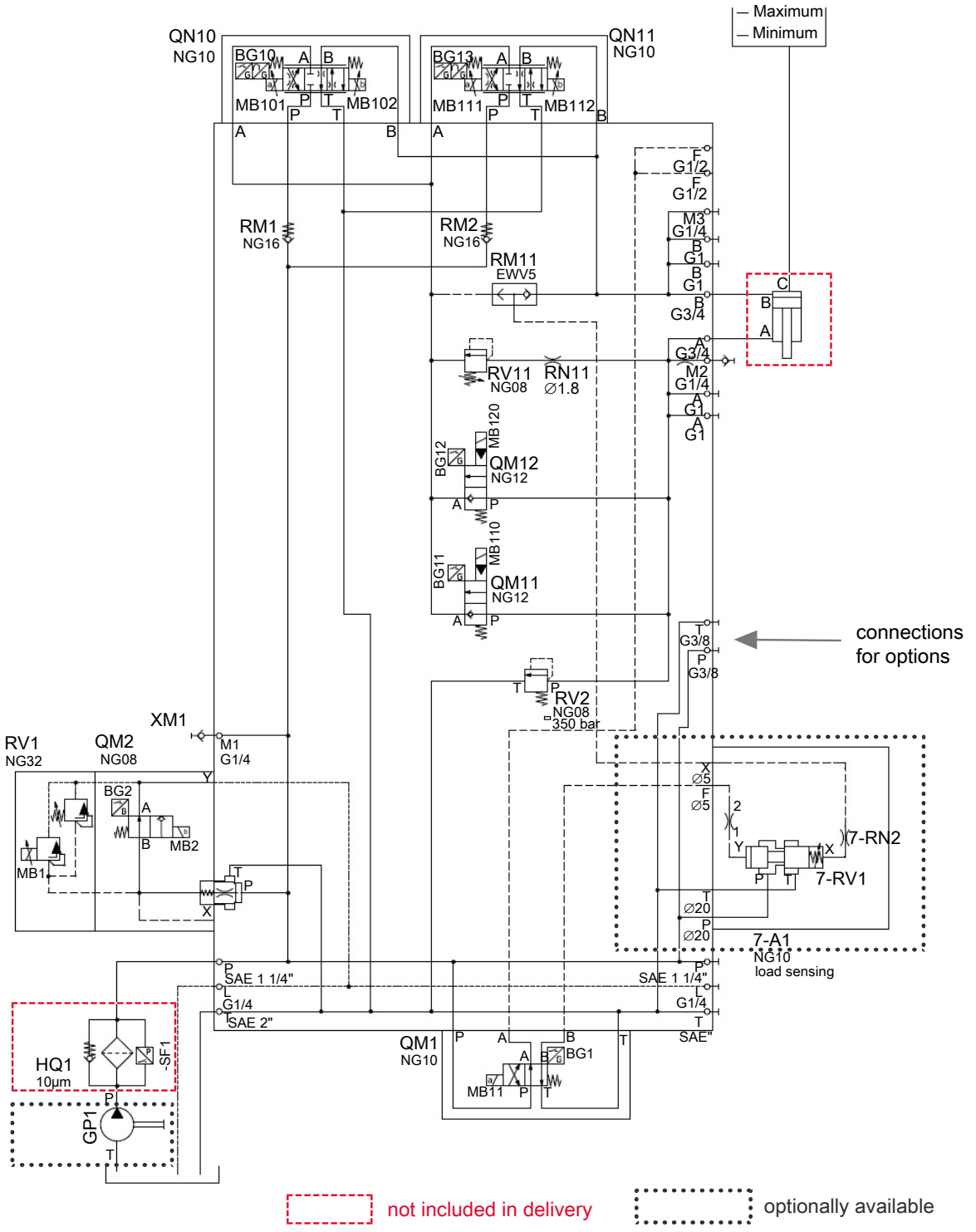
ePrAX® basic 06



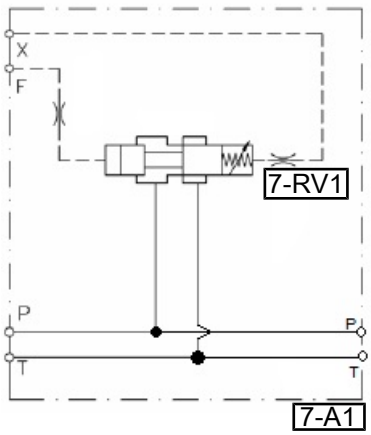
ePrAX® basic 10



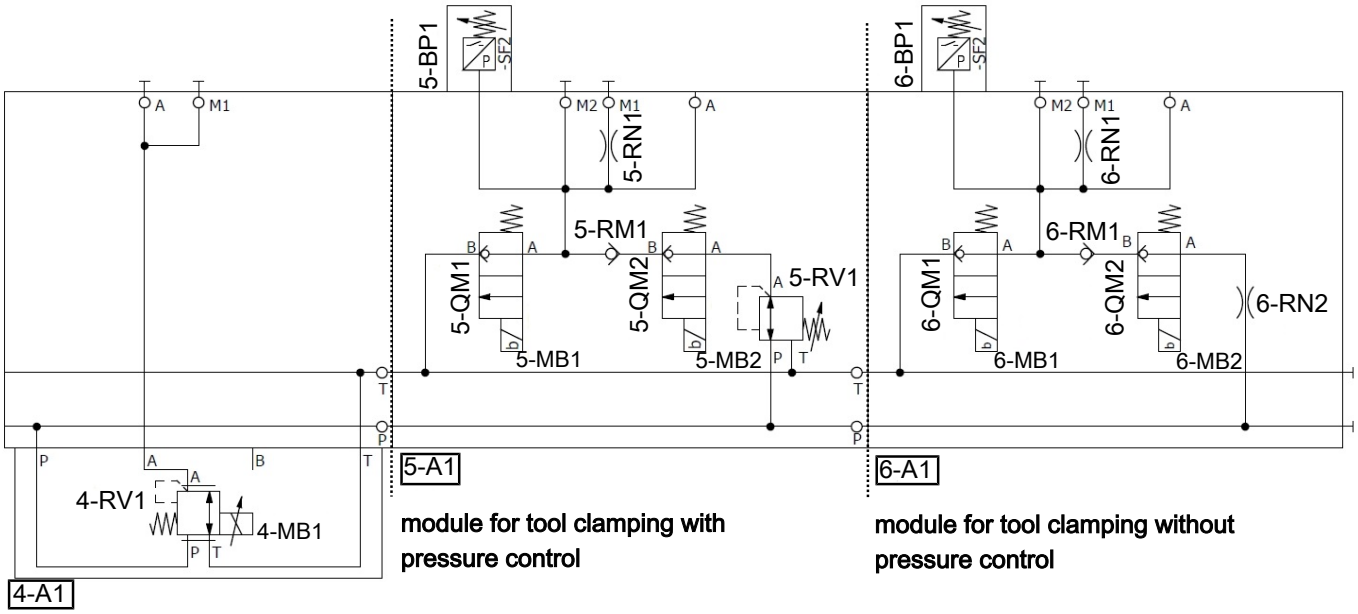
ePrAX® basic 25



Options



option: load sensing



proportional hydraulic crowning

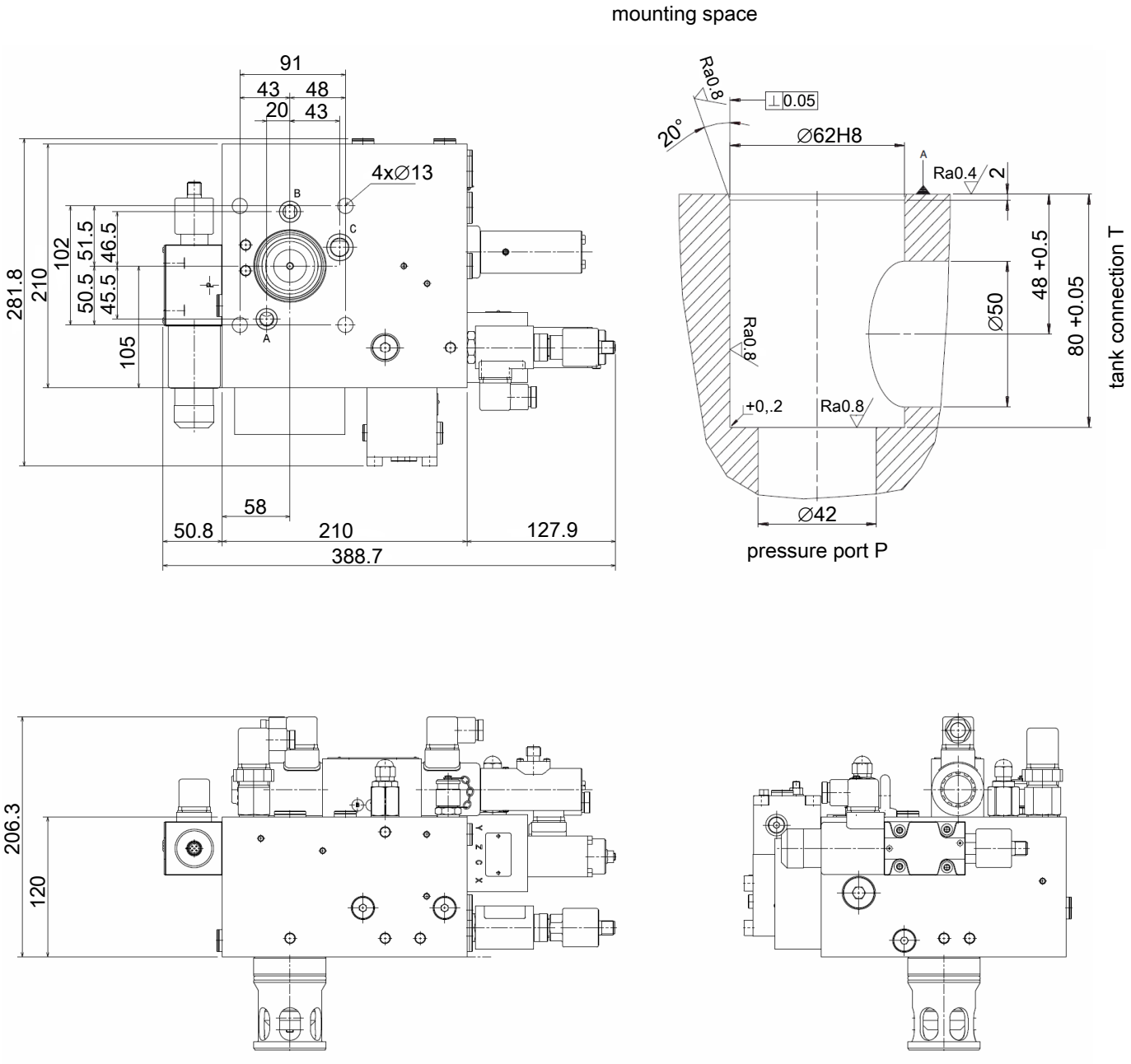
module for tool clamping with pressure control

module for tool clamping without pressure control

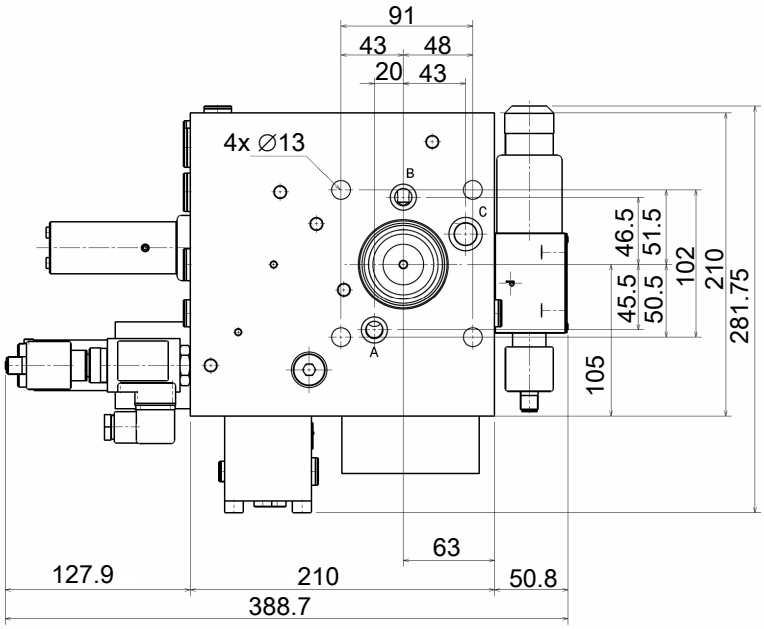
Dimensions and connections

Dimensions are given in mm.

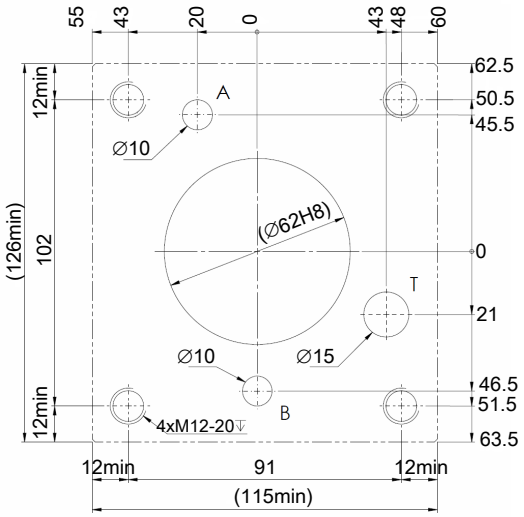
System ePrAX® basic 06, left

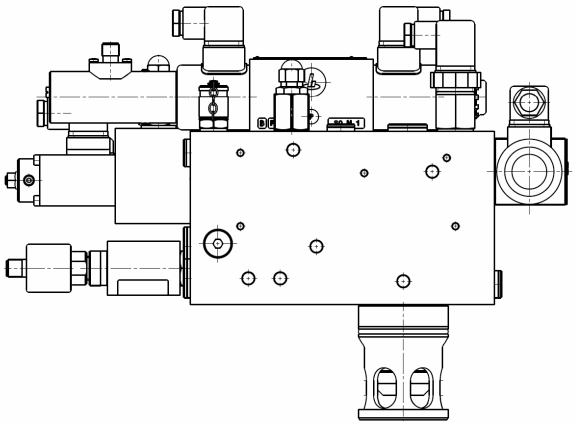


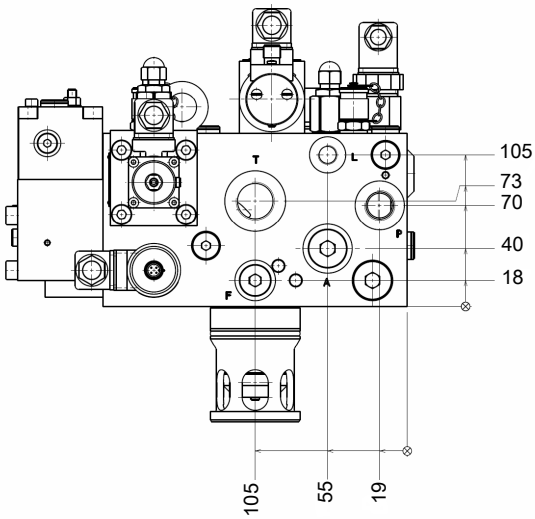
System ePrAX® basic 06, right



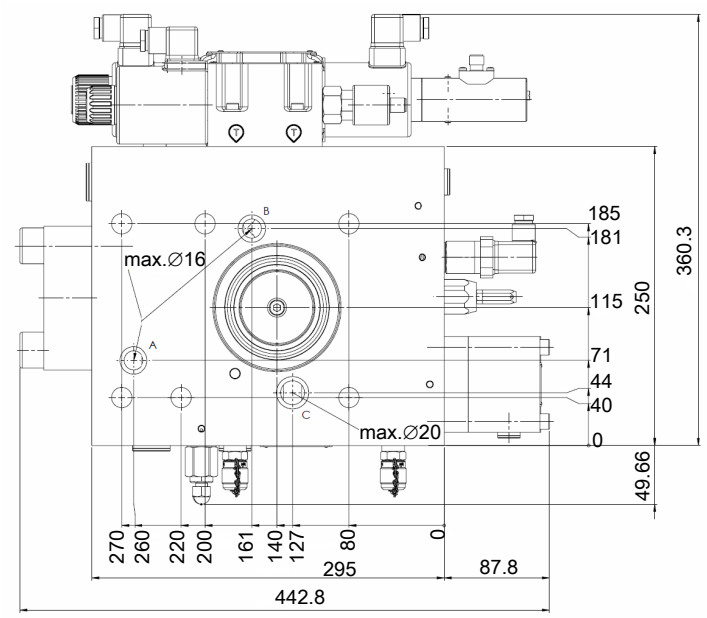
mounting flange left/right

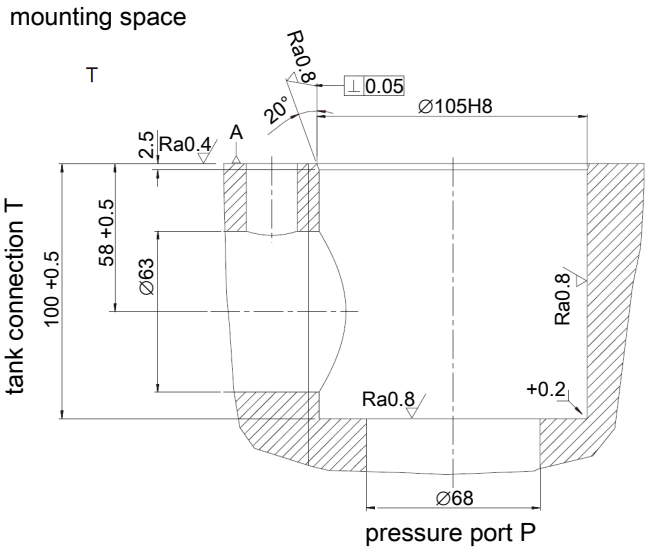


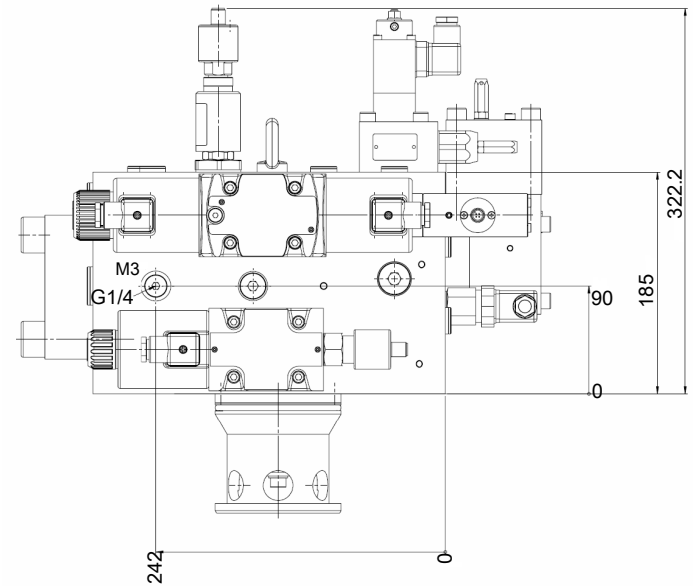


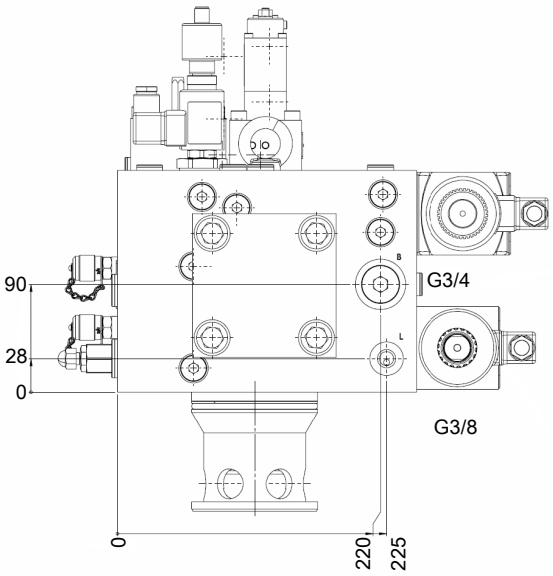


System ePrAX® basic 10, left

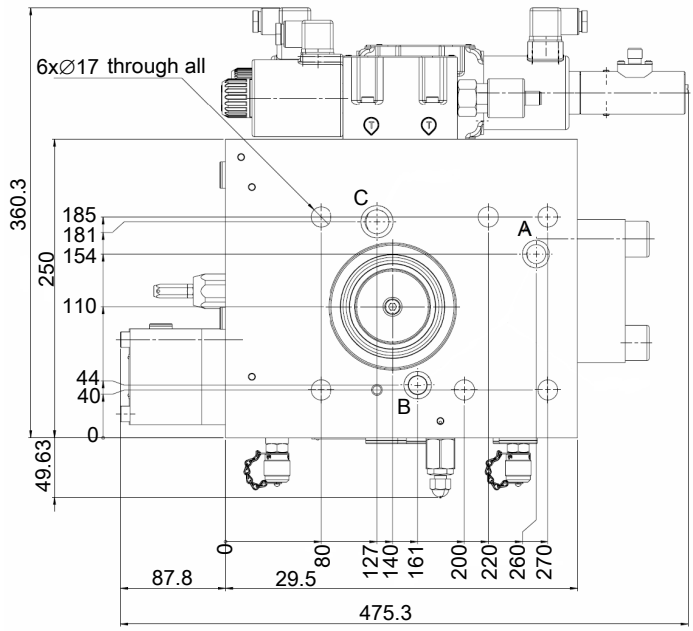


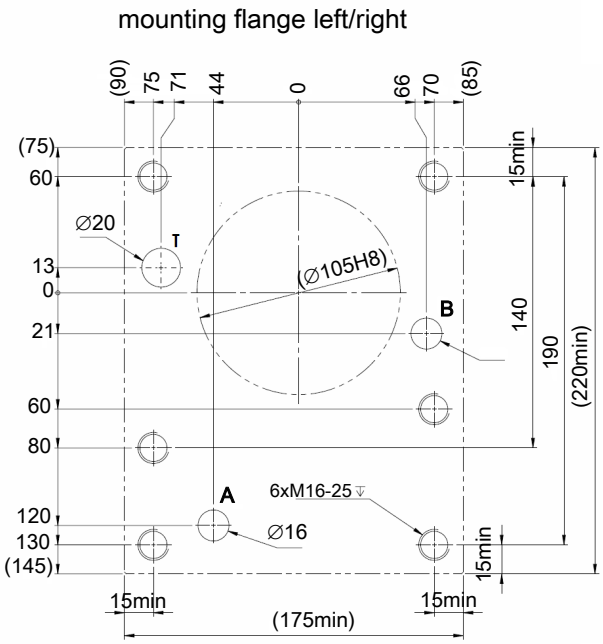


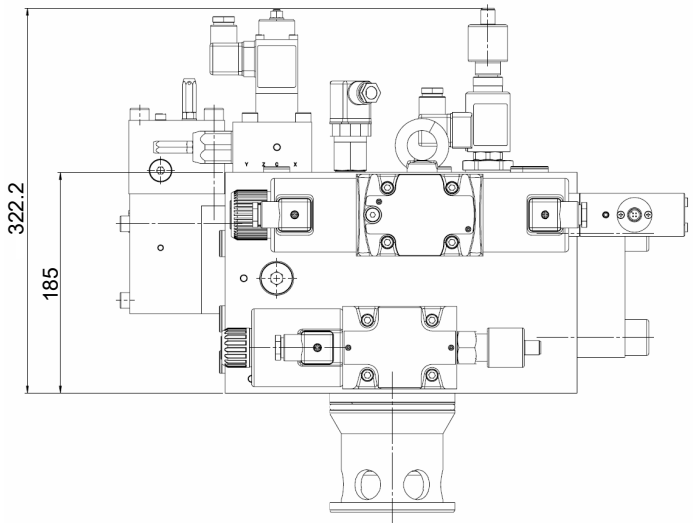


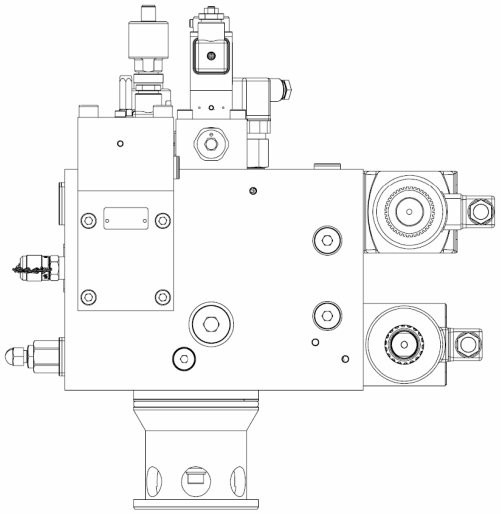


System ePrAX® basic 10, right

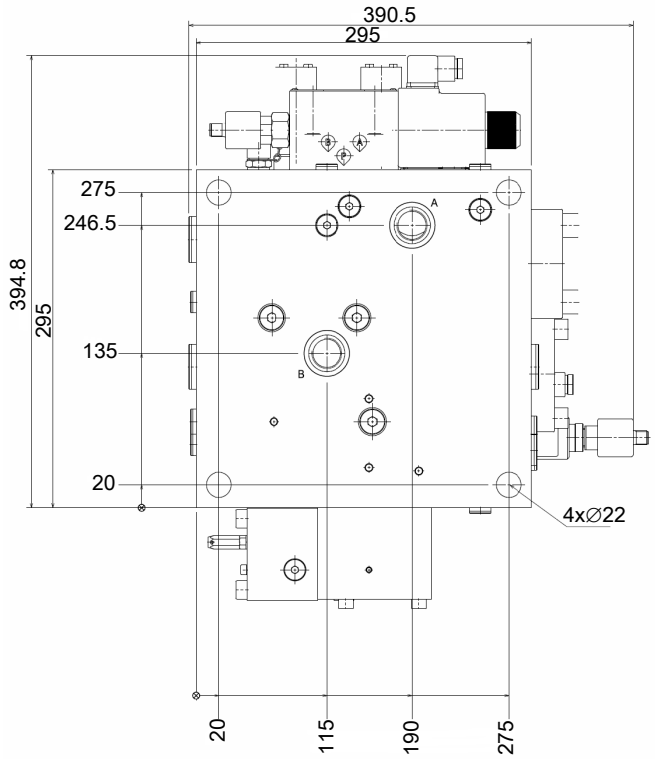


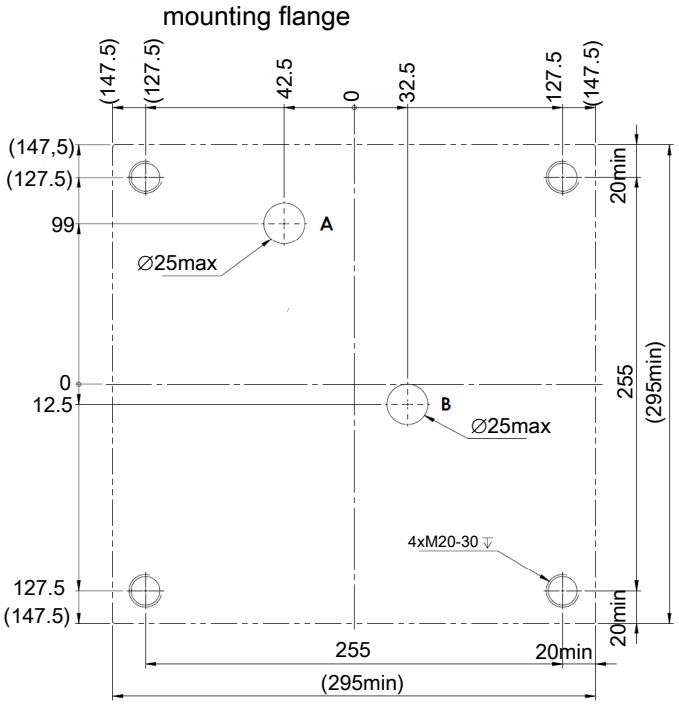


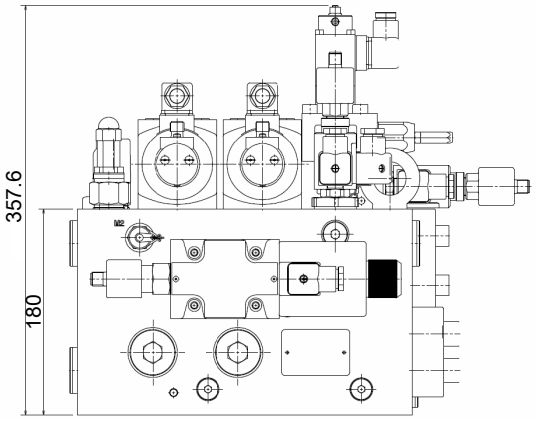


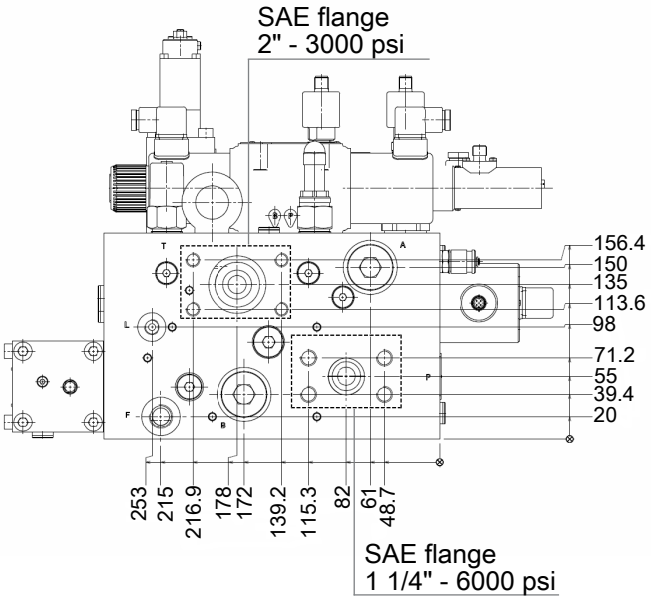


System ePrAX® basic 25









Request form

To:

HAWE

Altenstadt GmbH

Fax +49 (0)8861 221-1265

info@hawe-altenstadt.com

From: _____

Company: _____

Address: _____

Contact person: _____

Phone: _____

Fax: _____

eMail: _____

I wish to receive an offer of a press brake system for the following machine:

press force	_____ kN
piston diameter press cylinder	_____ mm
rod diameter press cylinder	_____ mm
rapid speed down	_____ mm/s
working speed	_____ mm/s
rapid speed return	_____ mm/s
beam weight including tools	_____ kg
valves position monitored (safety)	☐ yes ☐ no
options	
upper tool clamping	☐ yes ☐ no
lower tool clamping	☐ yes ☐ no
proportional hydraulic crowning	☐ yes ☐ no
load sensing	☐ yes ☐ no
suction valve	☐ installation on cylinder ☐ installation in cylinder
used CNC control	product: _____ model: _____
demand	_____ systems / year

Order information

Type code

ePrAX® basic

ordering example

PRESS ACT_	EPRAX BASIC	54554	S	I	06	B	18	X	X					S...	A1

system

EPRAX BASIC	hybrid system

number of basic block

54554	NG06
55861	NG10
54559	NG25

position monitoring of valves

S* monitored are: the 2/2-way poppet valve, the 4/2-way directional control valve, the proportional directional control valve according to BG requirements

__ no monitoring

type of proportional directional control valves

I PIL proportional directional control valve with transducer and middle position signal
R PRL proportional directional control valve with transducer
S PSL proportional directional control valve without transducer
Q PSH proportional directional control valve without transducer
H* PIH proportional directional control valve with transducer and middle position signal

middle position signal...required for safety
transducer...faster positioning, dynamics

size of proportional directional control valves

06 PC06
10 PC10
25 2 x PC10

piston type of proportional directional control valves

A symbol 500 (PIL, PRL, PSL)
B* standard symbol 400 (PIL, PRL, PSL); 430 (PSH, PIH)

serial identification

(A) letter	interchangeability ensured
(1) number	interchangeability only partly ensured

special design

S...

options

X	without option
D	load sensing
B	crowning (NG06)
K	tool clamping without pressure control valve
R	tool clamping with pressure control valve (< 80 bar)
L	tool clamping with pressure control valve (< 170 bar)

design prefill valves NSV

W without prefill valve
X* standard prefill valve, type NO (NG50 for ePrAX basic 06, NG75 for ePrAX basic 10)
Z without prefill valve, type NC

volume flow

L/min nominal flow of the installed proportional directional control valves)

*preferred option

ordering example

	PVR	600	5	H	B	30	6	R	K	

model
600 Standard
601 EtherCAT

control
5 multi-valve

installation
H mounting rail according to DIN 50022

final stage
B quick de-energizing

filter
K no filter

function
R ramp

control
6 6 solenoids

output current
30 3000 mA Imax

accessories
socket board KC3832

ordering example

	HQI	2	-	025	R	K	0	3	-10	S122	

type

HQI internal gear pump in segment design

size

2 size 2

displacement volume and weight

004	4.2		4.9	
005	5.4		4.9	
006	6.4		5.0	
008	7.9		5.2	
011	10.9		5.4	
013	13.3	cm³/U	5.5	kg
016	15.8		5.7	
019	19.3		7.4	
022	22.2		7.8	
025	25.2		8.0	

rotation direction

R right

design

S122 pressure port and suction port radial

S122/2..* pressure port radial; common suction port radial

* For double pump versions the type repeats itself following the size.

suction and pressure port

3 SAE flange
6 enlarged suction port for speed controlled drive applications
0 suction side closed, common suction

fastening flange

0 SAE-A2 flange

shaft end

K cylindrical (with cone)
P cone toothing (only for further multiple pump)

HQI3

ordering example

HQI	3	-	040	R	K	2	3	-10	S122

type

HQI internal gear pump in segment design

size

3 size 3

displacement and weight

014	14.6		9.4	
016	16.0		10.1	
020	20.0		10.5	
025	24.8		11.2	
032	32.1	cm³/U	12.0	kg
040	40.1		15.0	
050	50.3		17.0	
064	64.6		18.0	

rotation

R right

drive shaft

K cylindrical (with cone)
P cone toothing (only for further multiple pump)

design

S122 pressure port and inlet port radial

S122/3..* pressure port radial; common radial suction port

* For double pump versions the type repeats itself following the size.

suction port and pressure port

3 SAE flange
6 enlarged suction port for speed controlled drive applications
0 suction side closed, common suction

mounting flange

2 SAE-B-2 flange

HQI6

ordering example

HQI	6	-	080	R	K	2	3	-10	S122

type

HQI internal gear pump in segment design

size

6 size 6

displacement and weight

040	40.8		31	
050	50.6		32	
064	65.3		34	
080	80.0		36	
100	101.2	cm³/U	39	kg
125	125.7		42	
160	160.1		46	
200	200.9		51	
250	249.9		58	

rotation

R right

shaft end

K cylindrical (with cone)
P cone toothing (only for further multiple pump)

design

S122 pressure port and suction port radial

S122/3..* pressure port radial; common radial suction port

* For double pump versions the type repeats itself following the size.

suction port and pressure port

3 SAE flange
6 enlarged suction port for speed controlled drive applications
0 suction side closed, common suction

mounting flange

2 SAE-D-2 flange