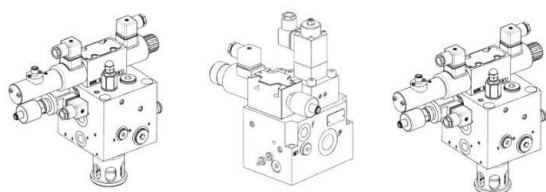


Control for CNC press brakes type SAMB, SAPB

operating pressure p_{\max} 320 bar
 volume flow V_{\max} 100 L/min



Product characteristics

The hydraulic press drive type SAMB consists of two cylinder blocks including suction valves and either one pump block SAPB or one pump module SPLM consisting of pump, filter, coupling, and motor flange.

The valves for control and lifting as well as the suction valves are located directly at the cylinder bottom. The proportional pressure setting and the control of the suction valves are realized via the centrally arranged pump block or module.

Features and benefits:

- press forces up to 10,000 kN possible
- optimal adaption to machine size through different nominal sizes
- PIH and POH 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.
- options: modules for tool clamping, load sensing, or proportional hydraulic crowning
- system complies with valid accident prevention regulations
- certified with type examination certificate No. 13028
- low noise level due to asymmetrical cast iron pump housing
- double pumps available

Intended applications:

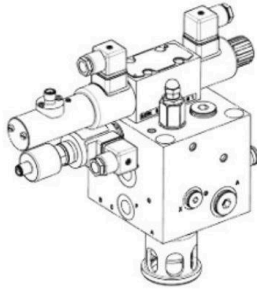
- press brakes

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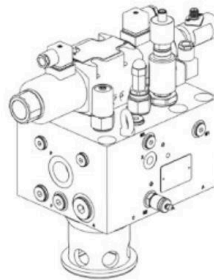
Structure.....	2
Technical data.....	4
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Structure

cylinder block
SAMB



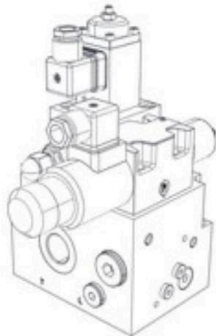
NG06



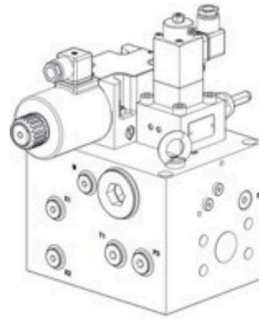
NG10

Valves for control and holding as well as the suction valves are directly attached to the bottom of the cylinder.

pump block
SAPB



NG06



NG10

Proportional pressure adjustment and control of the suction valves are realized by the central pump block.

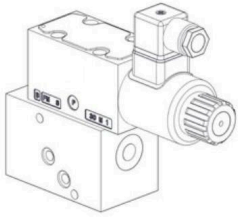
Designs

SAMB (per cylinder)

SAMB (per cylinder)			SAPB	
type	Q_{max}	Q_{max} suction valves	type	Q_{max}
SAMB 53418_06_(NG06)	30.0 L/min	350 L/min	SAPB 51092080_(NG06)	80.0 L/min
SAMB 51721_10_(NG10)	100.0 L/min	550 L/min	SAPB 51092080_(NG06)	80.0 L/min
			SAPB 51790200_(NG10)	200.0 L/min

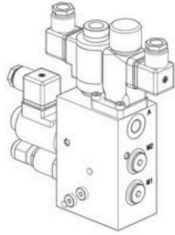
Options

proportional hydraulic crowning



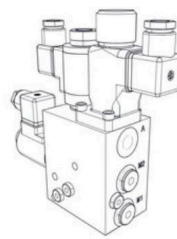
→ adapts the lower beam to the deformation of the upper beam

module for tool clamping with pressure control



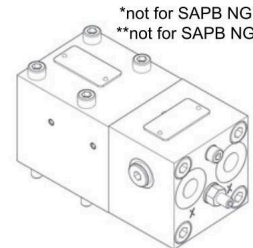
→ Clamp system for tool holder at the upper beam, which enables change and movement of tools. Pressure can be adjusted as required.

module for tool clamping without pressure control



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

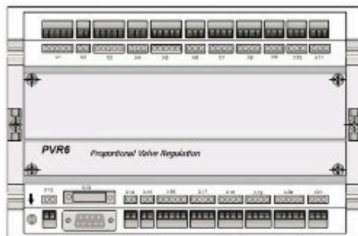
Load sensing NG06* & NG10**



*not for SAPB NG10
**not for SAPB NG08

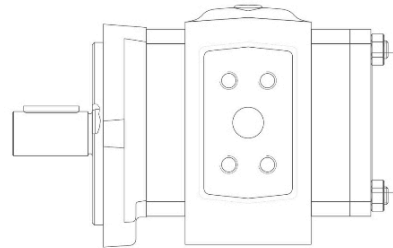
→ Pressure will be adjusted to the requirements requested by the consumer. The heating of the hydraulic fluid will be reduced and energy

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

See the respective data sheets of the product for further information.

Technical data

General

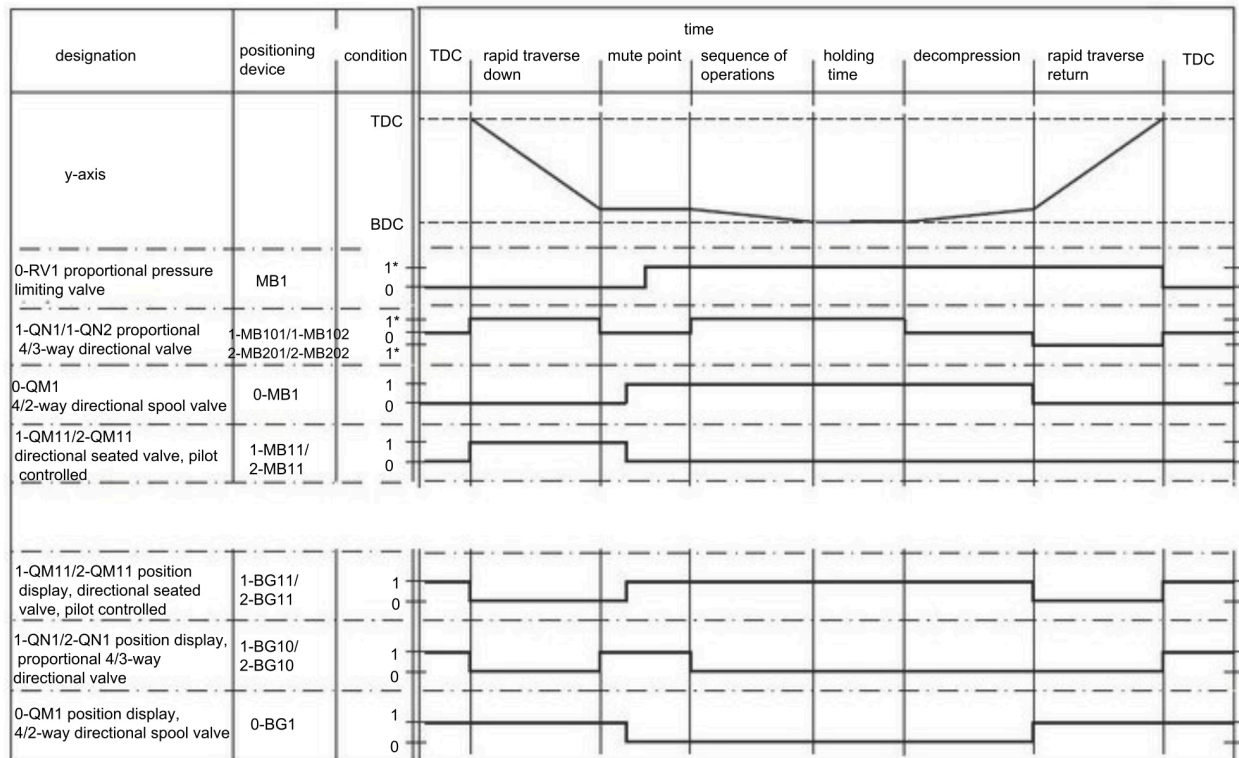
weight	SAMB53418_06_ (NG06):	14.7 kg
	SAMB51721_10_ (NG10):	41.0 kg
	SAPB51092080_(NG06):	12.9 kg
	SAPB51790200_(NG10):	38.0 kg
	prop. crowning (NG06):	3.6 kg
	prop. crowning (NG10):	6.0 kg
	tool clamping with pressure control:	4.9 kg
	tool clamping without pressure control:	4.0 kg
	load sensing (NG06):	3.1 kg
	load sensing (NG10):	7.3 kg
ambient temperature	-10 to +50 °C	
mounting position	arbitrary; Attention: proportional directional valves always in horizontal position	
corrosion protection	SAMB:	surface chemically nickel plated
	SAPB NG06:	surface chemically nickel plated
	SAPB NG10:	surface protected by corrosion protection fluid

Hydraulic parameters

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

max. operating pressure (initial pressure)	320 bar
hydraulic fluid temperature	-10 to +70 °C
viscosity	10-600 mm ² /s; recommended range for continuous operation: 20-100 mm ² /s
permissible degree of pollution	max. class 19/16/13 according ISO 4406

Functional diagram

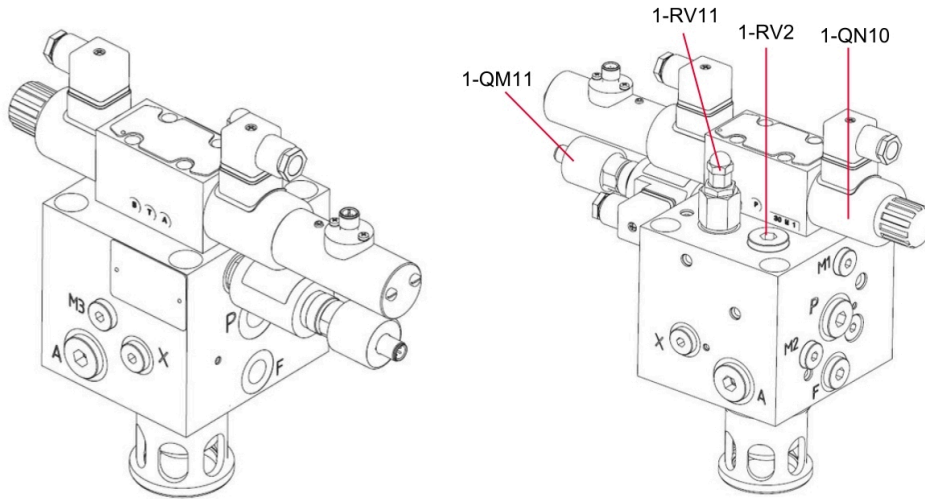


*value 1 at MB1, 1-MB101/1-MB102, and 2-MB201/2-MB202 is dependent on machine and control state

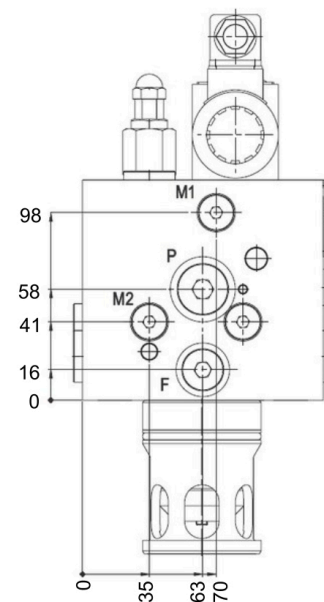
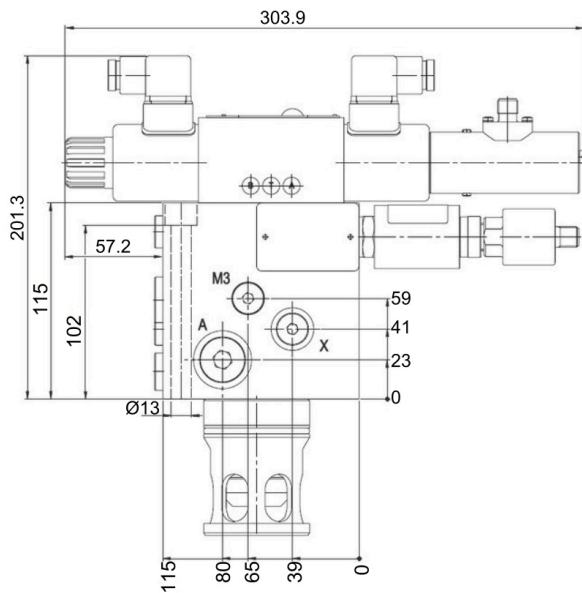
Dimensions and connections

Dimensions are given in mm.

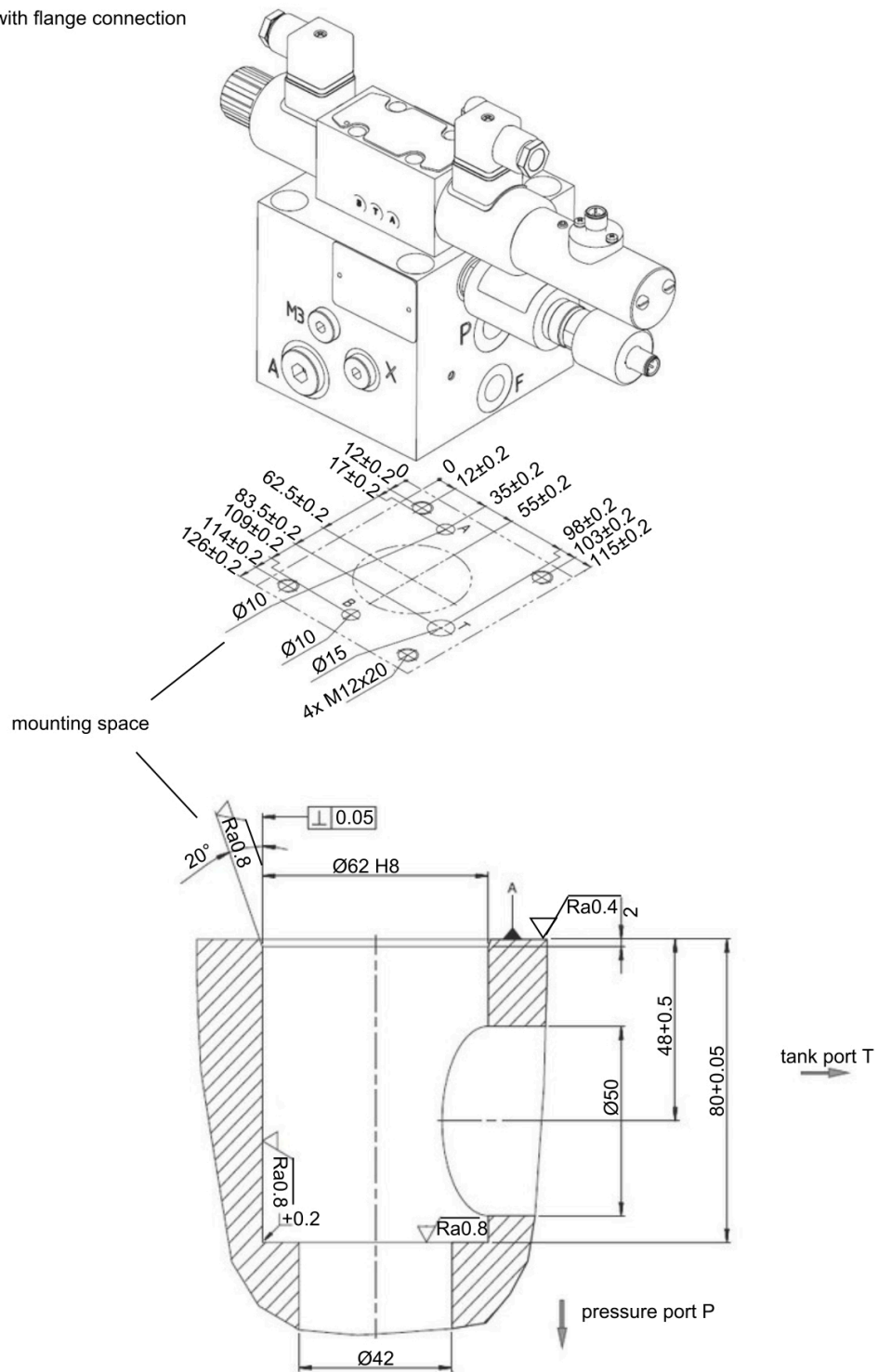
Cylinder block SAMB NG06



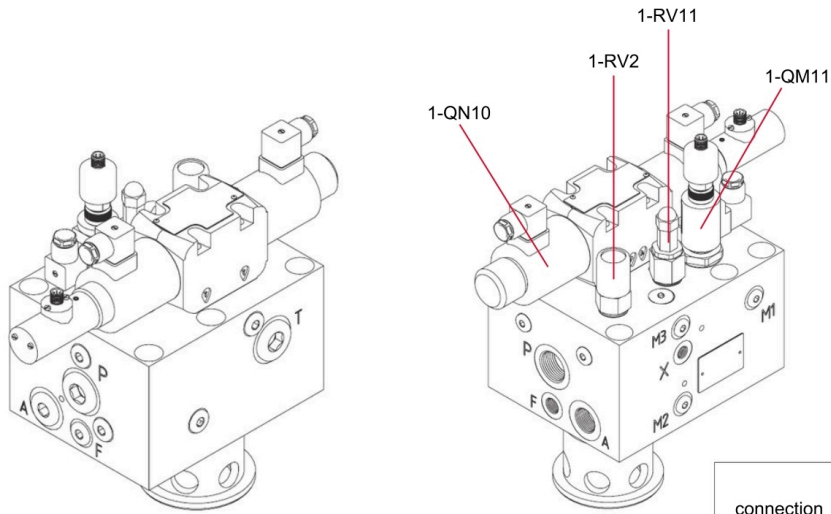
connection	size	tightening torque
A, P	G1/2	90 Nm
F	G3/8	55 Nm
X, M1, M2, M3	G1/4	33 Nm



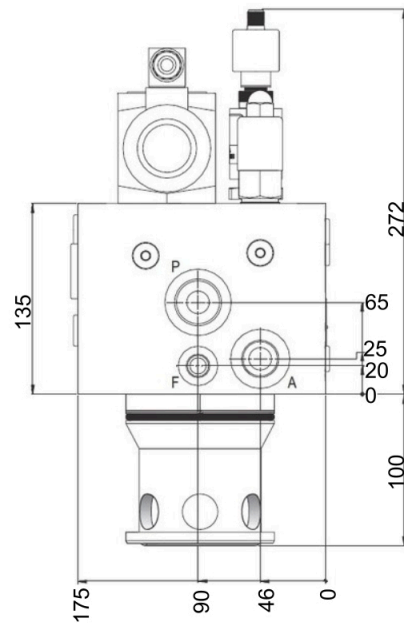
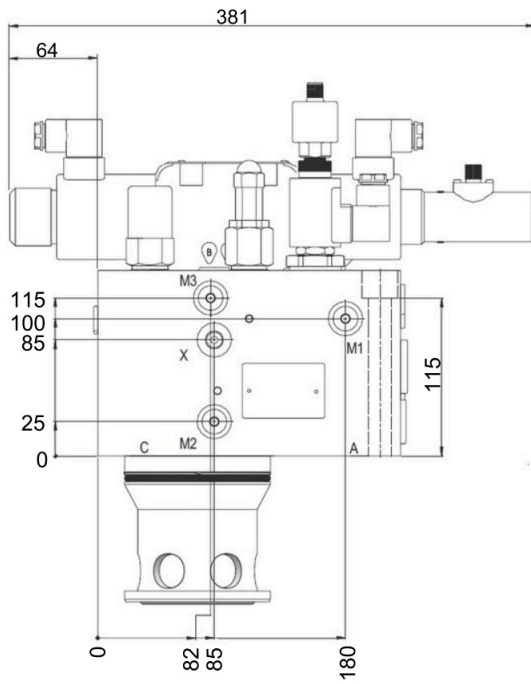
Display with flange connection



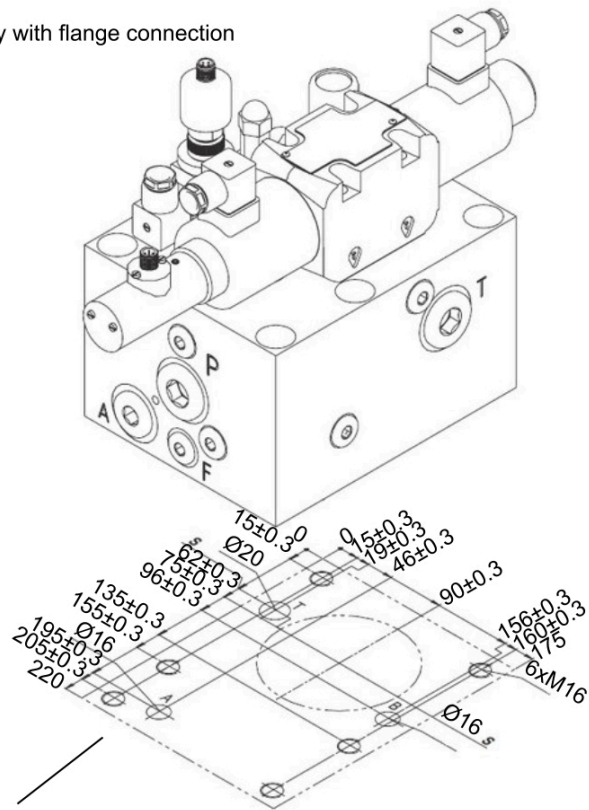
Cylinder block SAMB NG10



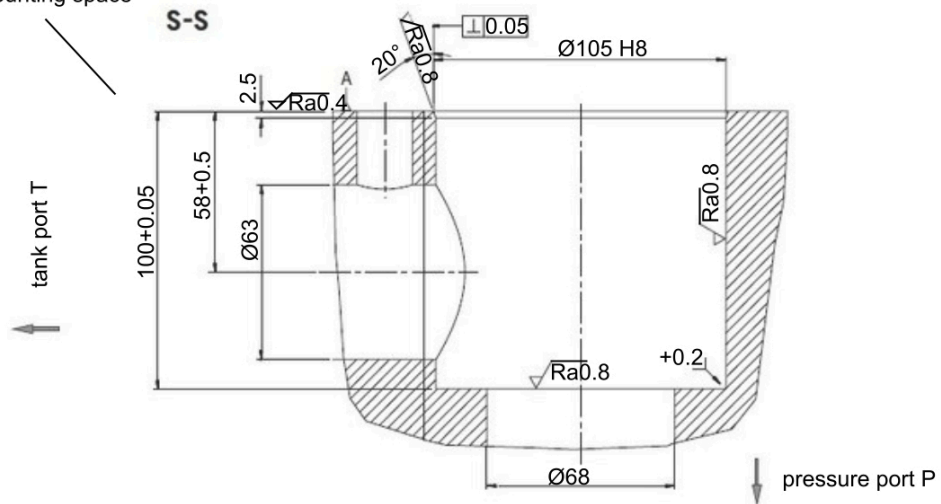
connection	size	tightening torque
P, T	G1	200 Nm
A	G3/4	155 Nm
F	G3/8	55 Nm
X, M1, M2, M3	G1/4	33 Nm



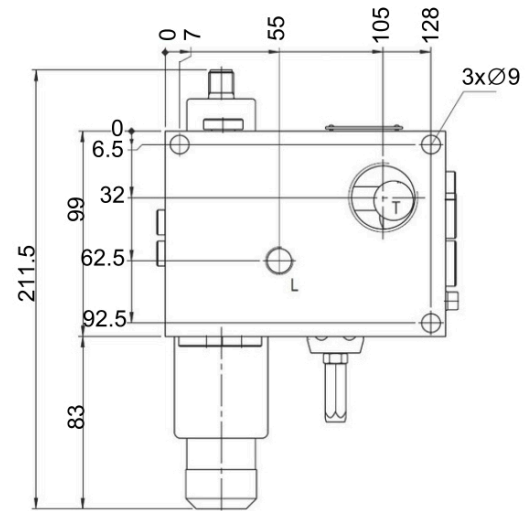
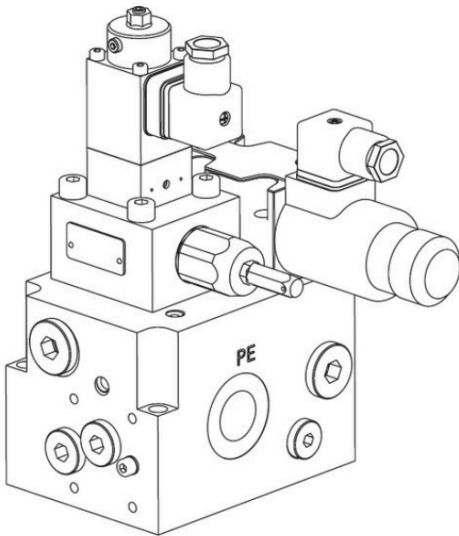
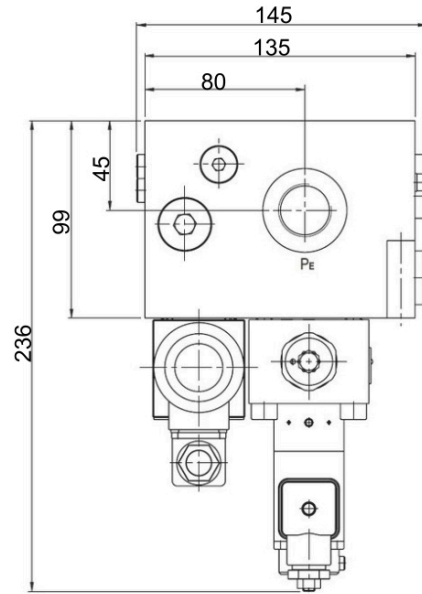
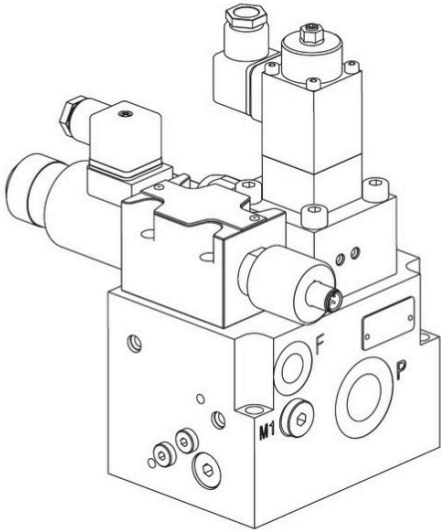
display with flange connection



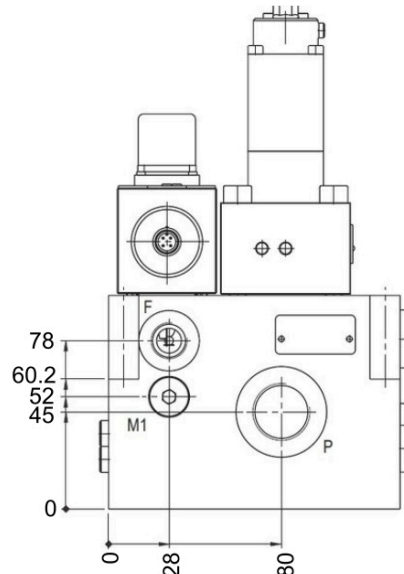
mounting space

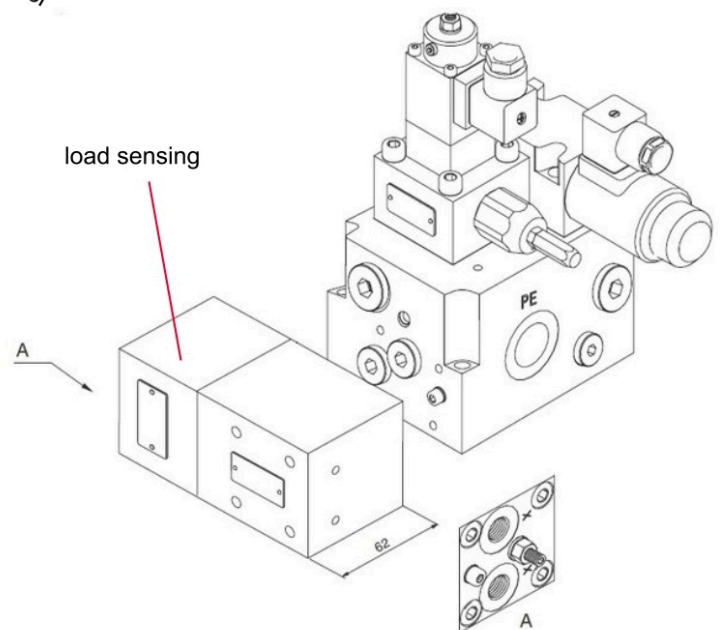
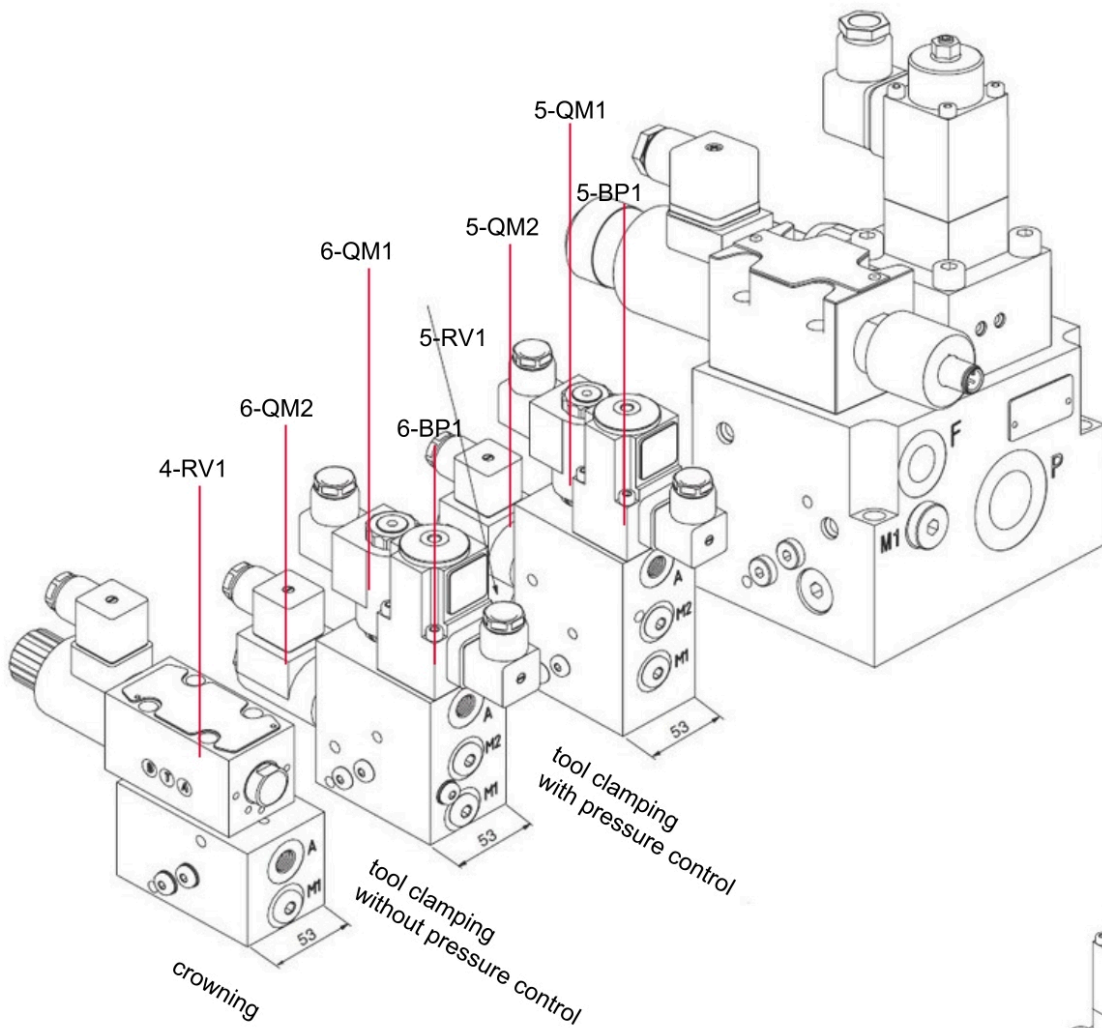


Pump block NG06



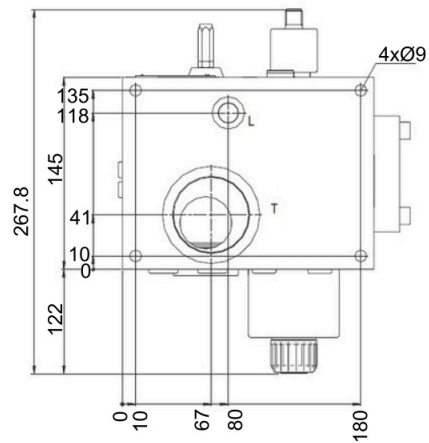
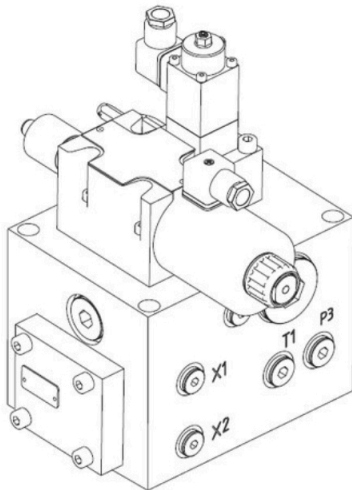
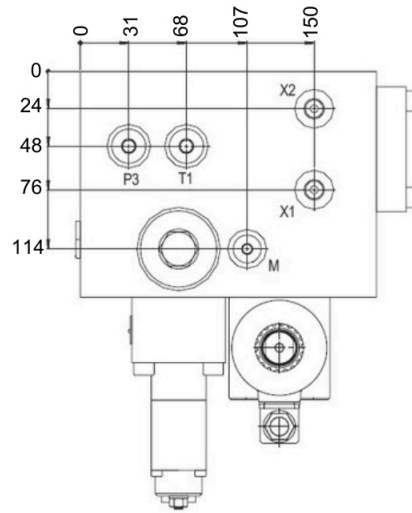
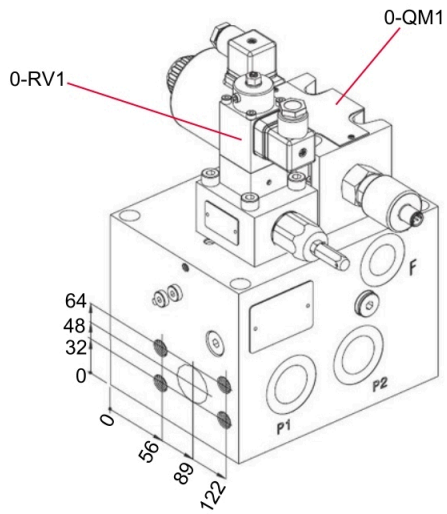
connection	size	tightening torque
T	G1	400 Nm
P, PE	G3/4	155 Nm
F	G3/8	55 Nm
L, M1	G1/4	33 Nm



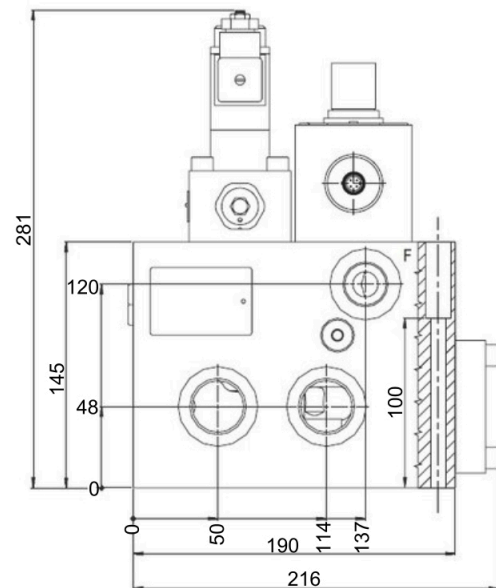


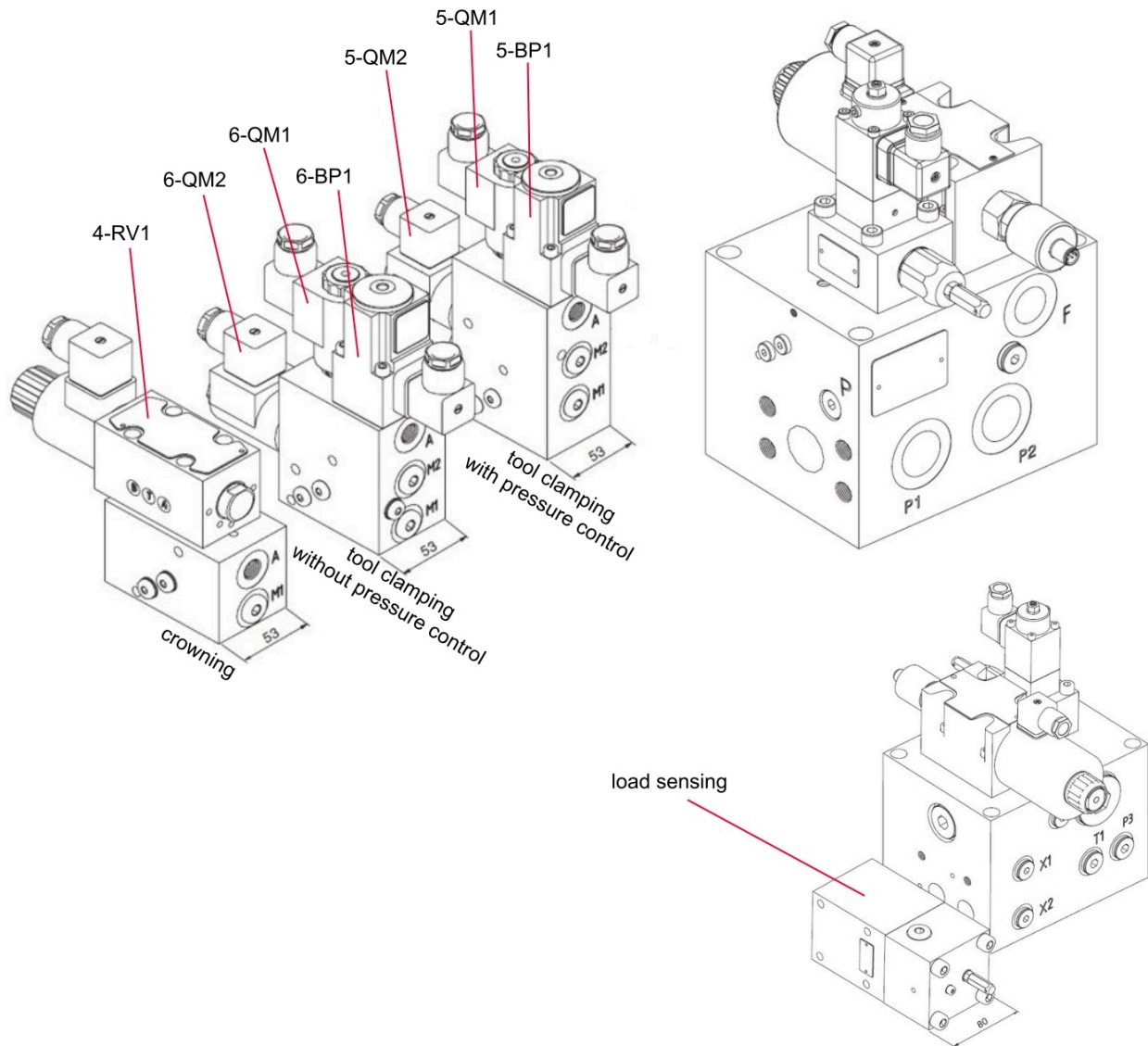
connection options	size	tightening torque
A, M1, M2, X	G1/4	33 Nm

Pump block SAPB NG10



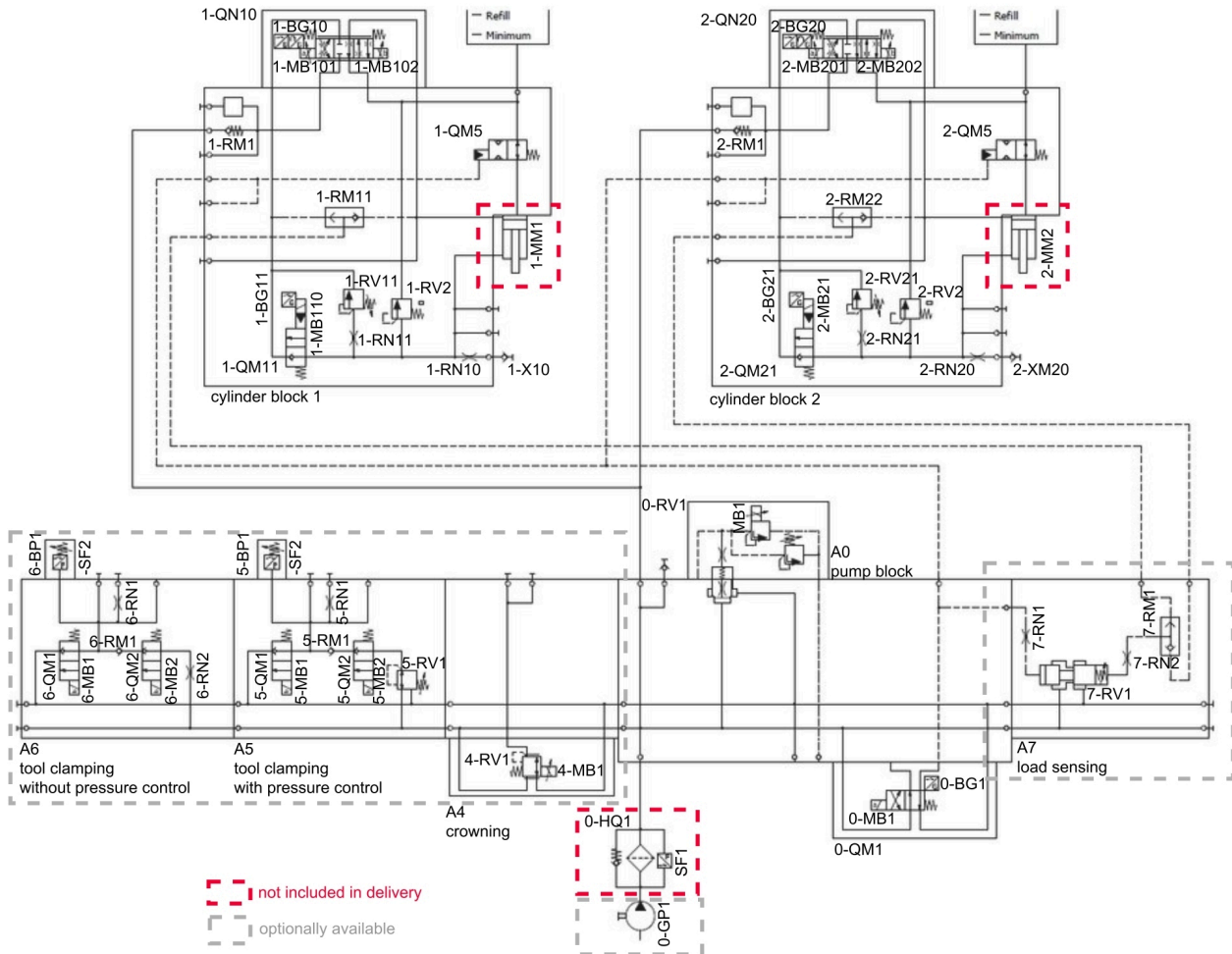
connection	size	tightening torque
T	G2	400 Nm
P, PE	SAE 1 1/4 (6000PSI)	155 Nm
F	G3/8	55 Nm
L, M1	G1/4	33 Nm
P1, P2	G1	400 Nm

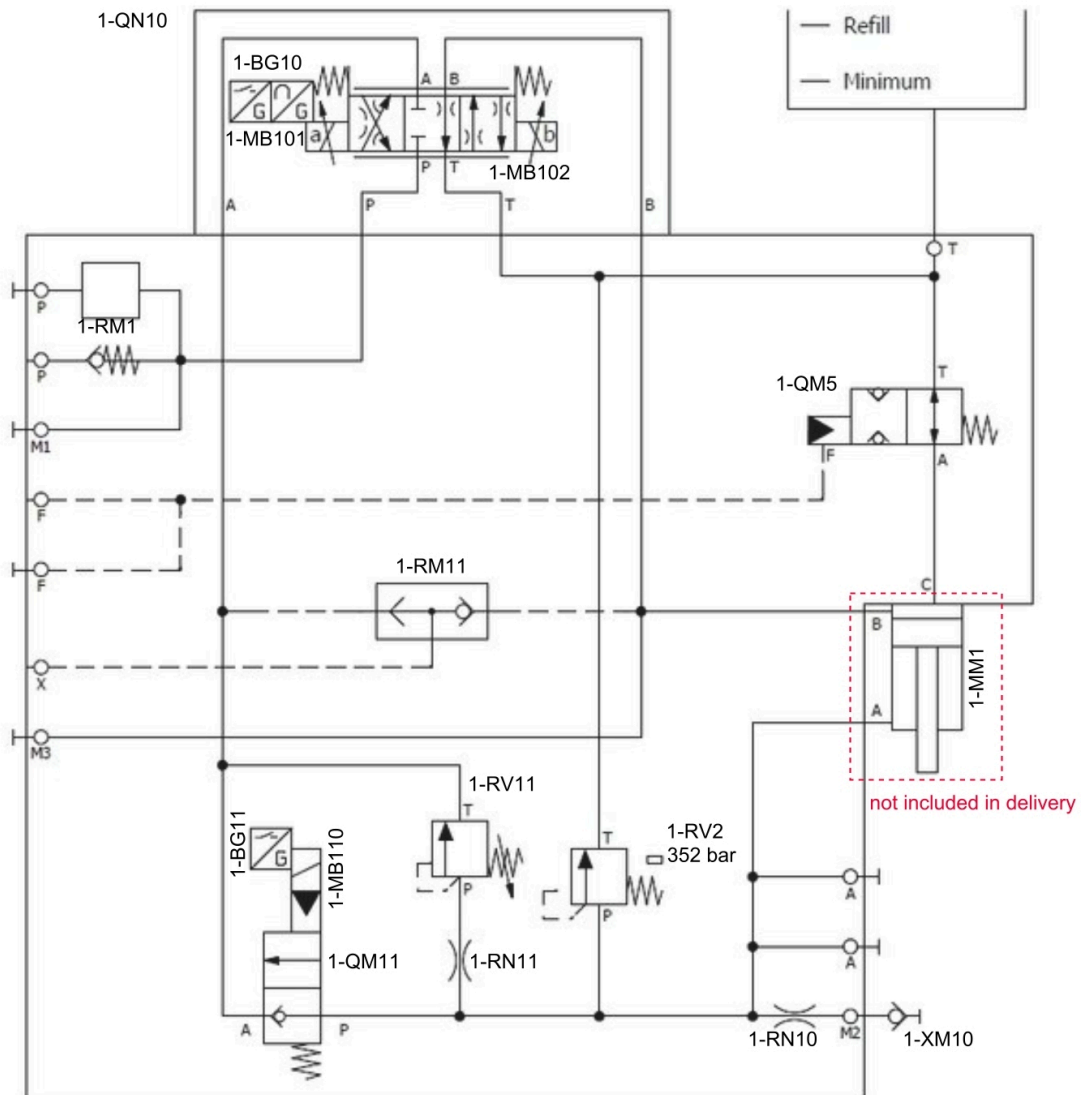




Circuit diagram

SAMB with SAPB (NG06)





Order information

Type code

SAMB

S	AMB	53418	I	06	B	024	X - - -	S...
								special design
								design of suction valves NSV
								volume flow
								piston type of proportional directional valve
								size of proportional directional valves
								type of proportional directional valves
								number of basic block
								design
								position monitoring of valves

position monitoring of valves

S*	position monitoring of:
	<ul style="list-style-type: none"> ▪ 2/2-way seated valve ▪ proportional directional valve (type I,H)
-	no position monitoring

*preferred option

design

AMB	cylinder block
-----	----------------

number of basic block

53418	NG06 (1DS)
55100	NG06, without shuttle valve for load sensing (6CP)
54982	NG06, with shuttle valve for load sensing (6CP)
51721	NG10

type of proportional directional valves

I	PIL proportional directional valve with transducer and middle position signal
R	PRL proportional directional valve with transducer
S	POL proportional directional valve without transducer
Q	POH proportional directional valve without transducer
H*	PIH proportional directional valve with transducer and middle position signal

* preferred option

only use I or H for SAMB

middle position signal...required for safety

transducer...faster positioning, dynamics

size of proportional directional valves

06*	PC06
08	PC08
10*	PC10

*preferred option

piston type of proportional directional valve

A	symbol 500 (PIL, PRL, POL)
B*	standard symbol 400 (PIL, PRL, POL); 430 (POH, PIH)

*preferred option

volume flow

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

design of suction valves NSV

S	special design
V	NSV, type NO NG32
W	without NSV
X*	standard NSV, type NO (NG50 for NG06, NG75 for NG10)
Z	NSV, type NO NG40

* preferred option

Type code

SAPB

S	APB	51092	80	D B - -	S...
					special design
				options	
			volume flow of pump block		
		number of basic block			
	design				
	monitoring of valves				

monitoring of valves

S	monitoring of 4/2-way directional spool valve
-	no monitoring

design

APB	pump block
-----	------------

number of basic block

51092	NG06
51790	NG10

volume flow of pump block

in L/min (max. pump flow of system)

options

X	without option
D	load sensing
B	crowning (NG06)
C	crowning (NG10)
K	tool clamping module without pressure valve
R	tool clamping module with pressure valve (< 80 bar)
L	tool clamping module with pressure valve (< 170 bar)

Type code

Digital amplifier

PVR	600	5	H	B	30	6	R	K
								filter K no filter
							function R ramp	
						control 6 number of solenoids		
					output current 30 3,000 mA I _{max}			
				final stage B quick de-energizing				
			installation H mounting rail according DIN 50022					
		control 5 multi-valve						
	design 600 standard							
	601 EtherCAT							
type	electronic digital amplifier							

accessories: socket board KC3832

Type code

HQI 2

HQI	2	-	025	R	K	0	3	-10	S122
	size		displacement volume and weight	rotation direction	shaft end	fastening flange	suction and pressure port	design	
type									

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	cm ³ /rev	5.5
016	15.8		5.7
019	19.3		7.4
022	22.2		7.8
025	25.2		8.0

kg

rotation direction

R | right

shaft end

K | cylindrical (with cone)

P | cone toothing (only for further multiple pump)

fastening flange

0 | SAE-A2 flange

suction port and pressure port

3 | SAE flange

6 | enlarged suction port for speed controlled drive applications

0 | suction side closed, common suction

design

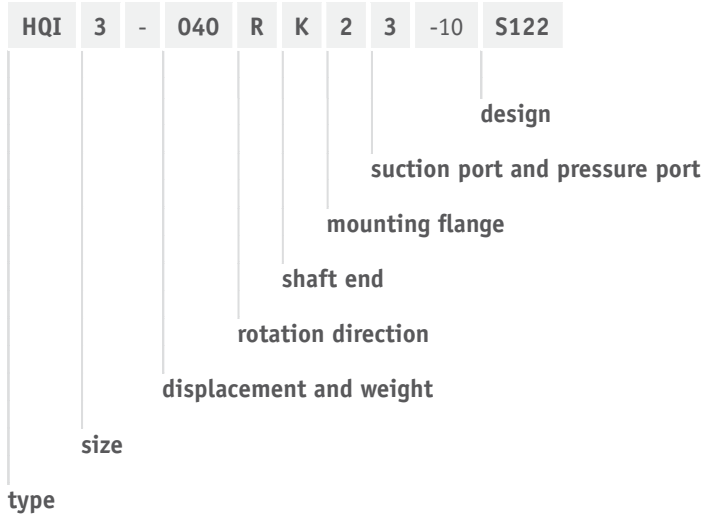
S122 | pressure port and suction port radial

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

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

Type code

HQI 3



type

HQI | internal gear pump in segment design

size 3

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	12.0
040	40.1	15.0
050	50.3	17.0
064	64.6	18.0

cm³/rev kg

rotation direction

R | right

shaft end

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

mounting flange

2 | SAE-B-2 flange

suction port and pressure port

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

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.

Type code

HQI 6

HQI	6	-	040	R	K	2	3	-10	S122
type	size		displacement and weight	rotation direction	shaft end	mounting flange	suction port and pressure port	design	

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	cm ³ /rev	39
125	125.7		42
160	160.1		46
200	200.9		51
250	249.9		58

kg

rotation direction

R | right

shaft end

K | cylindrical (with cone)

P | cone toothing (only for further multiple pump)

mounting flange

2 | SAE-D-2 flange

suction port and pressure port

3 | SAE flange

6 | enlarged suction port for speed controlled drive applications

0 | suction side closed, common suction

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.

HAWE Hydraulik SE

Einsteinring 17 | 85609 Aschheim/Munich | P.O. Box 11 55 | 85605 Aschheim | Germany
Phone +49 89 379100-1000 | Fax +49 89 379100-91000 | info@hawe.de | www.hawe.com