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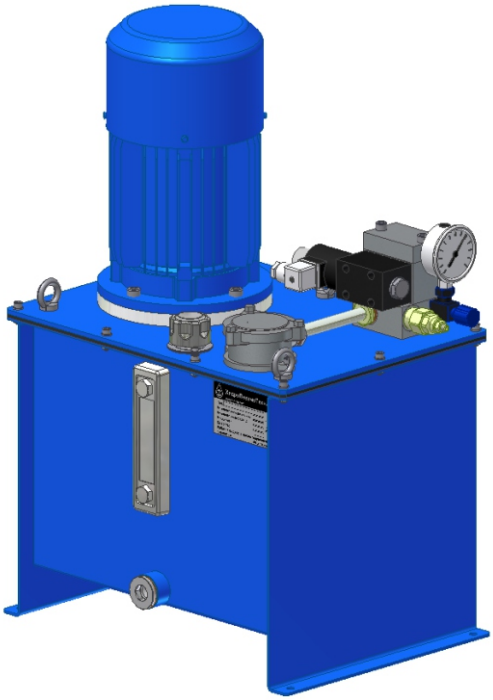
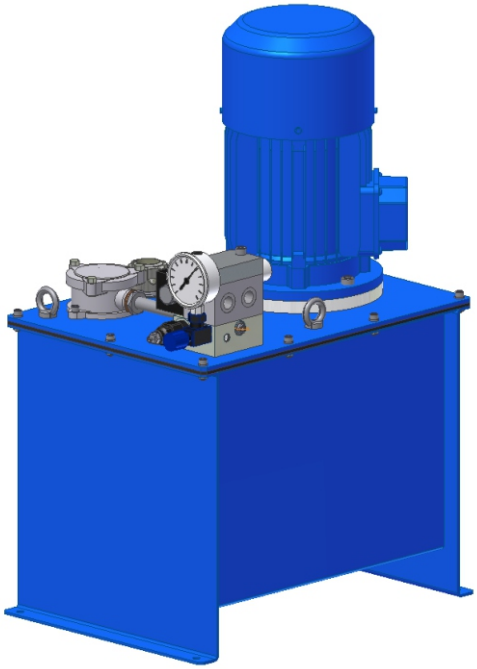
HYDRAULIC POWER PACKS

HPP ..





The hydraulic power packs are used to supply different hydraulic systems, installations and machines with oil under pressure.

They are designed to work with hydraulic oils with viscosity 20÷100 cSt and ambient temperature -20°C÷+50°C. The diversity of the power packs based on the requirements to them is great, and that allows us to manufacture identical power packs in series, as well as single power packs bound to the individual requirements of the customers.

The electric motors, used in the serial range of the power packs, are asynchronous – one-phase and three-phase, with a power of 0,25÷15 kW and a level of protection IP54. Gear pumps are used in general to pressurize the oil, i.e. I, II and III group to cover the flows of 1÷90 l/min. We have developed a typical series of tanks with a volume of 25÷300 liters. All of them have a level gauge, which can be combined with a thermometer and a plug to drain the oil. The electric motor, coupled to the pump by a bell-housing and a drive coupling with a spider,is placed on the cover of the power pack, which provides the noiseless, continuous and problem-free work of the pump. In case of low noise level requirements, a special carrier can be assembled, with an elastic connection to the cover. The pump works submerged in oil, which provides good suction and partial suppression of the noise. A suction filter is mounted to the pump to prevent from pollution, with a bypass valve, which opens in case of a clogged filter to keep the pump from blocking. The oil from the pump is led by a high-pressure hose to the basic block set on the cover. If necessary, a tandem pump may be installed, instead of a single one, in which case there is an opportunity to assemble a discharge block to it in order to control the ongoing flow.

A safety valve and a check valve are mounted in the basic block, as well as a control pressure gauge. Several upgrade blocks can be coupled on the basic block by two studs, which allows the hydraulic diagram to be expanded and provides that different valves of the known module ranges with Cetop 03 (ISO 4401-03) and Cetop 05 (ISO 4401-05) type of assembly can be joined.

The returning oil from the system flows back to the tank through a drain filter to filtrate eventual pollutions from the system. To be easily serviced, the filter and the draft neck are placed in the front end of the power pack, near the level gauge. The power packs can be equipped with a water-oil or air coolers as well as with oil heater, depending on the mode of work and the characteristics of the environment. For higher accuracy of the temperature control a PID regulator can be mounted.

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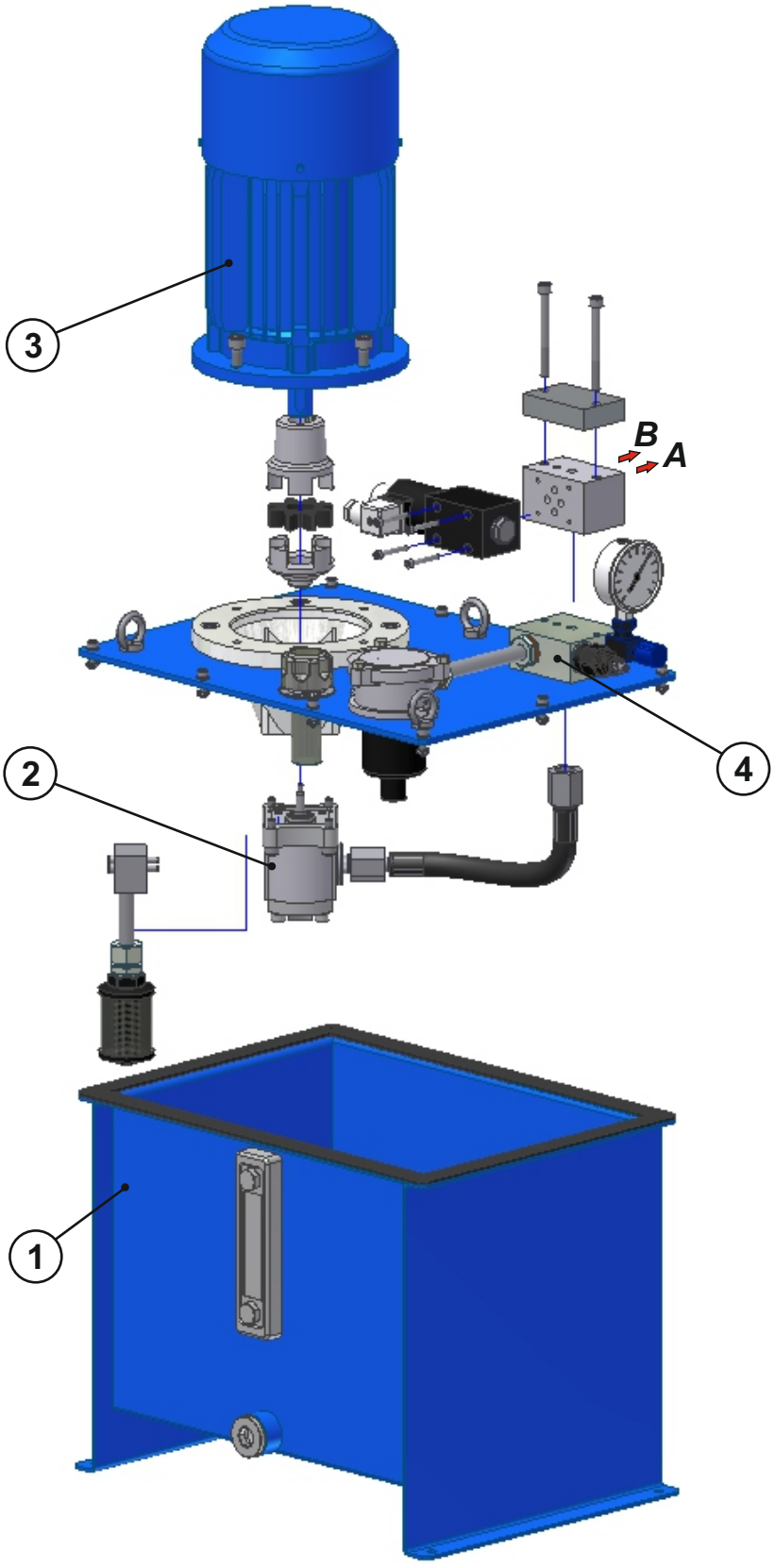

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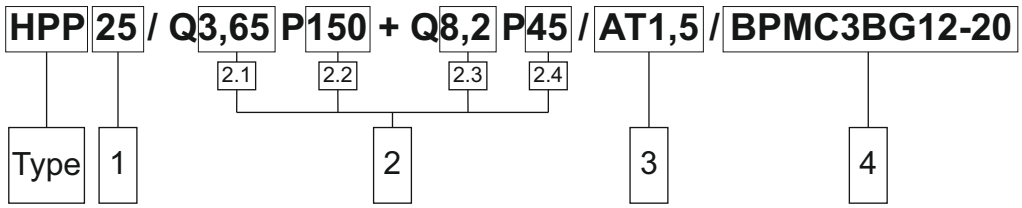
HYDRAULIC POWER PACKS

HPP ..

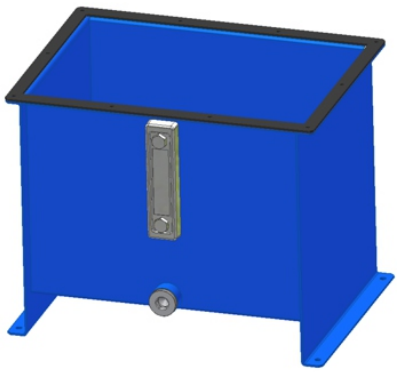
ORDERING CODE

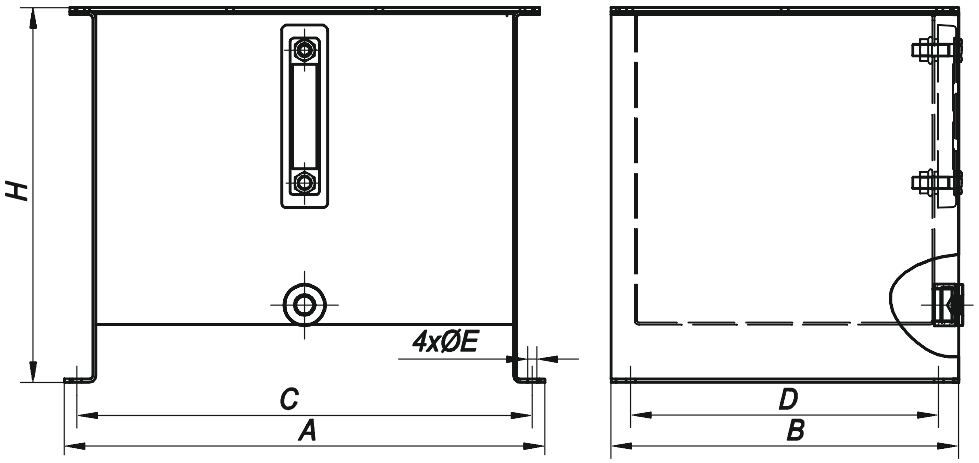
In case of an enquiry about a power pack you may use the standard encoding given below or to specify the general characteristics of the power pack such as tank volume, power of the electric motor, supply voltage, flow, maximal pressure, control voltage and to enclose the hydraulic diagram demanded by you. Because of the great diversity of options, the standard encoding includes the elements up to the basic block on the cover. For the scheme that you want us to realize further we need you to send us your design.

After placing an order you will receive from us a unique code for the specific power pack, which you can use in your next orders.



TANK 1





Code	Volume*	A	B	H	C	D	E
	L	*mm*	*mm*	*mm*	*mm*	*mm*	*mm*
25	25	460	337	359	436	295	9
50	50	658	359	394	640	320	11
100	100	820	400	449	790	360	11
150	150	870	520	544	840	480	11
300	300	1010	665	674	980	625	11

The tanks are made out of 3 mm steel sheets. They are powder coated on both sides. The standard color is a blue one (RAL5010), other colors may be used after being specified in your enquiry.

* The volume indicated in the table is the volume of the oil to the upper edge of the level gauge.

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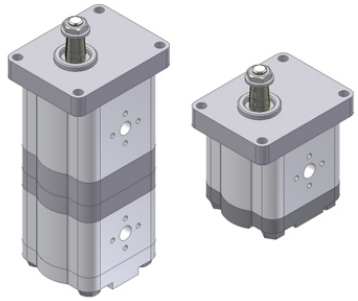
HYDRAULIC POWER PACKS

HPP ..

HYDRAULIC PUMP

2



External hydraulic gear pumps are used in the power packs, with maximal pressure of 250 bar. Three size ranges are applied; their geometrical volumes are listed in the table below. In the column “working volume” is presented the geometrical volume of the pump. The used gear pumps are both single and tandem ones.

In case of a single pump, the working volume of the pump selected from the table is written down in code 2.1, the maximal pressure of the system (in bar) is noted in code 2.2, and 2.3 and 2.4 are not filled in.

In case of a tandem pump, the abovementioned characteristics of the first pump (the one that maintains the high pressure in the system) are written down in 2.1 and 2.2. The characteristics of the second pump are written down in 2.3 and 2.4, and the pressure value is the one at which it is discharged.

Group of the pump		I								
Displacement	cm^3	**1**	**1,25**	**1,6**	**2**	**2,5**	**3,15**	**3,65**	**4,2**	**5**
	L/min	1,2	1,5	2	2,5	3,5	4	5	5,5	6,5
Group of the pump		II								
Displacement	cm^3	**6,3**	**8,2**	**10**	**11,3**	**12**	**14**	**15**	**16**	**19**
	L/min	8	11	13	15	16	19	20	22	26
Group of the pump		III								
Displacement	cm^3	**22,5**	**25**	**32**	**36**	**42**	**46**	**50**	**55**	
	L/min	31	34	44	39	58	64	69	76	

ELECTRIC MOTOR

3

The characteristics of the electric motors are selected from the tables below. The standard option is IP54 level of protection and 1500 min^{-1} speed of rotation. They can be produced with a blue painted cast iron body, or non-painted Aluminum body.

The choice of the power in case of a single pump is made by the formula:

N= (p x Q)/510 [kW], where “p”is the maximal pressure of the system [bar], and“Q”is the flow of the pump [L/min] (selected from the table in p. 2 for the specific pump).

In case of a tandem pump, the greater value of the following two formulas is selected:

N= (p x Q)/510 [kW], where“p” is the higher pressure, at which one of the pumps works [bar], and “Q” is the flow of that pump [L/min]

N= (p x Q)/510 [kW], where “p” is the pressure, at which one of the pumps is discharged [bar], and “Q” is the aggregated flow of the two pumps [L/min]

AT	1,5	

Code	Electric motor type
AT	*Three - phase 220/380*
AT4	*Three - phase 230/400*
ASR	*One - phase 220 VAC*

Code	Electric motor power
0,37	*0,37 kW*
0,55	*0,55 kW*
0,75	*0,75 kW*
1,1	*1,1 kW*
1,5	*1,5 kW*
2,2	*2,2 kW*

Code	Electric motor power
3	*3 kW*
4	*4 kW*
5,5	*5,5 kW*
7,5	*7,5 kW*
11	*11 kW*
15	*15 kW*

Code	Frequency
	50 Hz
60	*60 Hz*

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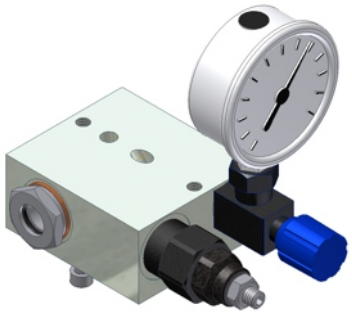
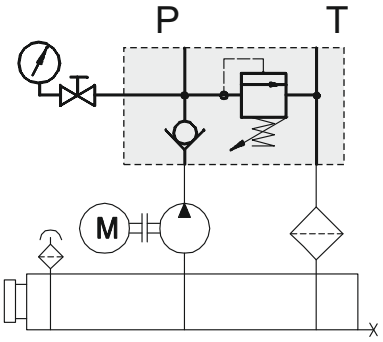
BASIC BLOCK

4

Three basic blocks can be mounted to the power packs as seen in pos. 4. Their main function is to protect the system from overload and to monitor the pressure. The flow from the pump is piped to them. There are two ports on their top side – inlet and outlet ones. The oil passes through them to the upgrade blocks, which are assembled by studs. The return oil flows through a drain filter. The type of the basic block depends on the flow and the kind of the pump (single or tandem), which is set in p. 2 and is not needed to be detailed in the enquiry. The description has only an information purpose.





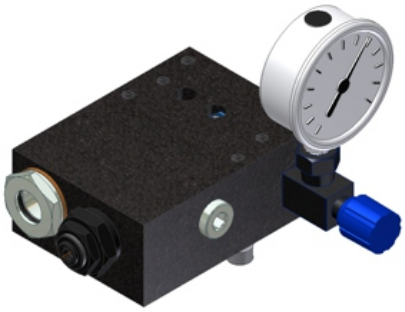
BPMC3BG12-20

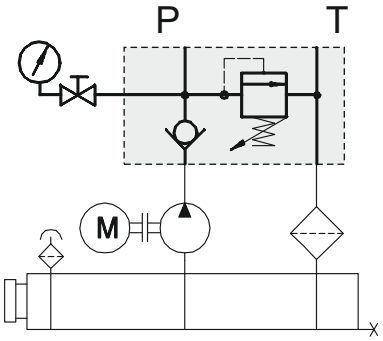
Pressure range		
10...80	bar	**8**
30...200	bar	**20**
50...320	bar	**32**

Max. flow - 50 L/min

See page 11.5

BPMC5BG34





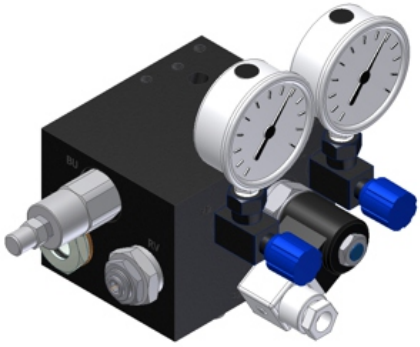
BPMC5BG34-20

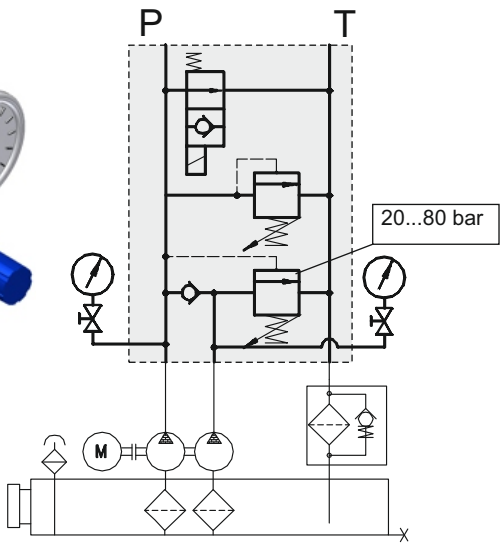
Pressure range		
5...100	bar	**10**
15...200	bar	**20**
20...320	bar	**32**

Max. flow - 100 L/min

See page 11.6

BPMC5B2G34





BPMC5B2G34-20

Pressure range of the high pressure valve		
5...100	bar	**10**
15...200	bar	**20**
20...320	bar	**32**

Max. fllow - 100 L/min

See page 11.7

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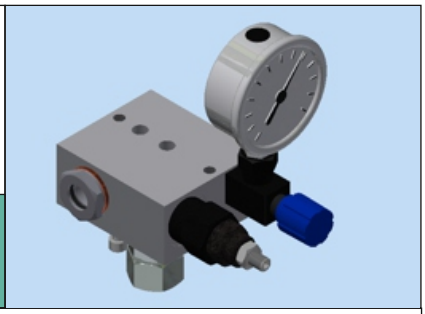
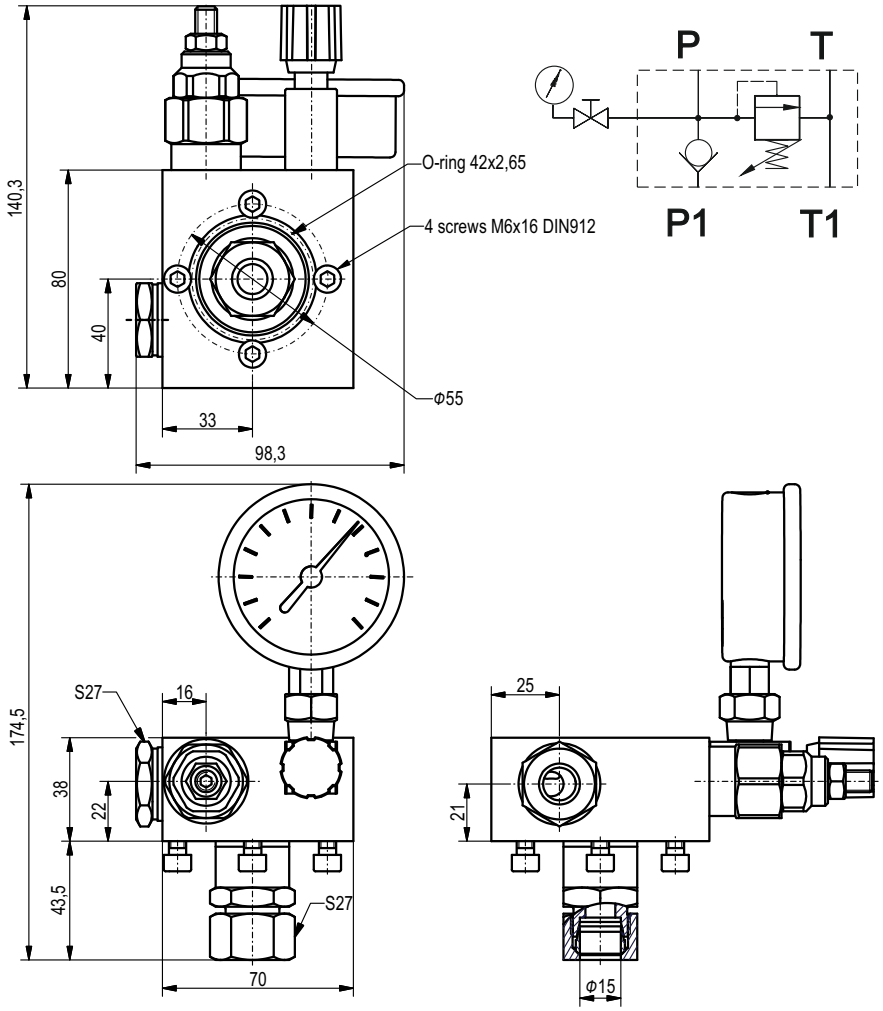
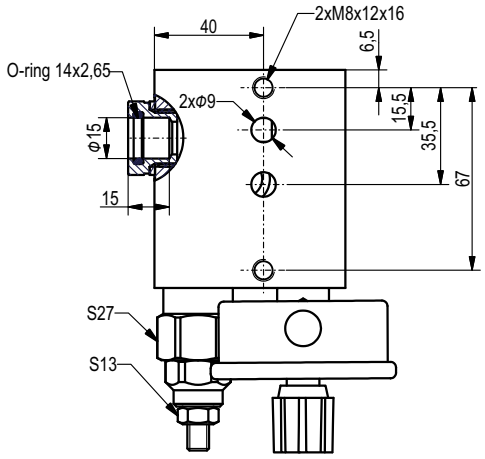
VALVE BLOCKS

BPMC3BG12-..



All performances and calibration are carried out by using hydraulic oil with viscosity approx. 46 cSt at 50°C
Temperature range: -20°C...+80°C.
Filtration absolute: 20 µm





Pressure range	
Code	Adj. pressure range **bar**
8	10…80
20	30…200
32	50…320

Type	$P_{max.}$	$Q_{max.}$
	bar	L/min
BPMC3BG12-8	80	50
BPMC3BG12-20	200	50
BPMC3BG12-32	320	50

ORDERING CODE

BPMC3BG12 - 20

Type	Pressure range code: **8, 20, 32**

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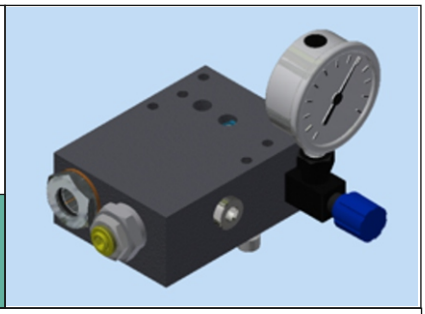
VALVE BLOCKS

BPMC5BG34-..



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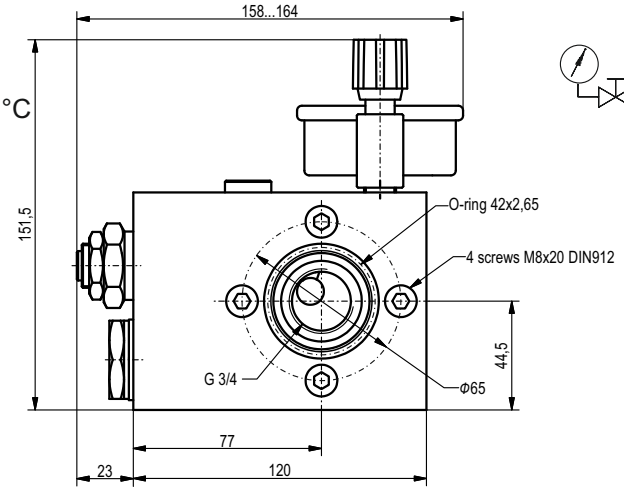
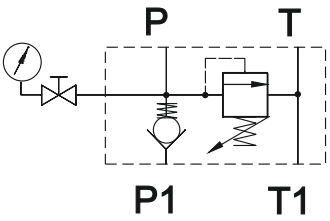
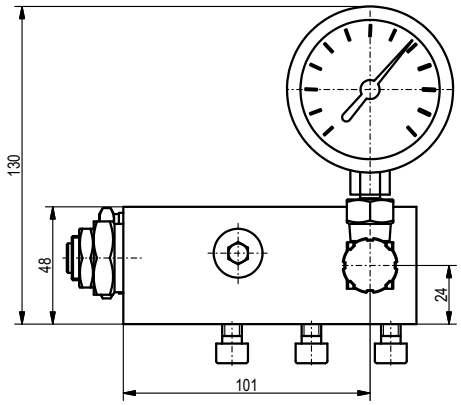
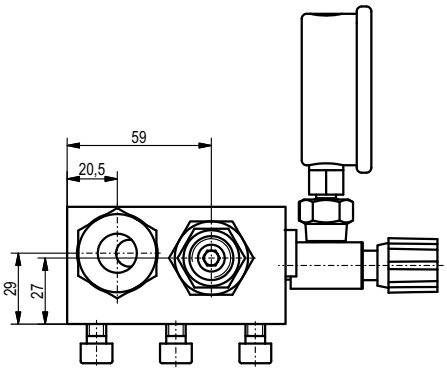
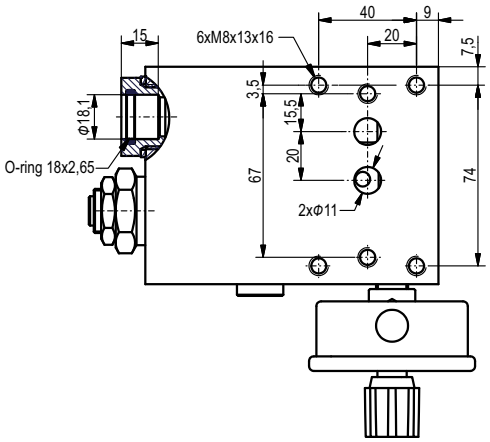
Temperature range: -20 °C...+80 °C.
Filtration absolute: 20 µm











Type	$P_{max.}$	$Q_{max.}$
	bar	L/min
BPMC5BG34-10	100	100
BPMC5BG34-20	200	100
BPMC5BG34-32	320	100

Pressure range	
Code	Adj. pressure range **bar**
10	5…100
20	15…200
32	20…320

ORDERING CODE

BPMC3BG34 - 20

Type	Pressure range code: **10, 20, 32**

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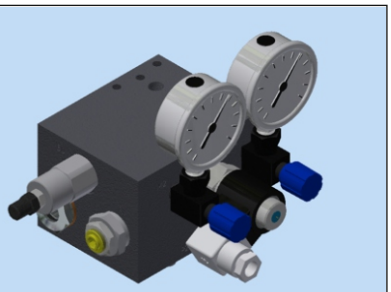
VALVE BLOCKS

BPMC5B2G34..-../...



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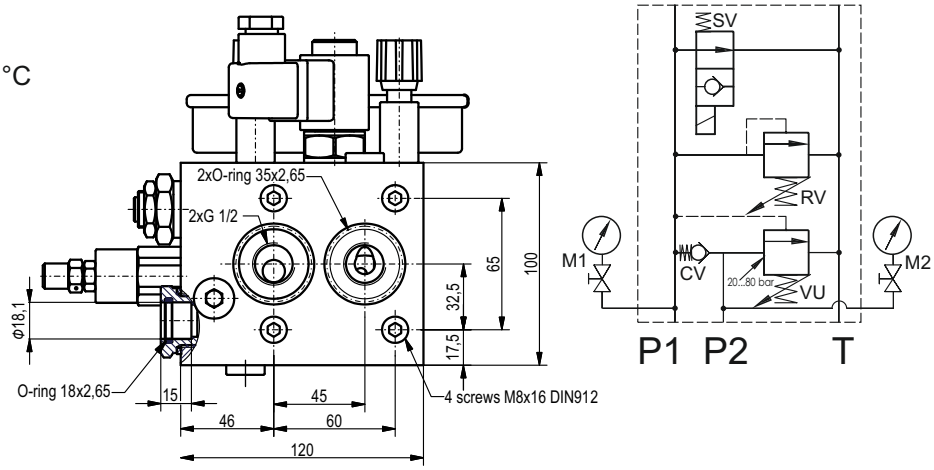
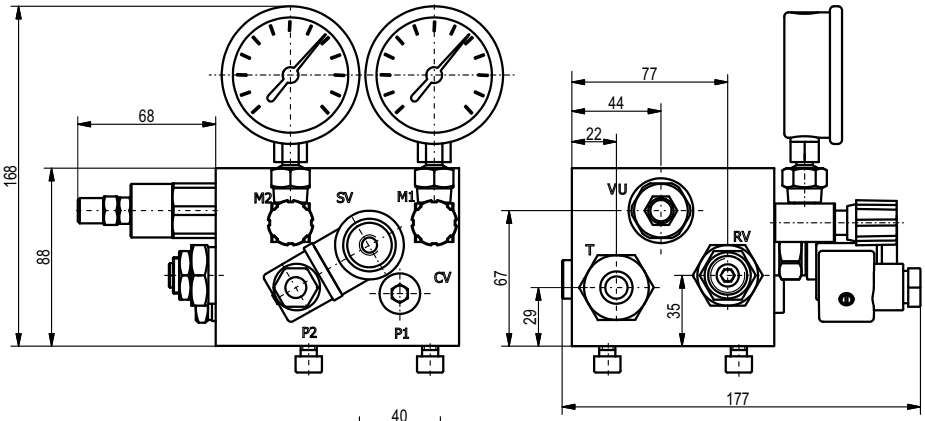
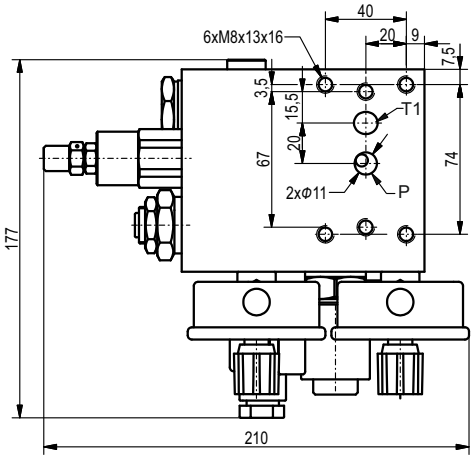
Temperature range: -20 °C...+80 °C.
Filtration absolute: 20 µm







Type	$P_{max.}$	$Q_{max.}$
	bar	L/min
BPMC5B2G34..-10/...	100	100
BPMC5B2G34..-20/...	200	100
BPMC5B2G34..-32/...	320	100

Pressure range	
Code	Adj. pressure range **bar**
10	5…100
20	15…200
32	20…320

ORDERING CODE

BPMC3B2G34NC - 20/24

Type	normally open - **NO** normally closed - **NC**	Pressure range code: **10, 20, 32**	Operating voltage - code 12V / 00Hz - **12** 24V / 00Hz - **24** 110V/50Hz - **110** 220V/50Hz - **220**