

## «Standard» Hydraulic power unit BM

- Tank volume  $V_{\max} = 25 \text{ l}$
- Flow rate  $Q_{\max} = 25,5 \text{ l/min}$
- Motor power  $P_{\max} = 3 \text{ kW}$



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### CHARACTERISTICS

- Compact construction
- Proven module type manifold and vertical stacking
- Basic block with economy circuit and bypass if required
- Maximum filtration with compact construction
- For valve assembly NG4-Mini and NG6
- direct accumulator connection
- Electronic accumulator unloading operation
- Extensive choice of accessories:  
Collecting tray, pressure accumulator, pressure sensor, electronic pressure switch, CE pressure relief, cooler, contamination indicator, manometer, temperature switch, fill level indicator, oil drain valve, etc.

### DESCRIPTION

Compact hydraulic unit as basic module for a user-specific assembly with NG4 or NG6 valves, with the proven module type manifold or vertical stacking system.

The unit consists of an aluminium tank, a motor, a pump, filter units and an energy-optimised basic block with an integrated economy circuit or direct accumulator connection.

The compact construction with very few screw connections guarantees maximum tightness.

### FUNKTION

The pump unit on the hydraulic power unit supplies the drive elements with hydraulic oil.



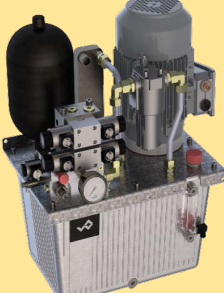
The pressure relief cartridge installed into the basic block prevents the pressure in the hydraulic system from increasing to inadmissible levels (limiting pressure). Monitoring instruments such as pressure switches, contamination indicators or fill level indicators allow a controlled operation.

### ENERGY EFFICIENCY

The reworked circuit diagram of the basis control unit allow a controlled delivery of the accumulator energy, where in comparison to the conventional accumulator unloading operation, the motor operating time can be considerably reduced. Through the active energy-saving circuit, there is an energy-savings potential of up to 80 % and thus a significant reduction of operating costs.

As an option, the basic modules can be equipped with a process-controlled frequency converter, which leads to a further substantial improvement of the energy balance.

**KEY DATA / OVERVIEW**

Execution basic block	Tank NG	Valve assembly NG	Bypass valve (-Q2)	Accumulator separation (-Q1)	Return filter (-V2)	Pressure filter (-V3)	Pressure accumulator V <sub>max</sub> [l]
<b>(C) Compact – Cost-effective</b> 	<b>6.3</b>	<b>4</b>	<input type="checkbox"/>	–	Spin-On <input checked="" type="checkbox"/> Horizontal	–	1
					Pump 1.2 .. 2.8 [l/min] Motor 0.18 .. 0.75 [kW]		
	<b>10</b>	<b>6</b>	<input type="checkbox"/>	–	Spin-On <input checked="" type="checkbox"/> Horizontal	<input type="checkbox"/> In-Line	1.4
					Pump 1.2 .. 6.6 [l/min] Motor 0.25 .. 1.5 [kW]		
<b>(F) Flex – Energy-optimised</b> 	<b>10</b>	<b>4</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Spin-On <input checked="" type="checkbox"/> Vertical	–	3.5
		<b>6</b>	<input checked="" type="checkbox"/>		<input type="checkbox"/> In-Line		
	<b>25</b>	<b>6</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Spin-On <input checked="" type="checkbox"/> Vertical	<input type="checkbox"/> In-Line	3.5
					Pump 1.2 .. 25.5 [l/min] Motor 0.55 .. 3.0 [kW]		
<b>(R) Reform – All-rounder</b> 	<b>25</b>	<b>6</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Mounted <input checked="" type="checkbox"/> on tank *	In-Line <input checked="" type="checkbox"/> *	3.5
					Pump 1.2 .. 25.5 [l/min] Motor 0.55 .. 3.0 [kW]		
	* Either return filter mounted on tank or pressure filter						
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> On request              – Not available							

## TYPE CODE

Example	BMN 6,3 - 6 CN - ADUO - A2,8 / H0,75 - E1-1,4 E2 D1 D5
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- : Standard
- △ : Standard accessories
- : On request
- : Not available

Pos.	Code Example	Tank NG						Code Example
		4	6	4	6	4	6	
1	<b>Basic module hydraulic unit standard</b>							BMN
	Basic module hydraulic unit special							BMS
2	<b>Tank nominal size</b>							NG
	Filling volume: 5.0 l Working volume: 1,4 l							6,3
	Filling volume: 8.4 l Working volume: 2,0 l							10
	Filling volume: 25 l Working volume: 10 l							25
3	<b>Basic circuit</b>							NG
	Nominal size for module type manifold							4
	Nominal size 4							6
	Nominal size 6							6
4	<b>Basic block</b>							NG
	Compact (C)	■	-	■	■	-	■	C
	Flex (F)	-	-	■	■	-	■	F
	Reform (R)	-	-	-	-	-	■	R
	Special execution							S
5	<b>Filter</b>							C
	Return filter as spin-on filter	■	-	■	-	-	-	N
	Return filter mounted on tank	-	-	-	-	■	-	T
	Pressure filter installed in line	-	□	-	□	■	-	D
6	<b>Manual drain valve (-S1)</b>							A
	With accumulator drain valve							O
	Without accumulator drain valve (threaded pin plugged)							A
7	<b>Pressure relief (-F1)</b>							NG
	Direct operated	■	-	■	-	-	-	D
	Pilot operated	□	-	■	-	-	-	V
	Proportional pressure relief	□	-	■	-	-	-	P
	CE Pressure relief, safety valve	□	-	■	-	-	-	T
	Special execution							S
8	<b>Valve (-Q2) - Bypass</b>							NG
	Solenoid poppet valve	□	□	□	■	■	-	U
	Without valve (blanking cartridge)	-	-	-	■	■	-	O
	Special execution							S
9	<b>Valve (-Q1) - active accumulator separation</b>							NG
	Solenoid poppet valve	-	-	■	■	■	-	E
	Without valve (screw plug)	-	-	■	■	■	-	O
	Special execution							S
10	<b>Pump unit: see table "Motor - pump combination"</b>							A
	External gear pumps							A
	Flow rate in l/min with nominal speed (50 Hz, 1400 min <sup>-1</sup> )							2,8
11	Three-phase motor standard (IE3 ≥ 0,75 kW)							H
	Motor incl. mounted frequency converter							F
	Special execution							S
	Motor power in kW							0,75

## TYPE CODE

Example	BMN 6,3 - 6 CN - ADUO - A2,8 / H0,75 - E1-1,4 E2 D1 D5
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- : Standard  
 △ : Standard accessories  
 □ : On request  
 - : Not available

Options	Pos.	Accessories	Tank			Code	Example	
			NG	6,3	10			25
Sensors	12	<b>Tank</b>						
		Oil drain screw (magnetic)		■	■	■	--	
		Drain tap for tank		△	△	△	B1	
		Collecting tray		-	△	△	B2	
		Feet underneath tank (set of 4 pieces) - Round buffer DIN 95363 Form C		△	△	△	B3	
		<b>Filler plug with venting filter</b>		■	■	■	---	
		<b>Energy</b>						
		Pressure accumulator - volume in [l]		△	△	△	E1-...	E1-1,4
		Volume: 0.075 - 0.32 - 0.5 - 0.75 - 1.0 - 1.4 - 2.0 - 3.5 [l]						
		Passive accumulator separation (useful only without -Q1)		△	△	△	E2	E2
		Manual pump		-	-	□	E3	
		<b>Level+temp.</b>						
Oil level indicator (-P1)		■	■	■	---			
Fill level switch minimum (integrated in oil level indicator)		△	△	△	N1			
Fill level switch minimum + temperature switch 70°C (integrated in oil level indicator)		△	△	△	N2			
Fill level switch minimum + temperature sensor PT100 (integrated in oil level indicator)		△	△	△	N3			
Thermometer round with sensor (integrated in oil level indicator)		△	△	△	N4			
<b>Pressure</b>								
			<b>Basic block</b>					
			NG					
			C	F	R			
			4 6	4 6	6			
Manometer incl. direct screw connections		△	△	△	△	D1	D1	
Minimesc Screw coupling series 1620 incl. eventual reductions		△	△	△	△	D2		
Pressure sensor 4-20 mA		△	△	△	△	D3		
Single pressure switch		□	□	□	□	D4		
Dual pressure switch (electronic, with 2 digital outputs and digital display)		△	△	△	△	D5	D5	
Cable for pressure switch with connection on the valve -Q2		- △	- △	△	△	D6		
<b>Filter</b>								
Contamination indicator, optical, for return filter		△	△	△	△	F1		
Contamination indicator, optical, for pressure filter		- □	- □	△	△	F2		
Contamination indicator, electrical, for return filter		△	△	△	△	F3		
Contamination indicator, electrical, for pressure filter		- □	- □	△	△	F4		
<b>Cooling</b>								
Sandwich cooler oil / water (sandwich for spin-on return filter) incl. hollow screw		△	△	-	-	K1		
Plate cooler oil / water incl. fixing and connecting parts		- □	- □	△	△	K2		
Electro cooler oil / air incl. console and connecting parts (from NG10 tank)		- □	- □	□	□	K3		
<b>Various</b>								
<b>Power connection motor with M12 Power connector (S-coded)</b>			■			--		
Power connection motor with terminal connection and cable screw connection			△			Y1		
Motor + tank cover painted (RAL colour to be determined)			△			Y2		
Electrical control			□			Y3		

**TECHNICAL DATA**

PUMP UNIT: MOTOR-PUMP COMBINATION											
Pump		Motor Nominal power [kW]									
		0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	
Capacity [cm <sup>3</sup> /revolut]	Flow rate [l/min]	Pressure p <sub>max</sub> in continuous operation [bar]									
0.91	1.2	76	106	157	210 *						
1.56	2.1	45	62	91	136	185	210 *				
2.08	2.8	33	46	69	102	139	204	210 *			
2.60	3.5		37	55	82	111	163	210 *			
3.64	4.8		26	39	58	79	117	159	210 *		
4.94	6.6		20	29	43	59	86	117	172	210 *	
5.85	7.8				36	49	73	99	145	198	
7.54	10.0				28	38	56	77	113	153	
10.80	14.4				20	27	39	54	79	107	
14.40	19.2				15	20	29	40	59	80	
19.20	25.5				11	15	22	30	44	60	
Field of application		Tank size BM. 6,3					Tank size BM. 10			Tank size BM. 25	

Calculated value with motor speed 1400 [min<sup>-1</sup>],  
 $\eta_{\text{hydraulics}}$  0.95,  $\eta_{\text{mechanics}}$  0.9

\* Limited due to continuous load capacity of standard components

BASIC POWER UNIT			
	BM. 6,3	BM. 10	BM. 25
Emitted heat flow with temperature difference 20 °K (Normal air circulation on all sides)	0,08 kW	0,14 kW	0,17 kW
Sound pressure level SPL/LpA (Reference values)	52 .. 56 dB (A)	54 .. 68 dB (A)	54 .. 70 dB (A)
Weight without oil (Reference value incl. basic block, without valve assembly, from the smallest motor without accumulator to the largest motor with accumulator)	13 .. 25 kg	18 .. 45 kg	32 .. 75 kg

**TECHNICAL DATA**

VALVES IN BASIC BLOCK						
Function	Code	Construction		Remark / Recommendation	Type	Data sheet no.
(-F1) Pressure relief	D	Pressure relief cartridge	Direct operated, cavity M22x1,5 or 3/4"-16UNF, with key adjustment	Clamping functions (seattight) up to approximately 10 l/min	BESPU08-... (Compact NG4) BASPM22-...	2.1-523 2.1-540
	V		Pilot operated, cavity M22x1,5, with key adjustment	With low leakage, from approximately 10 l/min	BVSPM22-...	2.1-530
	P		Proportional direct or pilot operation, cavity M22x1,5	Integrated electronics (on request)	BDPPM22-...-G24/WD-HB4,5 BVPPM22-...-G24/WD-HB4,5	2.3-539 2.3-529
	T		Safety valve pilot operated, fixed adjustment with CE Certificate, cavity M22x1,5	Pressure accumulator according to Pressure equipment Directive 2014/68/EU	BVTPM22-...	2.1-532
(-Q2) Bypass valve	U	Poppet valve cartridge normally open with integrated manual override	Pilot operated, cavity M22x1,5, flow direction from 2 to 1, solenoid coil see below	Basic blocs Compact NG6, Reform NG6	SVSPM22-CB-X5-HB4,5	1.11-2082
			Pilot operated, cavity M22x1,5, flow direction from 1 to 2, solenoid coil see below	Basic block Flex NG6	SVSPM22-CB-X5-HB4,5Z526	1.11-50600
			Pilot operated, cavity 3/4"- 16UNF, flow direction from 2 to 1, solenoid coil see below	Basic blocs Compact NG4, Flex NG4	SVEPU08-CB-X5-HBI	1.11-208B
(-Q1) Valve for accumulator separation	E		Pilot operated, cavity M22x1,5, solenoid coil see below	Basic blocs Flex NG6, Reform NG6	SVSPM22-CB-X5-HB4,5	1.11-2082
			Pilot operated, cavity 3/4"- 16UNF, solenoid coil see below	Basic bloc Flex NG4	SVEPU08-CB-X5-HBI	1.11-208B
Solenoid coil	Solenoid coil to slip-on		Please specify voltage and connector type; without specification, G24 and DIN connector will be installed.		For SVEPU08-... For SVSPM22-...	KDE33/13-G24 WDE37/16x40-G24

**CONFORMITY WITH DIRECTIVES**

Wandfluh hydraulic power units are documented and constructed according to the Machinery Directive 2006/42/EC and the Pressure equipment Directive 2014/68/EU.

They are partly completed machines in the sense of the Machinery Directive. If any parts of these come under the Pressure equipment Directive, then these conform to the Pressure equipment Directive.

The hydraulic power units are neither safety components in the sense of the Machinery Directive nor are they assemblies in the sense of the Pressure equipment Directive.

To comply with the requirements of the Machinery Directive, the harmonised standard EN4413 was applied. The hydraulic power units are delivered with Installation instructions and a Declaration of incorporation in the sense of the Machinery Directive. They may only be commissioned when it has been ensured that the machinery into which the partly completed machine is to be built

- complies with the Machinery Directive 2006/42/EC.
- and the associated Installation instructions have been read and understood by all persons concerned.

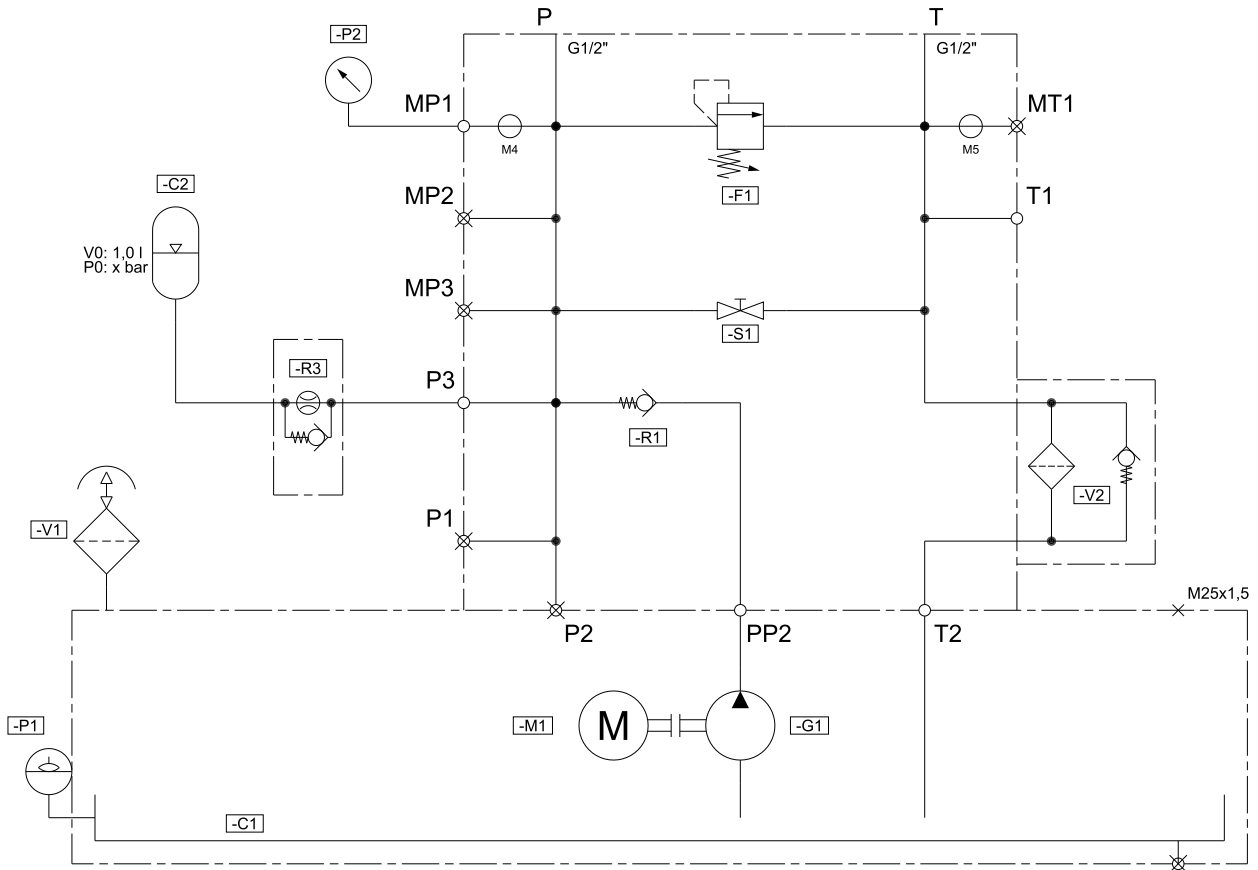
The control logics on the hydraulic power units are part of the machine control and must be assessed by the manufacturer of the machine.

**HYDRAULIC DIAGRAM**

Reference designation according to EN81346-2:2009EN

**Compact NG6 (6CN)**

Example: BMN10-6CN-ADOO-A2,8/H0,75-E1-1,0 E2 D1


**Note!**


For basis block Compact NG4 (4CN) please observe:

- The drain valve (-S1) discharges directly to the tank (after the filter)
- Ports P2 and MP3 not available
- Ports P and T in size G 1/4"

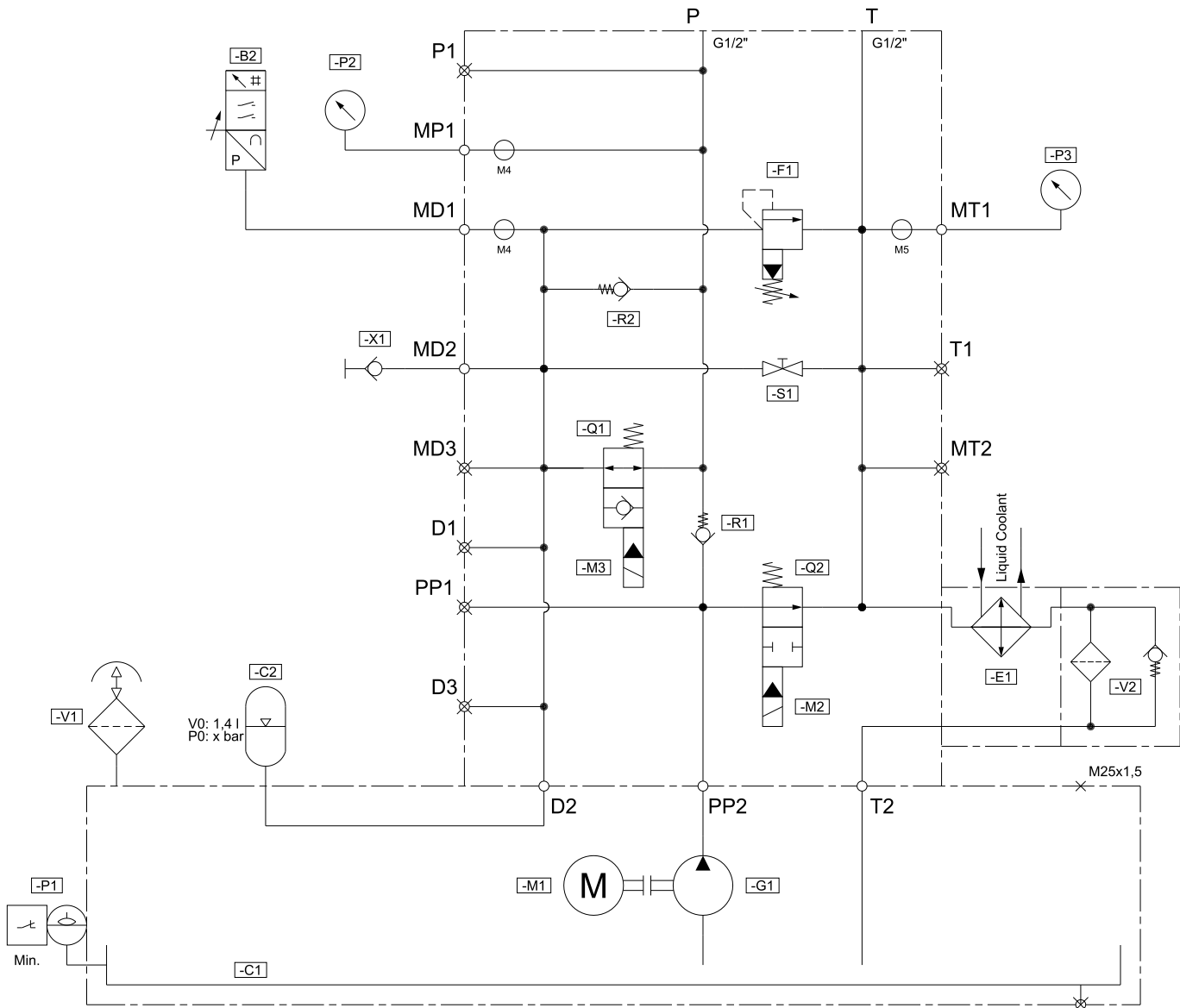
Reserve port M25x1,5 only available from tank size NG10

**HYDRAULIC DIAGRAM**

Reference designation according to EN81346-2:2009EN

**Flex NG6 (6FN)**

Example: BMN10-6FN-ADUE-A2,8/H1,5-E1-1,4 N1 D1 D5 F1 K1


**Note!** For basis block Flex NG4 (4FN) please observe:


- Standard version without bypass valve (-Q2)
- Ports D1, D3 and PP1 not available
- Ports P and T in size G 1/4"

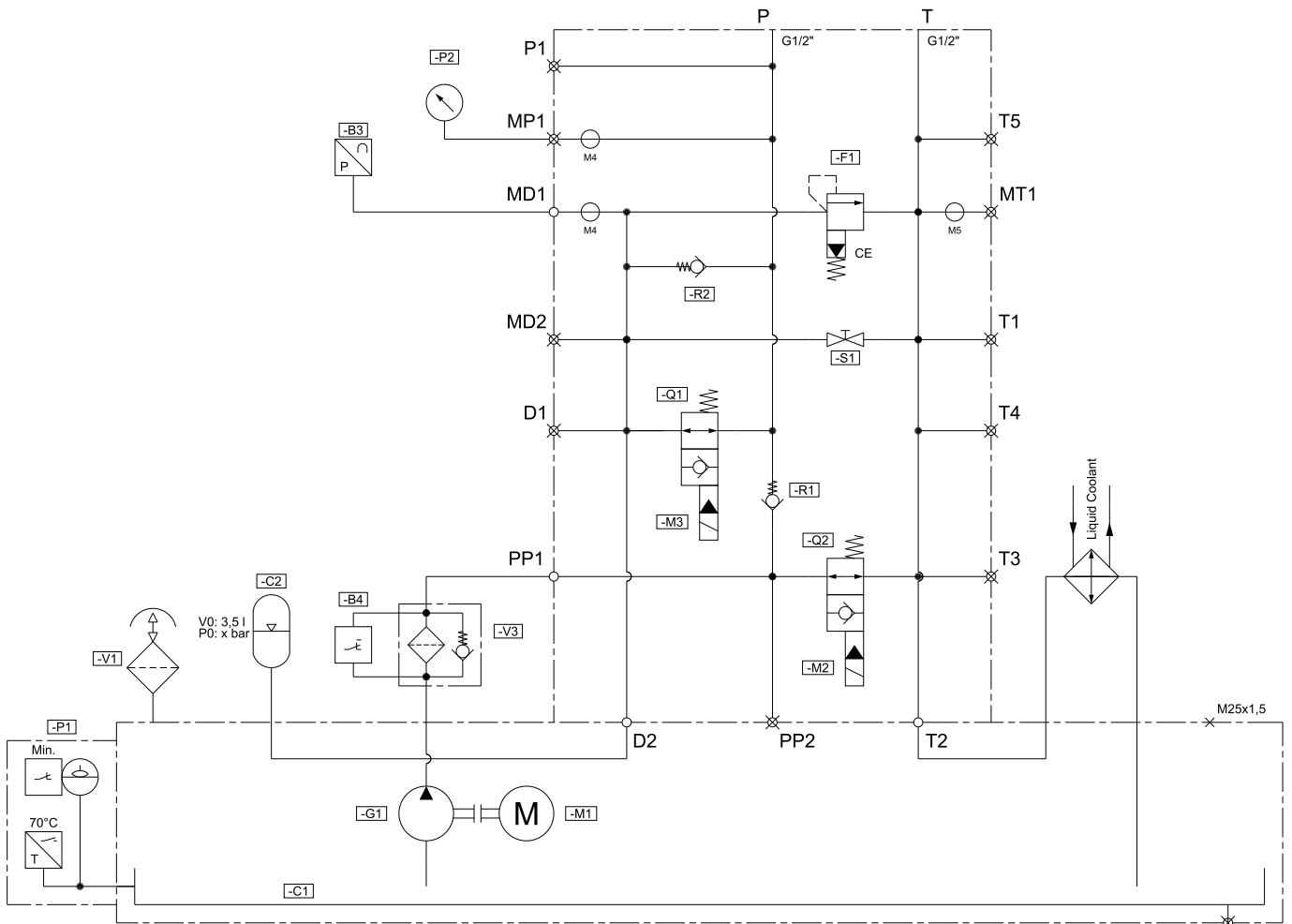


**HYDRAULIC DIAGRAM**

Reference designation according to EN81346-2:2009EN

**Reform NG6 with pressure filter (6RD)**

Example: BMN25-6RD-ATUE-A10/H3-E1-3,5 N1 D1 D3 F4 K2

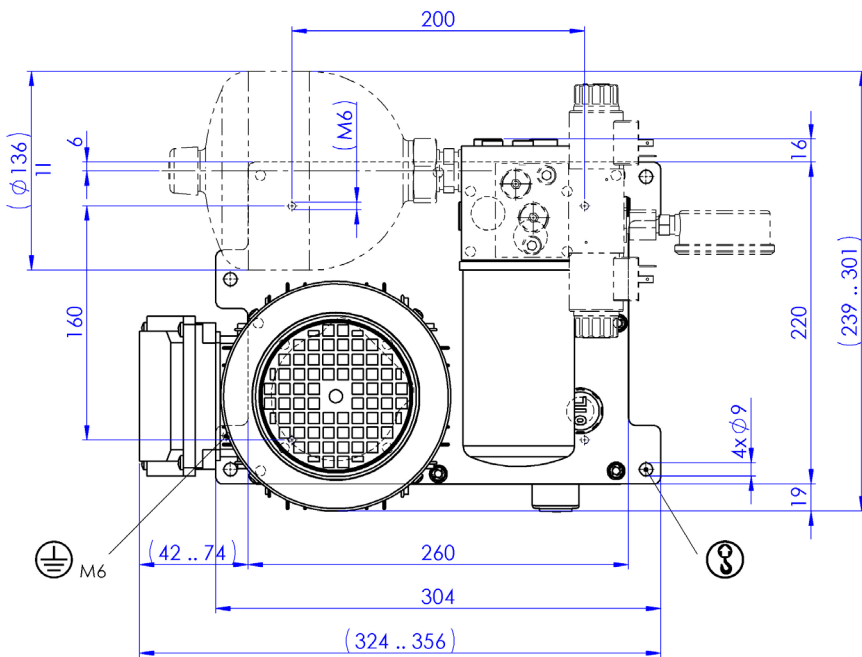
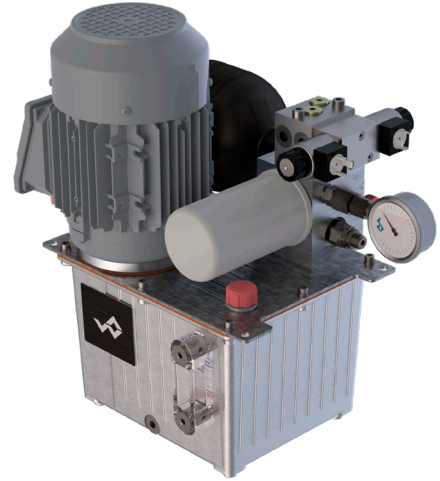
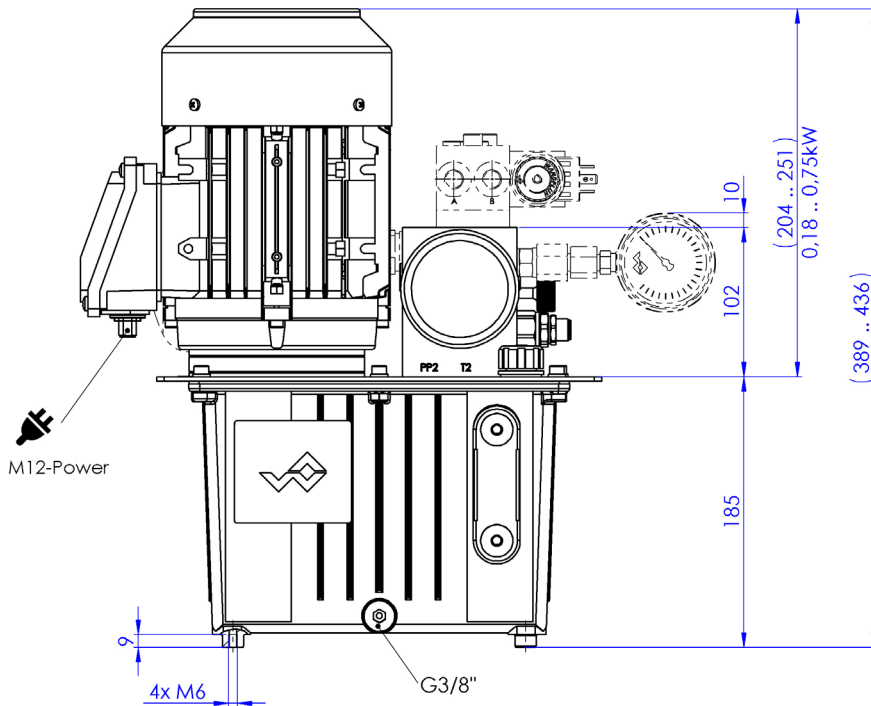

**Note!**


For basis block equipped with a return filter (6RT) please observe:

- Ports PP1 and T2 are closed
- Return filter is connected on port T3
- Pump is connected on port PP2

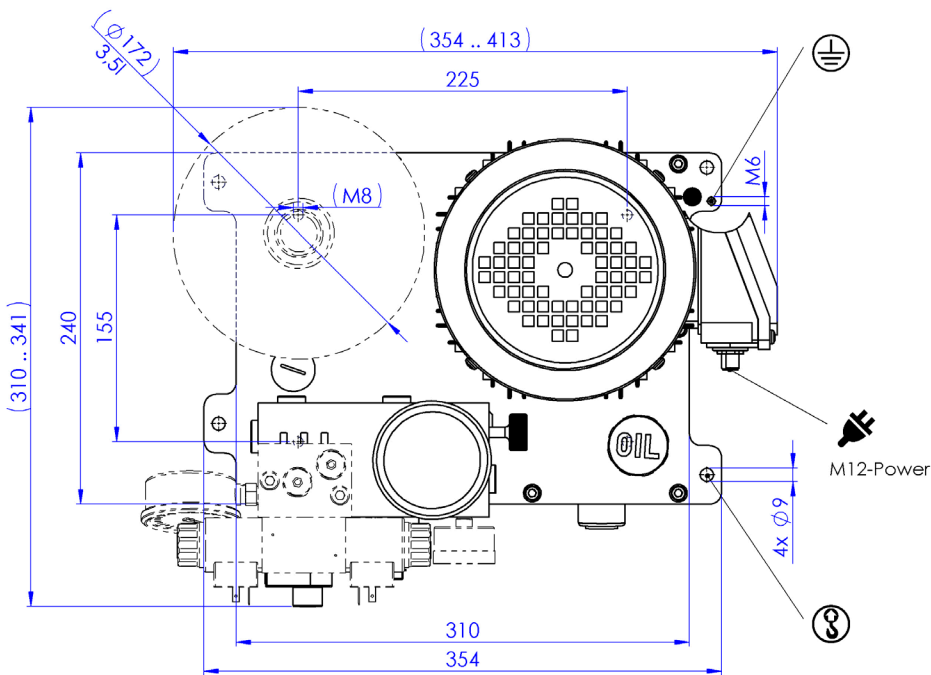
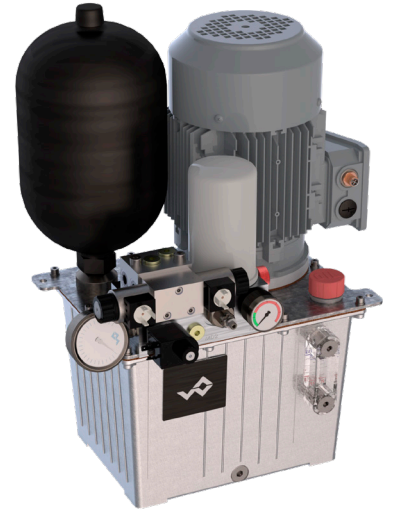
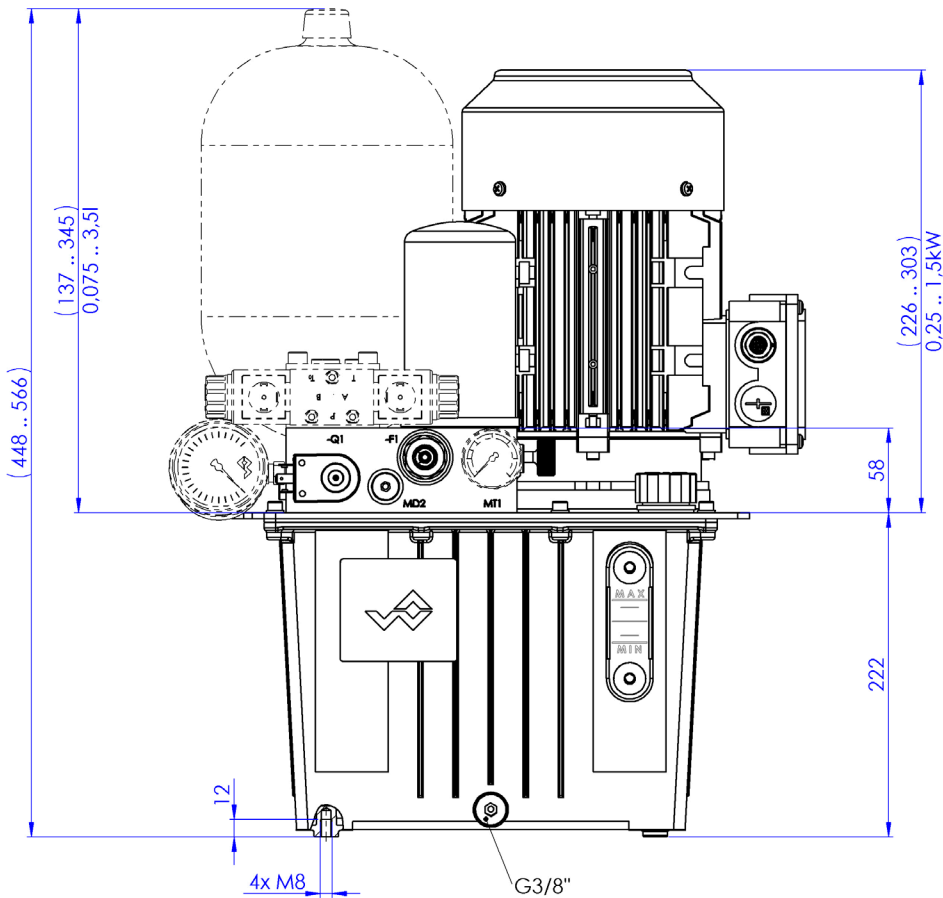
**DIMENSIONS**

Dimension drawing for BMN 6,3-4CN



**DIMENSIONS**

Dimension drawing for BMN 10-4FN (Flex NG4)



**DIMENSIONS**

Dimension drawing for BMN 25-6RD (Reform with pressure filter)

