

Compact hydraulic power unit

Type BKA

Single- and two-stage **up to 700 bar**

LP: 100 bar / 2,8 to 10,4 l/min

HP: 700 bar / 0,3 to 1,8 l/min

Features

- Compact design
- Self-venting
- Various combinations possible
- Single- or two-stage models



Design

- Integrated low-pressure unloading valve
- Integrated pressure relief valve
- Assembly of valve banks possible
- Standard interface for electric motors from 0,55 to 2,2 kW
- Various tank sizes

Applications

- Presses
- Rescue equipment
- Punching
- Torque wrenches
- Clamping tools
- Test equipment
- Crimping tools
- General mobile applications

Technical Data

Hydraulic fluid	Mineral oil according to DIN ISO 6743-4 (other fluids on request)	
Fluid temperature range	-20 to 80 °C	
Ambient temperature range	-20 to 50 °C	
Viscosity range	12 to 220 mm ² /s	
Max. operating pressure HP	700 bar (preset to 700 bar, other presettings on request)	
Max. operating pressure LP	150 bar (preset to 100 bar, other presettings on request)	
Noise level	approx. 86 dB (at 3'000 min ⁻¹ / 3'600 min ⁻¹) approx. 78 dB (at 1'500 min ⁻¹ / 1'800 min ⁻¹)	
Filtration (recommended)	According to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12	
Dimensions and weight	See dimension table page 6	
Installation position	Vertical	
Material	Excentric shaft:	steel
	Pump housing:	aluminium
	Tank:	plastic, stainless steel (aluminium)

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Type code

Example

BKA - **E** - **1** **15** - **1,1** - **0,60/700** - **3,32/100** - **2** - **M** - **00**

Bieri compact power unit

Drive E (electrical motor)

For electrical motors

- 1 (1-phase 230V)
- 2 (1-phase 115V)
- 3 (3-phase 230V)
- 4 (3-phase 400V)

Rotation speed

- 15 (1'500 min⁻¹)
- 18 (1'800 min⁻¹)
- 30 (3'000 min⁻¹)
- 36 (3'600 min⁻¹)

Drive power

- 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)

Flow rate ratio HP / Pressure HP

see table page 5

Flow rate ratio LP / Pressure LP (only for 2-stages)

see table page 5

Tank volume

- 2 2 litre (plastic tank)
- 6 6 litre (plastic tank)
- 7 7 litre (stainless steel tank)

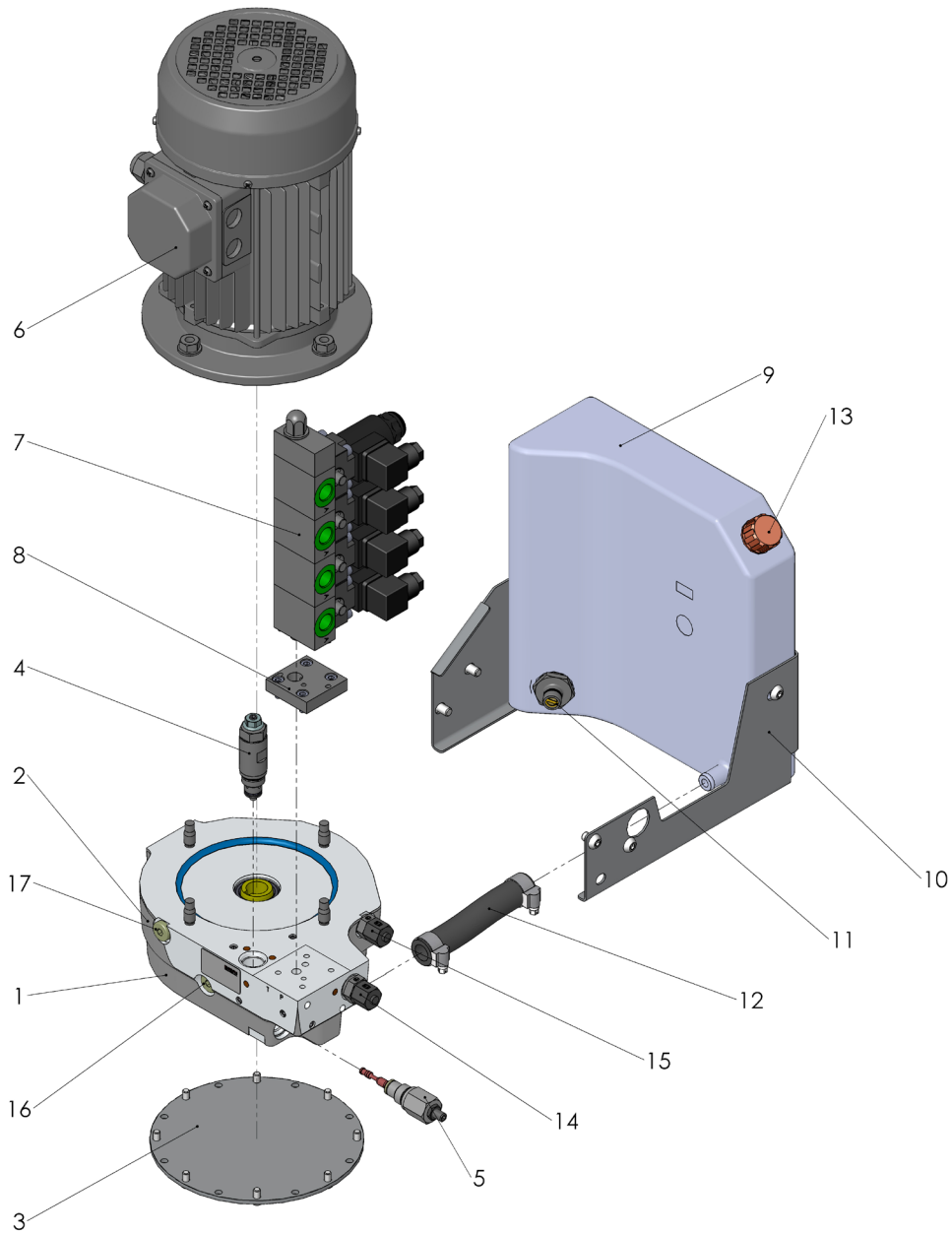
Options

- X (without options)
- M (pressure gauge)
- P (pressure switch)
- S (pressure sensor)

Special model

- 01 ... 99
- (00 for standard)
- 01 (with bypass valve 24VDC)
- 02 (with bypass valve 230VAC)
- 03 (with bypass valve 110VAC)

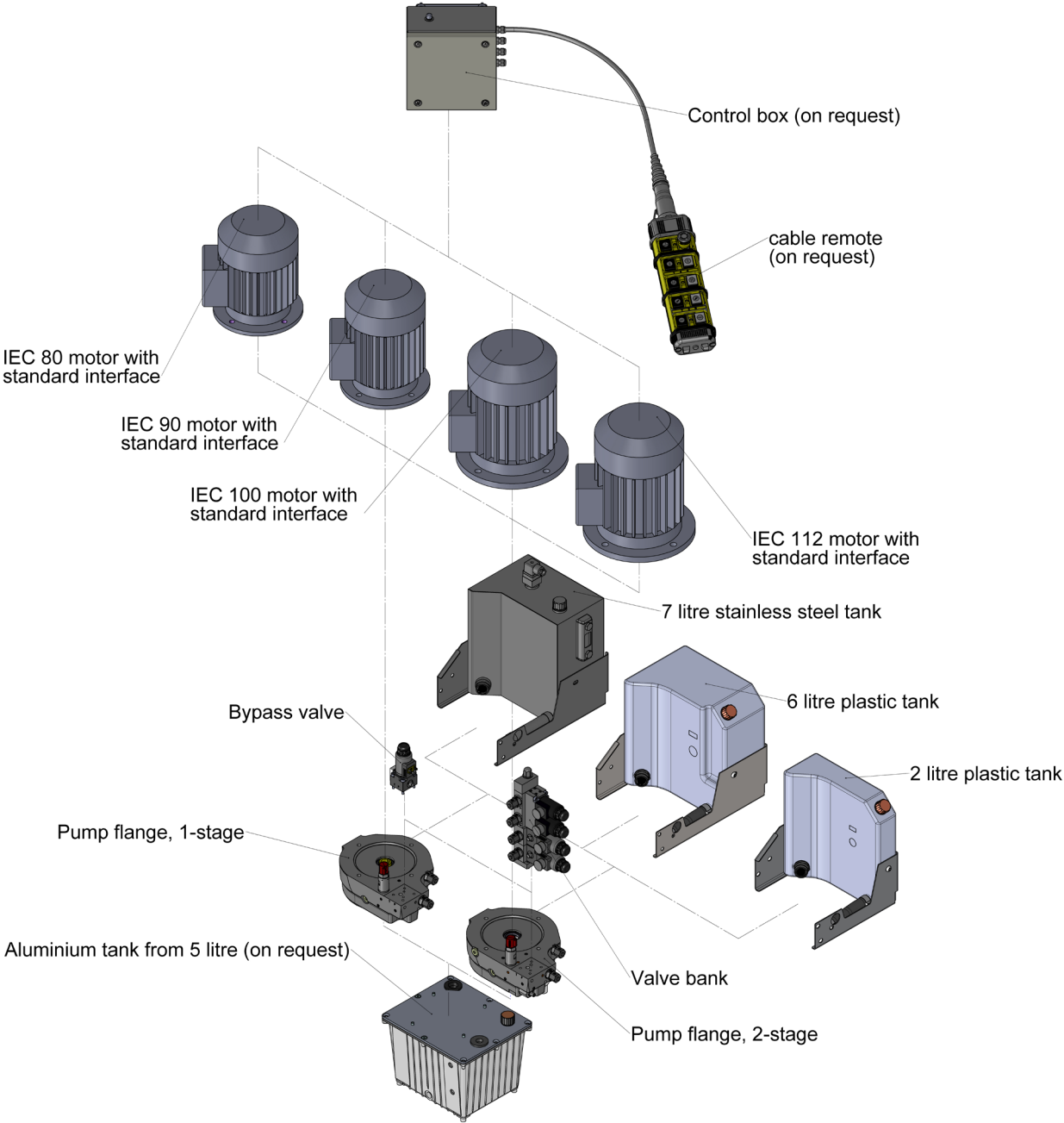
Main components



Pos.	Komponente	Pos.	Komponente
1	Pump	10	Tank frame
2	Pump flange	11	Suction
3	Pump lid	12	Return line
4	Pressure relief valve	13	Filling
5	Pressure unloading valve (only for 2-Stage power units)	14	Pressure port with GE screw fitting
6	Electric motor	15	Measuring port with GE screw connection
7	Control valve (optional)	16	Air-vent screw
8	Adapter plate (optional)	17	Low pressure port (only for 2-Stage power units)
9	Tank		

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Assembly options



Selection tables flow rates for LP and HP

1-stage unit (1'500 min⁻¹ / 1'800 min⁻¹)

1-stage unit (3'000 min⁻¹ / 3'600 min⁻¹)

	Flow rate ratio HP	1'500 min ⁻¹ (50 Hz)	Flow rate ratio HP	1'800 min ⁻¹ (60 Hz)	Flow rate ratio HP	3'000 min ⁻¹ (50 Hz)	Flow rate ratio HP	3'600 min ⁻¹ (60 Hz)
Power [kW]	Vg (HP) [cm ³ /rev]	Q (HP) [l/min]	Vg (HP) [cm ³ /rev]	Q (HP) [l/min]	Vg (HP) [cm ³ /rev]	Q (HP) [l/min]	Vg (HP) [cm ³ /rev]	Q (HP) [l/min]
0,55	0,31	0,42	0,24	0,40	0,14	0,38	0,14	0,46
0,75	0,38	0,53	0,32	0,54	0,21	0,57	0,17	0,57
1,1	0,59	0,81	0,49	0,81	0,31	0,83	0,27	0,90
1,5	0,85	1,17	0,69	1,14	0,43	1,17	0,38	1,26
2,2	1,22	1,68	0,97	1,62	0,64	1,75	0,54	1,78

2-stage unit (1'500 min⁻¹ / 1'800 min⁻¹)

	Flow rate ratio HP	1'500 min ⁻¹ (50 Hz)	Flow rate ratio LP	1'500 min ⁻¹ (50 Hz)	Flow rate ratio HP	1'800 min ⁻¹ (60 Hz)	Flow rate ratio LP	1'800 min ⁻¹ (60 Hz)
Power [kW]	Vg (HP) [cm ³ /rev]	Q (HP) [l/min]	Vg (LP) [cm ³ /rev]	Q (LP) [l/min]	Vg (HP) [cm ³ /rev]	Q (HP) [l/min]	Vg (LP) [cm ³ /rev]	Q (LP) [l/min]
0,55	0,29	0,40	1,99	2,75	0,24	0,39	1,68	2,80
0,75	0,42	0,58	2,93	4,03	0,34	0,56	2,43	4,04
1,1	0,60	0,83	3,32	4,57	0,47	0,78	3,19	5,30
1,5	0,76	1,06	3,48	4,80	0,68	1,14	3,40	5,65
2,2	1,15	1,58	3,86	5,32	0,94	1,57	3,66	6,08

2-stage unit (3'000 min⁻¹ / 3'600 min⁻¹)

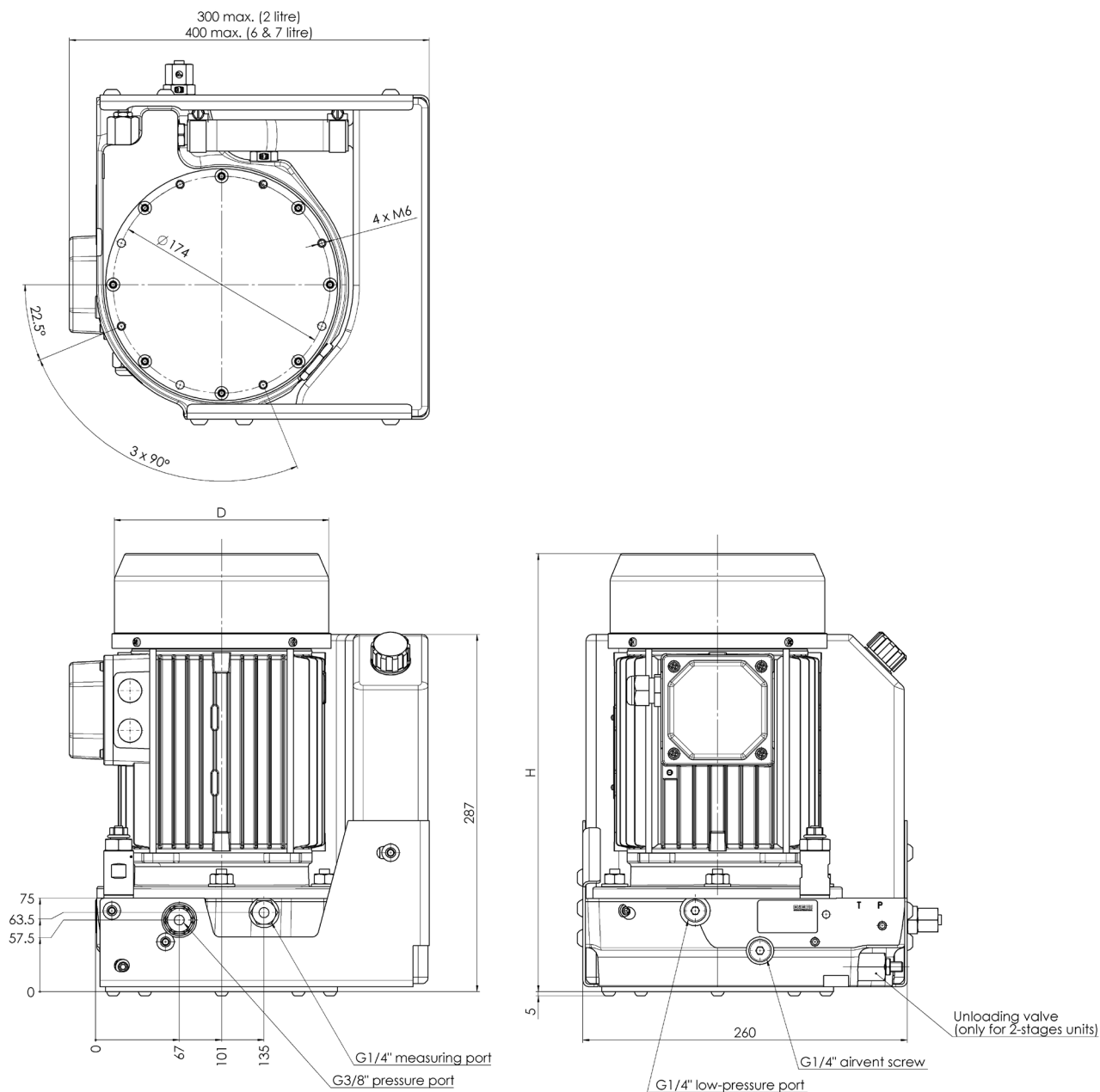
	Flow rate ratio HP	3'000 min ⁻¹ (50 Hz)	Flow rate ratio LP	3'000 min ⁻¹ (50 Hz)	Flow rate ratio HP	3'600 min ⁻¹ (60 Hz)	Flow rate ratio LP	3'600 min ⁻¹ (60 Hz)
Power [kW]	Vg (HP) [cm ³ /rev]	Q (HP) [l/min]	Vg (LP) [cm ³ /rev]	Q (LP) [l/min]	Vg (HP) [cm ³ /rev]	Q (HP) [l/min]	Vg (LP) [cm ³ /rev]	Q (LP) [l/min]
0,55	0,12	0,32	1,06	2,87	0,12	0,39	0,93	3,04
0,75	0,24	0,64	1,44	3,90	0,17	0,56	1,24	4,08
1,1	0,34	0,92	2,22	6,02	0,24	0,77	1,76	5,78
1,5	0,42	1,14	2,93	7,92	0,34	1,11	2,43	7,97
2,2	0,60	1,63	3,32	8,98	0,47	1,54	3,19	10,44

All performance and flow rates are based on HP 700 bar and LP 100 bar. Values for deviating Pressure settings according to customer specification on request.

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 HP: 700 bar / 0,3 to 1,8 l/min

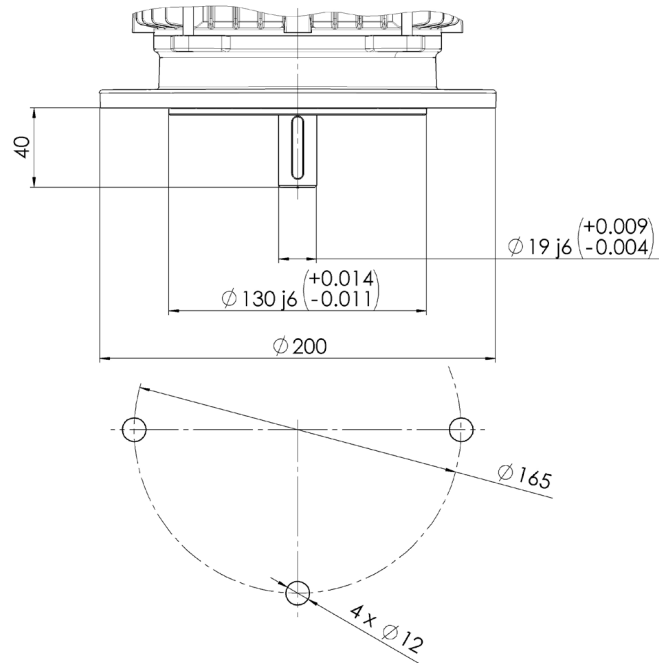
Dimensional drawings



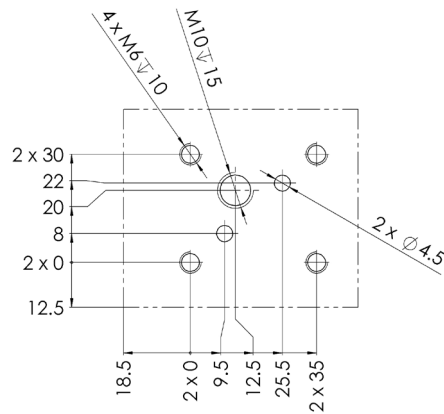
Dimension table [mm]

Motor [kW]	1-phase		3-phase				1-stage	2-stage	Weight approx. (without oil) [kg]	
	1'500 min ⁻¹ / 1'800 min ⁻¹ D	H	1'500 min ⁻¹ / 3'000 min ⁻¹ D	3'000 min ⁻¹ / 3'600 min ⁻¹ H	1'500 min ⁻¹ / 1'800 min ⁻¹ D	H	3'000 min ⁻¹ / 3'600 min ⁻¹ D	H		
0,55	160	315	160	315	160	315	160	315	15	18
0,75	160	315	160	315	160	315	160	315	16	19
1,1	175,5	330	160	315	175,5	330	160	315	18	21
1,5	175,5	353	175,5	330	175,5	353	160	315	20	23
2,2	194	382	175,5	353	175,5	353	175,5	353	22	25

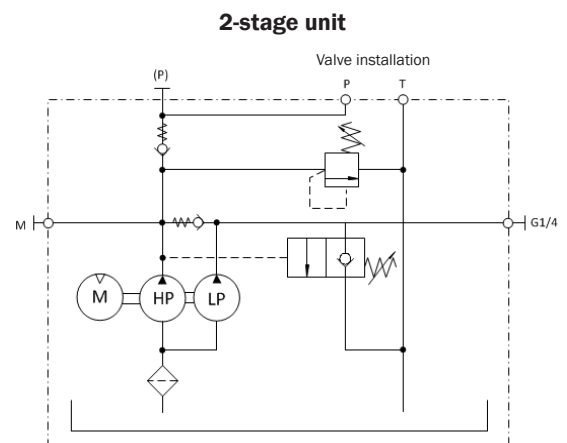
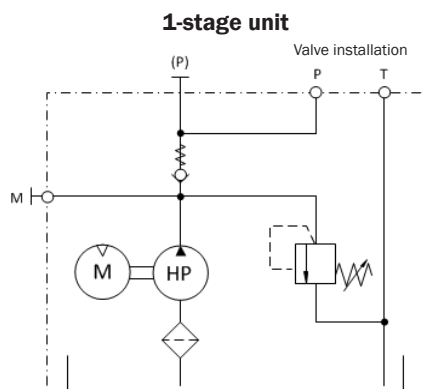
Standard interface for electric motor
 according to IEC size 80 and B5 flange



Drilling pattern
 according to Bieri



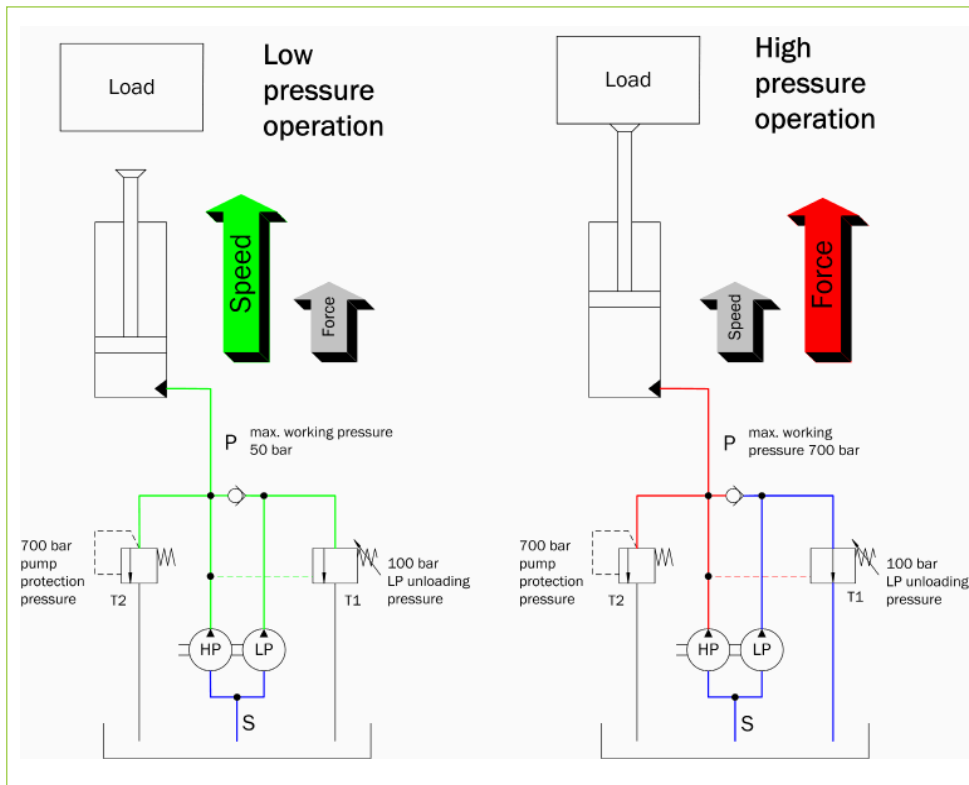
Hydraulic schematics



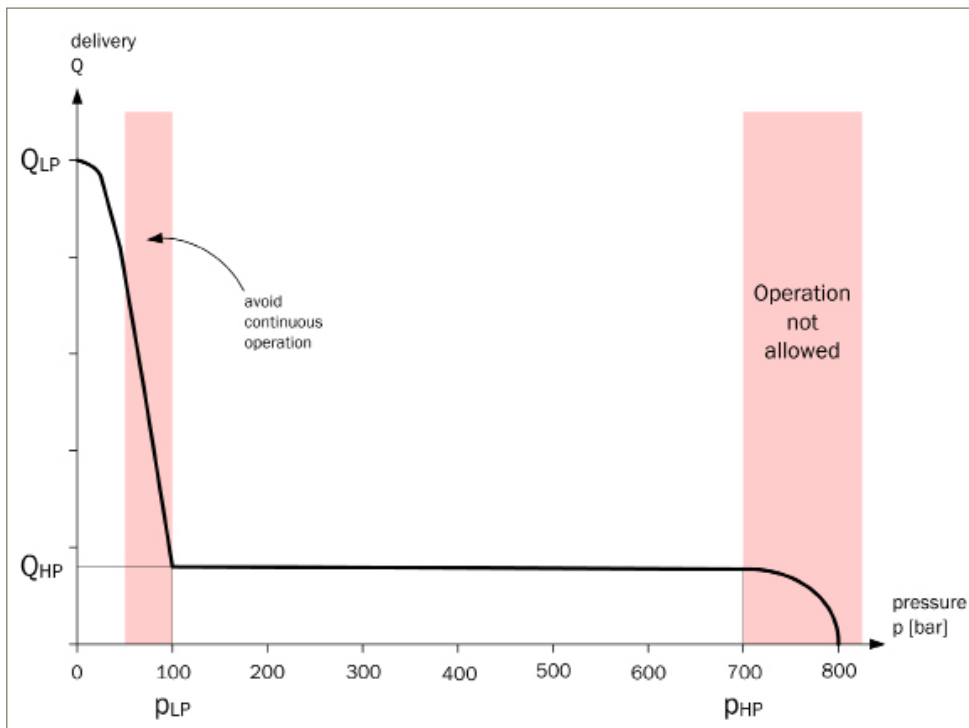
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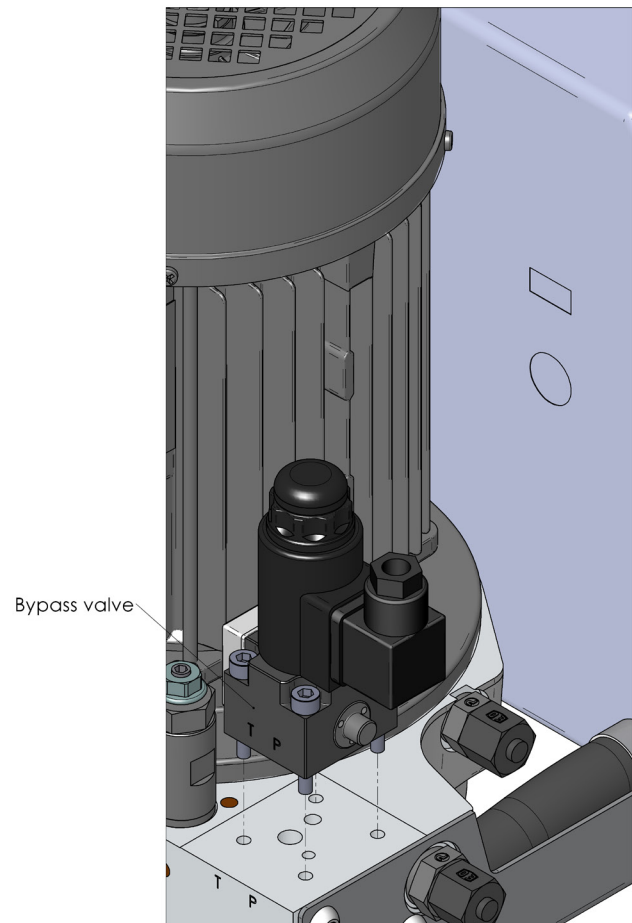
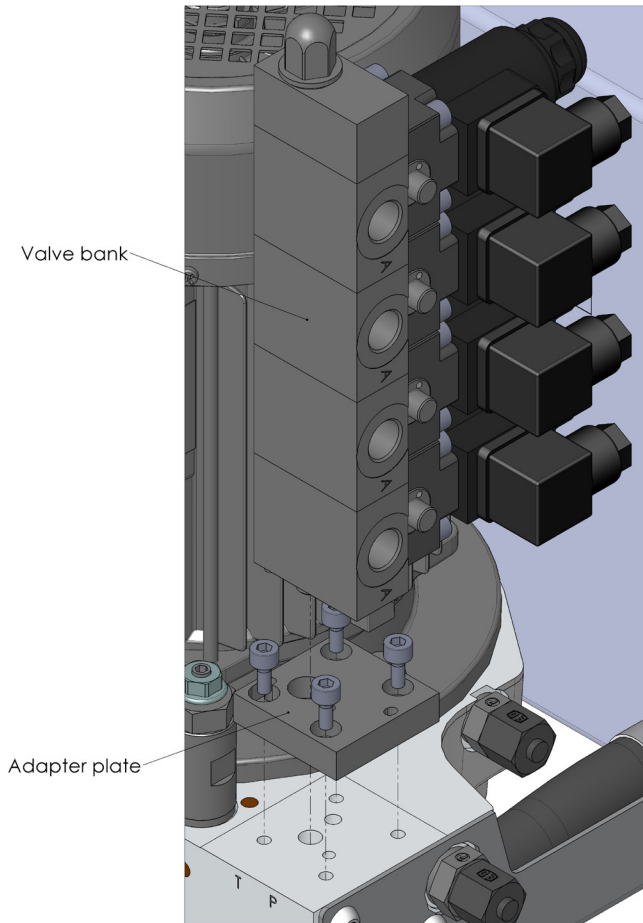
Functional schematic



Pressure diagram



Valve installation



(Valve see data sheet WVM-4B/WVH700)

Type	Part. No
Adapter plate	4002724

Type BKA

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Specification of BKA

Company:	Date:
Name:	Deadline offer:
E-Mail:	Curr. supplier:
Phone:	Application:

Requirement forecast

Requirement	Lot size	Target price	Delivery time as of order
Master sample			
Year 1			
Subsequent years			

Technical requirements

Feature	Specification
Design basis	
Pressure stages	<input type="checkbox"/> 1-circuit system with one pressure stage <input type="checkbox"/> 1-circuit system with two pressure stages
Starting of the drive under pressurized pump	<input type="checkbox"/> required <input type="checkbox"/> not required
Expected number of load cycles
Operating cycle (idle / medium load / full load) s / s / s bar / bar / bar
Information on mechanical interfaces	<input type="checkbox"/> Holding bracket for oil tank <input type="checkbox"/> Damping elements <input type="checkbox"/> Platform
Desired operating medium
Environmental conditions	
Place of installation	<input type="checkbox"/> Closed room <input type="checkbox"/> Outdoor area <input type="checkbox"/> ATEX-area <input type="checkbox"/>
Temperature range	min. Temperature °C max. Temperature °C
Other environmental conditions	<input type="checkbox"/> Warm and humid environment <input type="checkbox"/> Dusty environment <input type="checkbox"/> Salty environment <input type="checkbox"/>
Dimensions	
max. installation space (L x W x H) mm x mm x mm
Weight (incl. fluid) kg
Useable volume oil tank	<input type="checkbox"/> 2 L <input type="checkbox"/> 6 L <input type="checkbox"/> 7 L <input type="checkbox"/>

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Electrical data

Nominal motor power	<input type="checkbox"/> 0,55 kW	
	<input type="checkbox"/> 0,75 kW	
	<input type="checkbox"/> 1,1 kW	
	<input type="checkbox"/> 1,5 kW	
	<input type="checkbox"/> 2,2 kW	
Motor voltage	<input type="checkbox"/> Alternating current 1-phase 230 V	<input type="checkbox"/> Three-phase current 3-phase 400 V
Nominal speed (frequency dependent)	<input type="checkbox"/> 1'500 min ⁻¹ (50Hz)	<input type="checkbox"/> 3'000 min ⁻¹ (50Hz)
	<input type="checkbox"/> 1'800 min ⁻¹ (60Hz)	<input type="checkbox"/> 3'600 min ⁻¹ (60Hz)
Maximum permissible current consumption at nominal load A	
Maximum permissible starting current consumption at nominal load A	
Valve control voltage	<input type="checkbox"/> 24 V (DC)	
	<input type="checkbox"/> 110 V (AC)	
	<input type="checkbox"/> 230 V (AC)	
Other electrical equipment (on arrangement)	<input type="checkbox"/> Switches	
	<input type="checkbox"/> Cable	
	<input type="checkbox"/> Plug	
	<input type="checkbox"/>	

Pump unit

Max. operating pressure HP	<input type="checkbox"/> 700 bar (default)	
	<input type="checkbox"/> bar (max. 700 bar)	
Shut-off pressure LP (only for 2 pressure stages)	<input type="checkbox"/> 100 bar (default)	
	<input type="checkbox"/> bar (max. 150 bar)	
Nominal flow rate	LP ca. l/min	HP ca. l/min

Valve equipment

Function	See data sheets WVM-4B and WVH700	
Other hydraulic equipment (by arrangement)	<input type="checkbox"/> Pressure gauge	
	<input type="checkbox"/> Return flow filter	
	<input type="checkbox"/> Oil cooler	
	<input type="checkbox"/> Hydraulic hoses	
	<input type="checkbox"/> Additional connection for tank reflow	<input type="checkbox"/> G1/4"
	<input type="checkbox"/>	<input type="checkbox"/> G3/8"
	<input type="checkbox"/> Hydraulic couplings	
<input type="checkbox"/> ...		

Note:

If available, please attach descriptions, hydraulic diagrams, technical data and sketches.

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The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.