

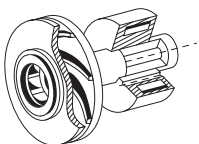
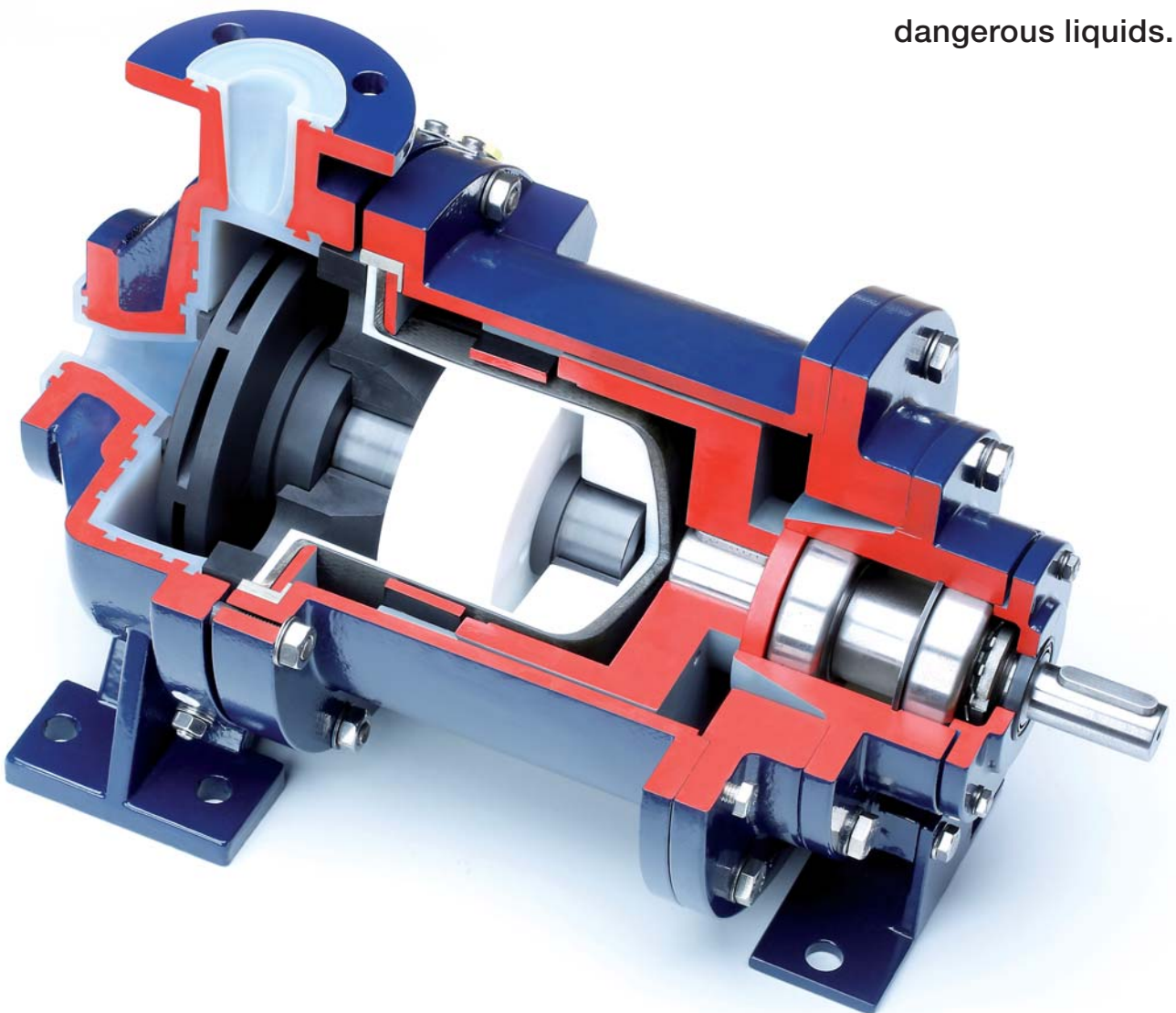


Chemical Magnetic Pumps with PTFE/PFA lining

ATEX- and FDA compliant



Highly corrosion-resistant pumps for absolute aggressive liquids and dangerous liquids.



**GEKO-
PUMPEN**

Energy-efficient pumps and chemical pumps

Sustainable environmental protection!

The GEKO-Pumpen GmbH contributes by development und manufacturing of their pumps for an active and sustainable environmental protection.

To counter the increasing energy needs, our engineers have systematically improved the pumps to the required energy savings.

With the following activities, the efficiency of the pumps was improved compared to conventional lined pumps on the market:

- Use of non-metallic isolation shells made of carbon-fibre (without eddy-current losses)
- Use of impellers with optimised shovels
- Use of optimised bearing materials

Quality is our maxim

Selected suppliers as well as trained personnel are the basis for our estimated product quality. Together with the industry-wide shortest delivery times our company is well prepared for the future jobs.

Innovative products and our fast customer service push on our expansion.



**Always committed to the environment!
Chemical pumps from GEKO.**

GEKONORM NM

Standard chemical pumps with magnetic drive

The NM series

Magnetic driven centrifugal pumps of the NM series are chemical centrifugal pumps with PTFE/PFA lining. Their dimensions and nominal duty points are according to the DIN EN 22858 standard. They are available as either NM pumps in pull-out design with bare-shaft ends or as BM pumps in close coupled design with flange-mounted drive motor. The pumps are resistant to almost all kinds of fluids, and will be only in contact with PTFE/PFA, oxide ceramic, zirconium oxide or silicon carbide.

Design

NM pumps are magnetic driven single-stage pumps with an annular-casing without sealing. The isolation-shell hermetically closes the pump which is absolutely leak-proof. This isolation-shell is either made of carbon-fibre composite material and lined with PTFE or made of zirconium oxide. The closed impeller made of PTFE is mounted to a hollow ceramic shaft with double sleeve bearings made of silicon carbide. Due to this hollow shaft, the sleeve bearings are always impeccably lubricated and cooled, even under difficult operating conditions. So the pump is less sensitive to incomplete lubrication and/or dry running.

Magnetic power transmission

The permanent-magnetic transmission system consists of a PTFE coated inner magnet and a flywheel-mass with outer magnets. The permanent magnets are made of cobalt and samarium. An isolation-shell with PTFE lining or made of zirconium oxide hermetically closes the pump which is absolutely leak-proof.

Fields of application

As they are absolutely leak-proof, NM pumps are always used to deliver highly aggressive or dangerous liquids. Thus, users in all fields of the chemical and pharmaceutical industries have relied on our pumps for long. The standard chemical pumps are available either in pull-out design or in compact monobloc design with flange-mounted motor.



With its solid and intelligent design, the magnetic driven standard chemical pump of the GEKONORM NM series is perfectly suited for continuously reliable use in the chemical and pharmaceutical industries.

GEKONORM NM

In detail



Energy saving, because of using carbon-fibre parts without eddy-current losses.



Maintenance-free ball-bearings for optimal smooth running.



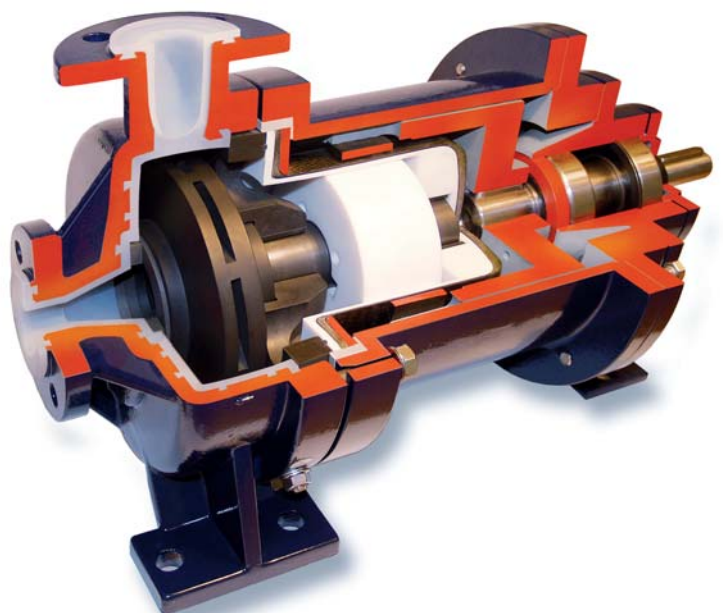
PTFE-impeller with shovels for higher efficiency.

Technical data

- Pump casing made of GGG-40.3 lined with 4 mm thick PFA. Axial suction flange. Discharge flange mounted radially upwards. Flange connections acc. to DIN 2501/1 standard. All sizes are designated acc. to DIN EN ISO 2858 standard
- Minimum flow rate is 0,5 m³/h
- Internal pressure: overpressure of 16 bars at 150 °C
- Maximum operating temperature is 150 °C (higher temperatures available upon request)
- Closed or open impeller made of PTFE with curved blades
- Isolation-shell made of carbon-fibre composite material and lined with PTFE or made of zirconium oxide
- Slide bearings made of pure silicon carbide
- Our standard drive system is an explosionproof three-phase motor acc. to EEx e II T3 (Atex)

The advantages

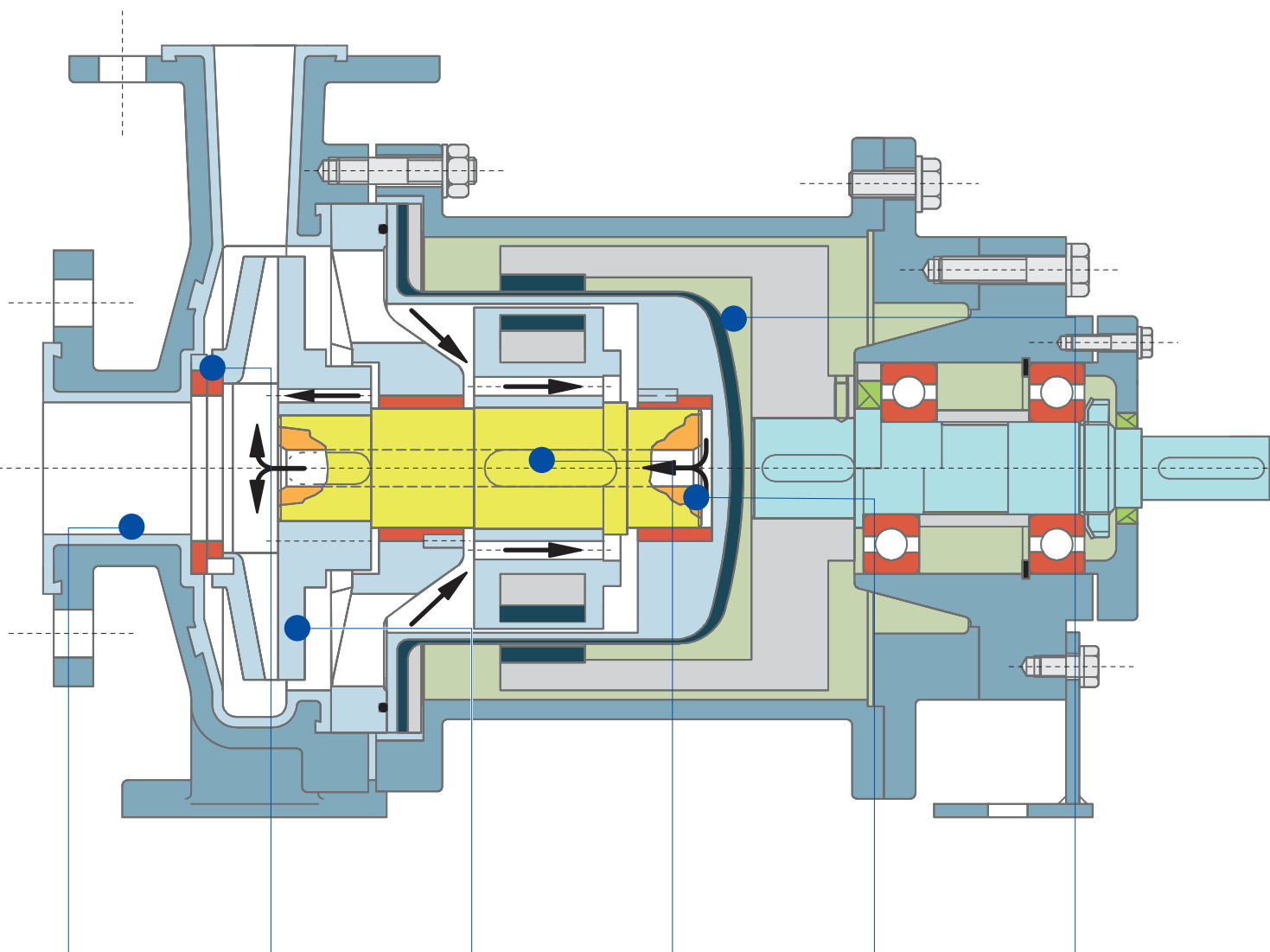
- Bored ceramic shaft for internal split-stream circulation
- Less sensitive to incomplete lubrication
- Impellers with curved blades for more efficiency
- No eddy-current losses due to metal-free isolation-shell
- PTFE parts free of metallic framework
- Silicon-carbide pressure bearings of optimal dimensions take the axial thrust
- Special versions are also available



GEKONORM NM pumps are of strong design.

GEKONORM NM

Sectional drawing



Vacuum-proof case lining of PFA, 4 mm thick

Pressure bearings with optimal dimensions to take the axial thrust

PTFE impeller with curved blades for more efficiency

Special PTFE keys for power transmission

Bored shaft ensure for forced internal circulation to improve the lubrication of the bearings

Metal-free isolation-shell made of carbon-fibre to prevent eddy-current losses

Safe and environmentally friendly

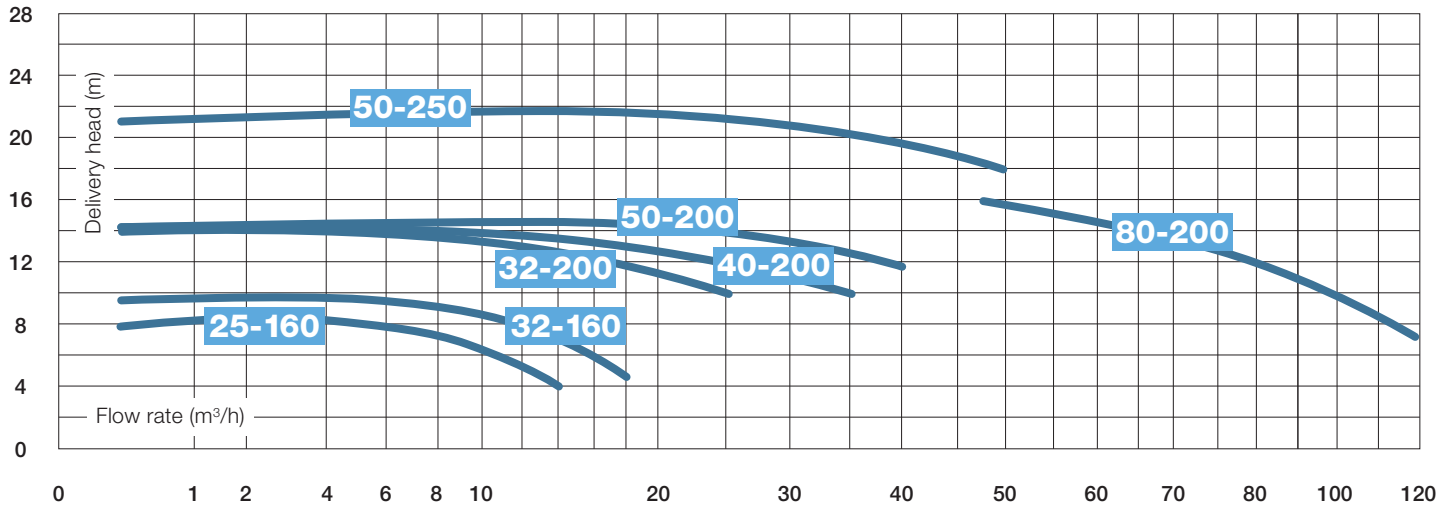
Our pumps allow you to safely and environmentally friendly deliver highly aggressive liquids like, for example, monochloroacetic acid, sulphuric acid and hydrofluoric acid, because using only corrosion-resistant materials.



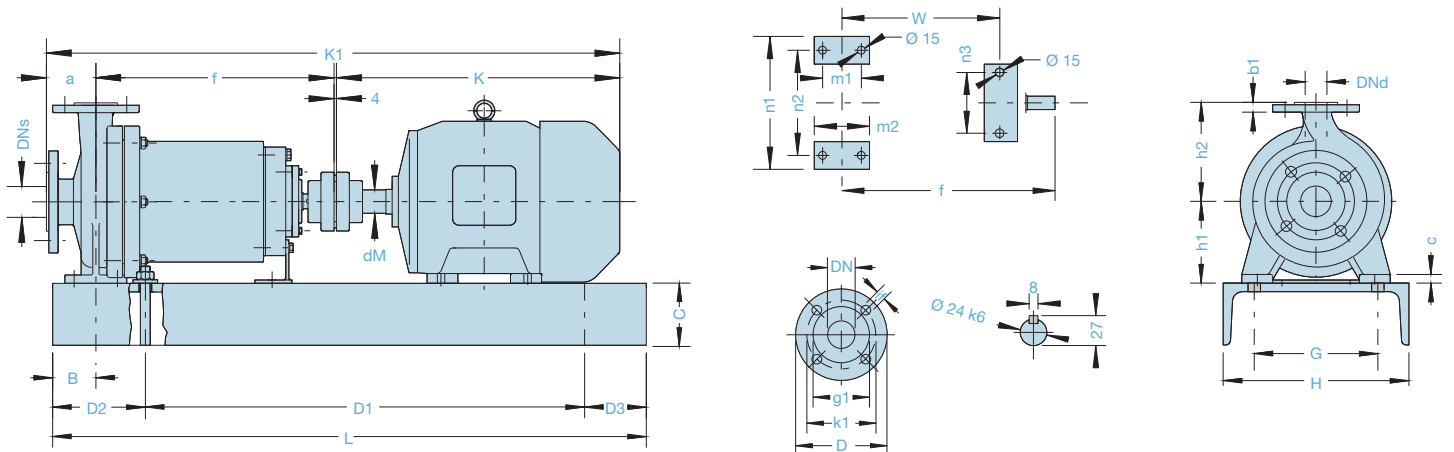
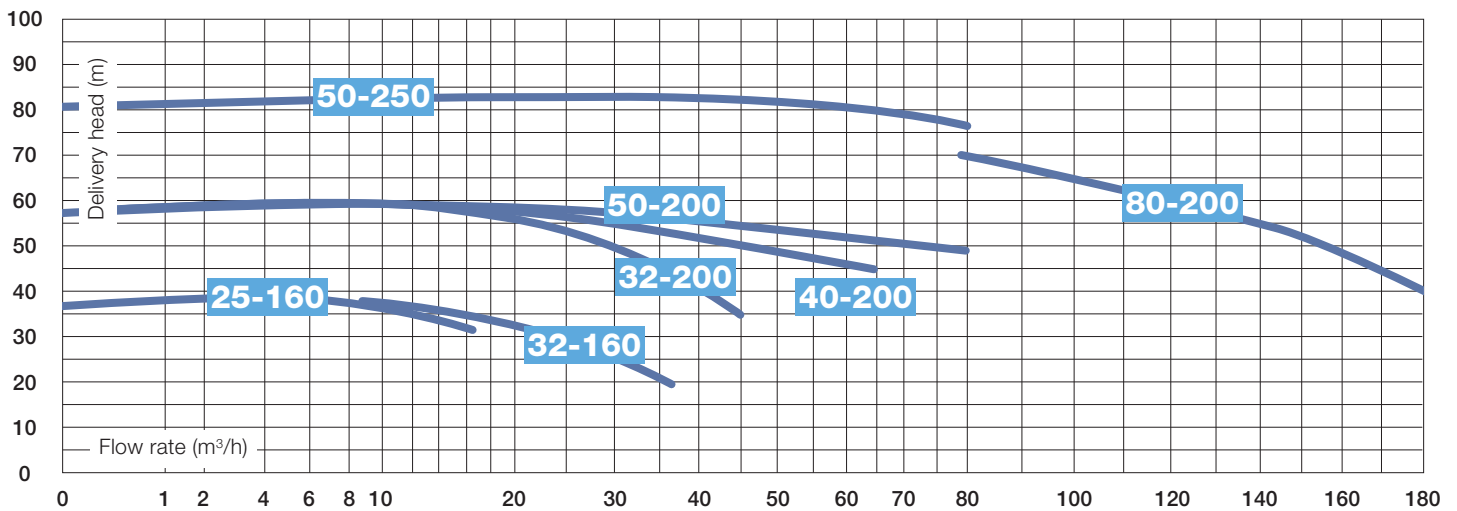
GEKONORM NM

Characteristic curves and dimensional drawings

Characteristic curves NM (n = 1450 rpm, 50 Hz)



Characteristic curves NM (n = 2900 rpm, 50 Hz)



GEKONORM NM with bare-shaft

Technical data and standard dimensions

(Special dimensions depending on motordesign)

Base plate, motor and foundation bolts (mm)

Type	motor	H	D1	D2	D3	L	G	C	B	K	K1	ØdM	DIN 529 foundation- bolts
G1	90L	300	620	150	100	870	190	100	70	325	798	24	M16 x 220
G1	100L	300	620	150	100	870	190	100	70	383	852	28	M16 x 220
G1	112M	300	620	150	100	870	190	100	70	389	858	28	M16 x 220
G2	132S	350	710	150	100	960	250	100	70	458	927 ¹⁾	38	M16 x 220
G2	132M	350	710	150	100	960	250	100	70	496	985	38	M16 x 220
G3	160M	400	835	185	60	1080	280	110	100	628	1097 ²⁾	42	M20 x 220
G3	160L	400	835	185	60	1080	280	110	100	672	1161	42	M20 x 220
G3	180M	400	835	185	60	1080	280	110	100	696	1185	48	M20 x 220
G4	200L	400	955	185	60	1200	280	110	100	766	1255	55	M20 x 220

1) at 40-200 and 50-200 = 947 2) at 40-200 and 50-200 = 1117

Pump and foot dimensions (mm)

Pump dimensions (mm)				foot dimensions (mm)												
pump size	DN _s	DN _b	a	f	h1	h2	b	c	m1	m2	n1	n2	n3	ØS	W	
25-160	25	25	80	385	132	160	50	14	70	100	240	190	110	15	285	
32-160	50	32	80	385	132	160	50	14	70	100	240	190	110	15	285	
32-200	50	32	80	385	160	180	50	14	70	100	240	190	110	15	285	
40-200	65	40	100	385	160	180	50	14	70	100	265	212	110	15	285	
50-200	80	50	100	385	160	200	50	14	70	100	265	121	110	15	285	
50-250	80	50	125	500	180	225	65	14	95	125	320	250	110	15	370	
80-200	125	80	125	500	180	250	65	14	95	125	345	280	110	15	370	

Pumps with bare-shaft

DN	Ø flange (D)	Ø pitch circle (k1)	Ø raised face (g1)	bolts quantity	Ø hole (if)
25	115	85	68	4	14
32	140	100	78	4	18
40	150	110	88	4	18
50	165	125	102	4	18
65	185	146	122	4	18
80	200	160	138	8	18
125	250	210	182	8	18

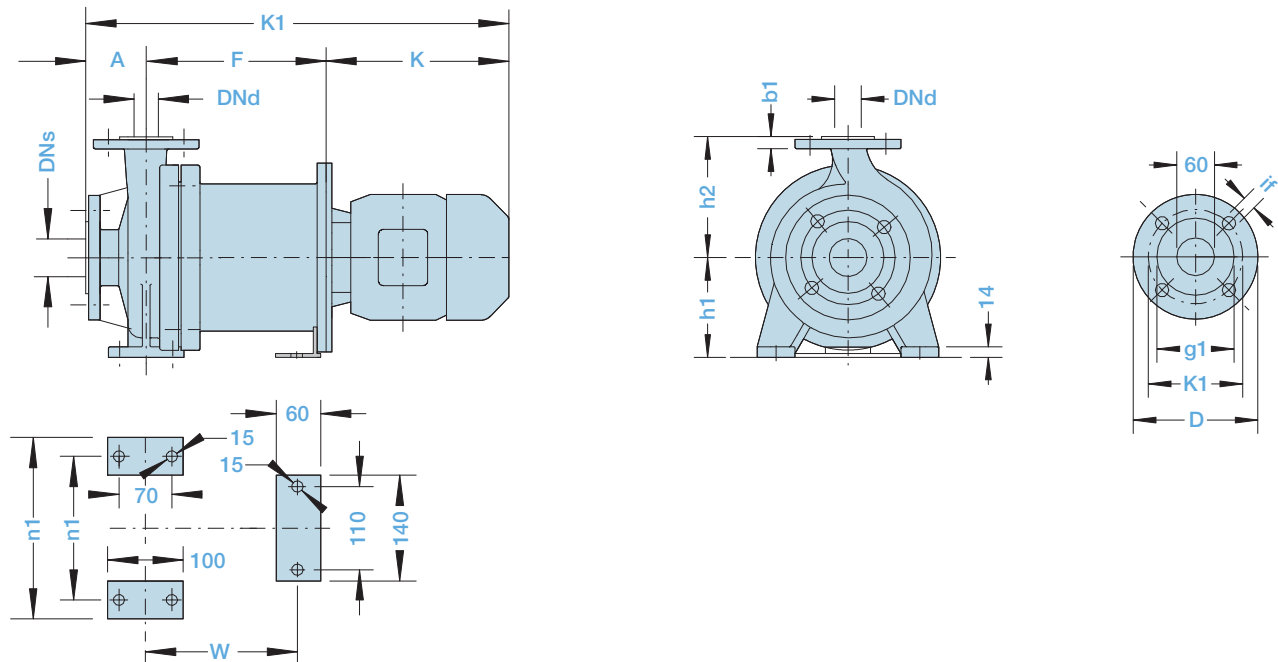
Shaft end

Pump size	Ø d _{k6}	l	t	u
25-160	24	50	27	8
32-160	24	50	27	8
32-200	24	50	27	8
40-200	24	50	27	8
50-200	24	50	27	8
50-250	32	80	35	10
80-200	32	80	35	10

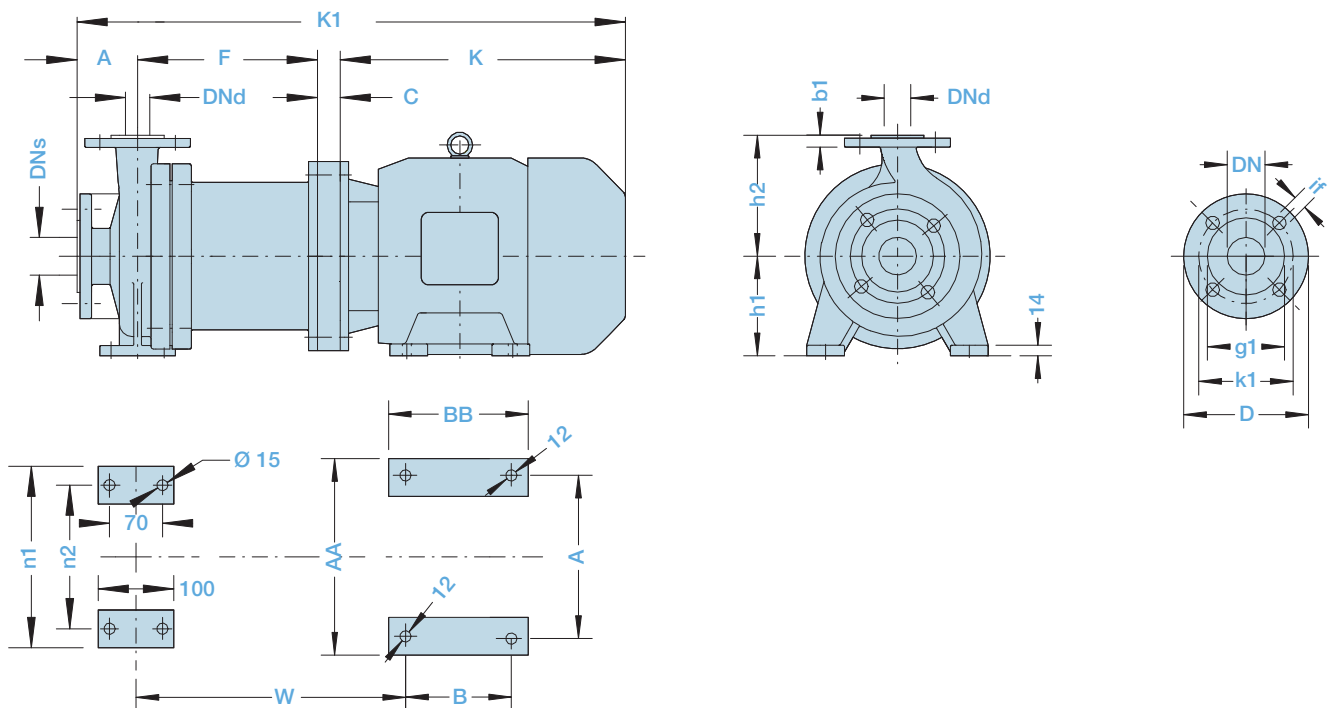
GEKOBLOCK BM in close coupled design

Dimensional drawings

GEKOBLOCK BM (n = 1450 rpm, 50 Hz)



GEKOBLOCK BM (n = 2900 rpm, 50 Hz)



GEKOBLOCK BM

Technical data und standard dimensions

Technical data of pumps with 2900 rpm

Pump size	DN _s	DN _b	A	F	b1	c	h1	h2	n1	n2	W
25-160	25	25	80	238	16	30	132	160	240	190	406
30-160	50	32	80	238	18	30	132	160	240	190	406
32-200	50	32	80	248	18	50	160	180	240	190	406
40-200	65	40	100	248	18	50	160	180	265	212	406

Motor dimensions

Pump size	kW	motor dimensions			A	AA	B	BB	K1	K
		type	Ø flange							
25/32-160	4,6	132S	250	216	260	140	185	716	368	
25/32-160	5,5	132S	250	216	260	140	185	716	368	
32-200	7,5	160M	300	254	314	210	264	879	501	
40-200	7,5	160M	300	254	314	210	264	899	501	
40-200	10	160M	300	254	314	210	264	899	501	
40-200	12,8	160L	300	254	314	254	308	843	545	

Technical data of pumps with 1450 rpm

Pump size	DN _s	DN _b	A	F	K1	K	b1	h1	h2	n1	n2	W
25-160	25	25	80	238	593	275	16	132	160	240	190	199
32-160	50	32	80	238	593	275	18	132	160	240	190	199
32-200	50	32	80	248	705	357	18	160	180	240	190	209
40-200	65	40	100	248	705	357	18	160	180	265	212	209

Motor size

Flanges according to DIN 2501/1 standard for PN16

Pump size	motor		DN	Ø flange (D)	Ø pitch circle (k1) (k1)	Ø raised face (g1)	bolts	
	kW	type					quantity	Ø hole (if)
25/32-160	1,1	90S	25	115	85	68	4	14
25/32-160	1,5	90L	32	140	100	78	4	18
32-200	4	112M	40	150	110	88	4	18
40-200	4	112M	50	165	125	102	4	18
			65	185	146	122	4	18

GEKOBLOCK PM

Magnetic driven chemical peripheral pumps

The PM series

GEKOBLOCK PM pumps are peripheral pumps with PTFE/PFA lining in close coupled design without any shaft-seal. The pumps are hermetically closed and do not need any packing at all.

They are resistant to almost all kinds of fluids. The fluids will be only in contact with PTFE/PFA, oxide ceramic, zirconium oxide or silicon carbide.

Fields of application

PM pumps are peripheral or side-channel pumps which are best suited to deliver small to medium volume flows at high pressure of up to 8 bars.

Like the pumps of the NM series, these pumps are also resistant to almost all kinds of corrosion.

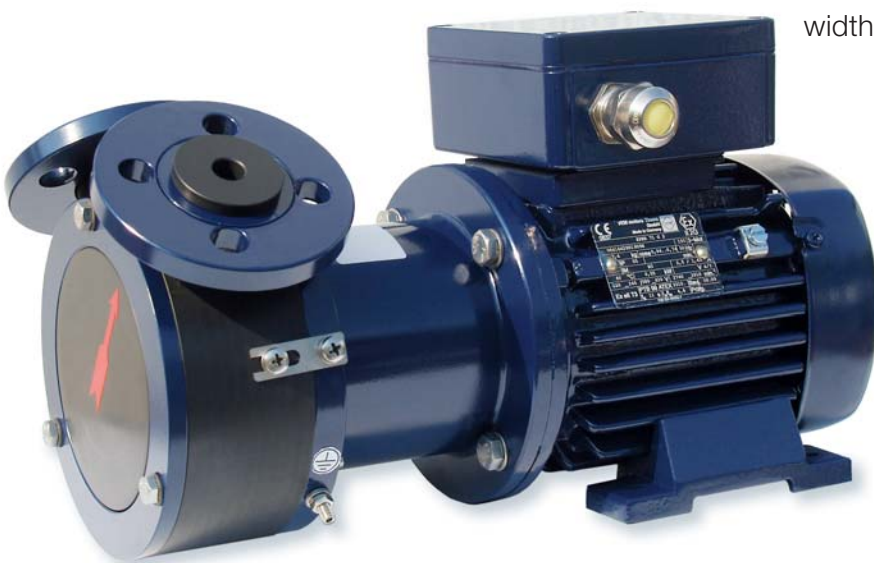
Thus, they are ideal for the absolutely leak-proof delivery of highly aggressive and dangerous liquids that are free of abrasive or crystalline components. The pumps are also best suited to deliver liquids with low boiling points as they are completely insensitive to cavitation. The volume flow may even contain up to 30 % of gas.

Design

PM pumps are magnetic driven single-stage peripheral pumps without a shaft seal. The pump casing is either made of GGG 40.3 and lined with PFA or made of PTFE. The impeller made of PTFE is floating on a ceramic shaft and supported at both sides by inserts of silicon carbide. The rear casing hermetically closes the pump which is absolutely leak-proof. This isolation-shell is either made of carbon-fibre composite material and lined with PTFE or made of zirconium oxide. The magnetic coupling consists of a PTFE coated inner magnet and a flywheel-mass with outer magnets.

A special technology

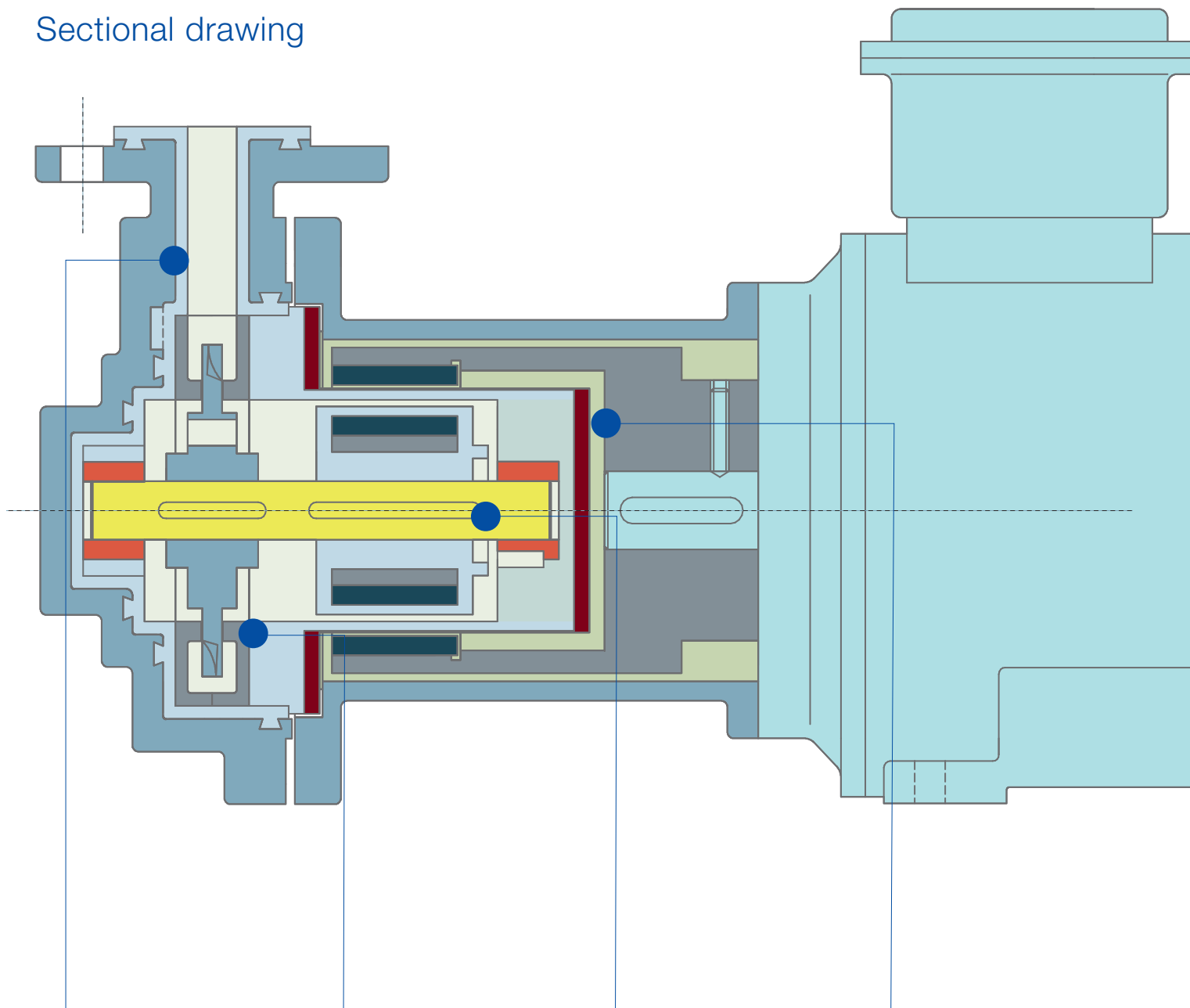
It is important to keep to various parameters in order to ensure a constant delivery rate for the overall operating time. On the one hand, the delivery rate of a peripheral pump depends on the size of the discharge channel and the width of the gap between impeller and discharge channel walls. On the other hand, the corrosion-resistant materials (like PTFE or PFA) built into the pump tend to creep or cold-flow with variations in pressure or temperature, so that the delivery rate would change in the course of time. Corrosion resistant ceramic inserts inside the casing help to avoid this and always grants a constant width of this gap.



**The GEKOBLOCK PM:
Universally useable!**

GEKOBLOCK PM

Sectional drawing



Vacuum-proof case lining
of PFA, 4 mm thick

Ceramic casing inserts for
free impeller rotation

Special PTFE keys for
power transmission

Metal-free isolation-shell
made of carbon-fibre to
prevent eddy-current
losses

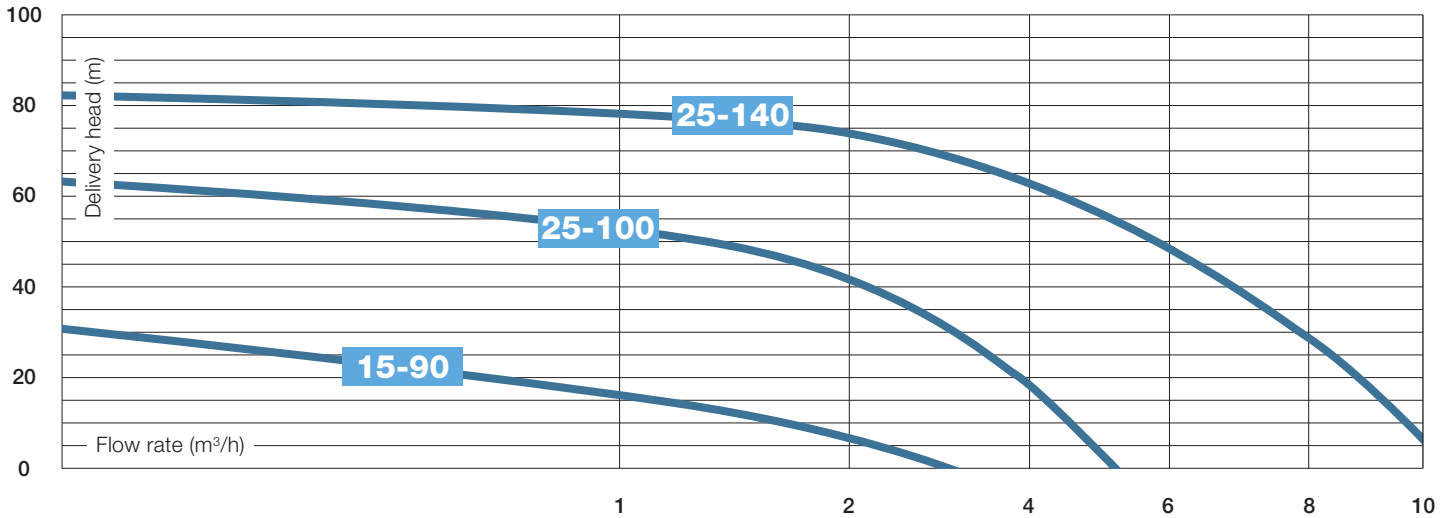
The advantages for the user are

- keeping of all operating parameters for the entire service period;
- defined width of gap for easy inspection that does not require expensive adjustment;
- trouble-free operation at temperatures of up to 150° C and operating pressures of up to 16 bars.

GEKOBLOCK PM

Characteristic curves

Characteristic curves PM (n = 2900 rpm, 50 Hz)



Technical data

- The pump casing is either made of GGG-40.3 lined with PFA or made of PTFE coated with steel and with connecting flanges of steel for PN16
- Minimum flow rate is 0,05 m³/h
- Maximum admissible pump-housing pressure is 16 bar
- Slide bearings made of pure silicon carbide
- Maximum operating temperature is 150 °C (higher temperatures available upon request)
- Our standard drive system is an explosion-proof three-phase motor acc. to EEx e II T3 (Atex)

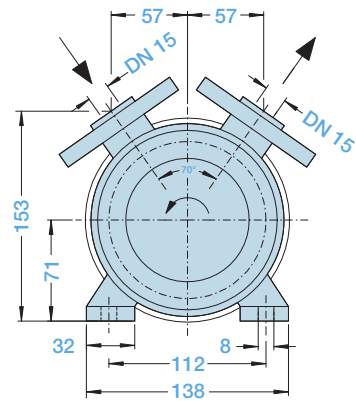
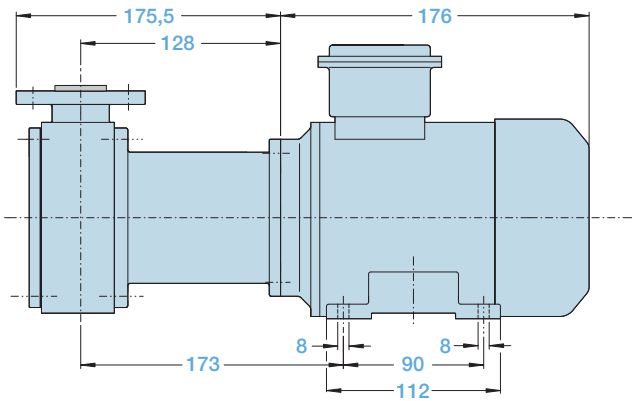
Advantages of the PM pumps

- Insensitive to cavitation
- Delivery of fluids with a gas content of up to 30 %
- Ceramic casing inserts for constant delivery rates even at changing temperatures
- No eddy-current losses due to metal-free isolation-shell
- PTFE parts free of metallic framework
- 2-phase delivery is possible
- Special versions are available

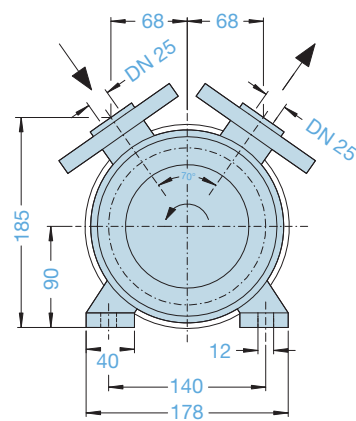
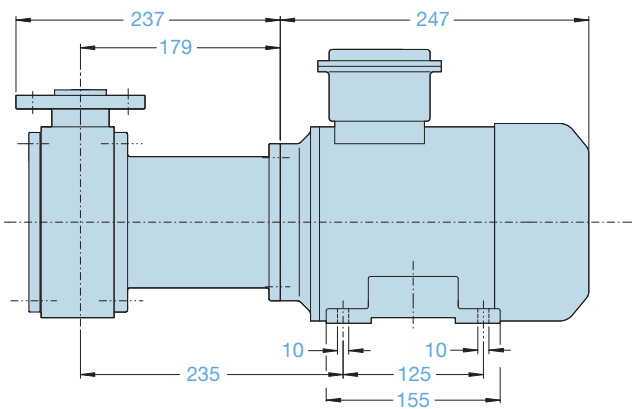
GEKOBLOCK PM

Dimensional drawings

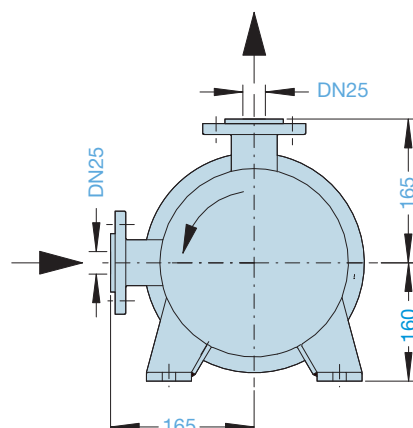
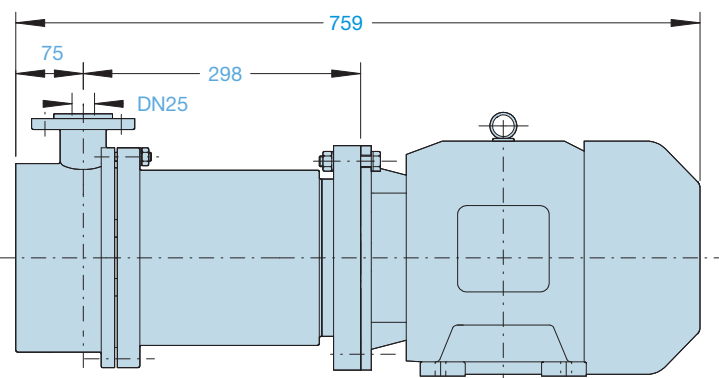
GEKOBLOCK PM 15-90, motor 0,55 kW (EEx, IE2)



GEKOBLOCK PM 25-100, motor 1,85 kW (EEx, IE2)



GEKOBLOCK BPM 25-140, motor 10,0 kW (EEx, IE2)



GEKOBLOCK BM

Small magnetic driven chemical pump

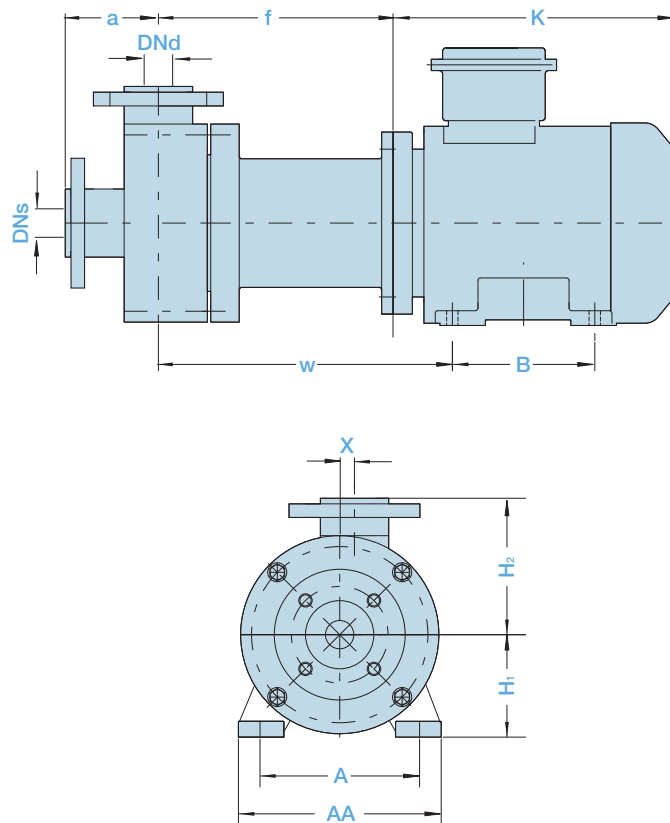
Pumps of the BM series

Pumps of the GEKOBLOCK BM series are small PTFE-lined single stage centrifugal pumps in close coupled design. The pump is hermetically sealed and absolutely leak-proof. The closed impeller made of PTFE is mounted to a hollow ceramic shaft with double slide bearings made of silicon carbide. The axial thrust is absorbed by thrust bearings and the power is transmitted by permanent magnets. The BM pump is used, whenever highly aggressive, toxic or dangerous fluids, without solids or crystalline particles are to be conveyed in an absolutely leak proof manner.

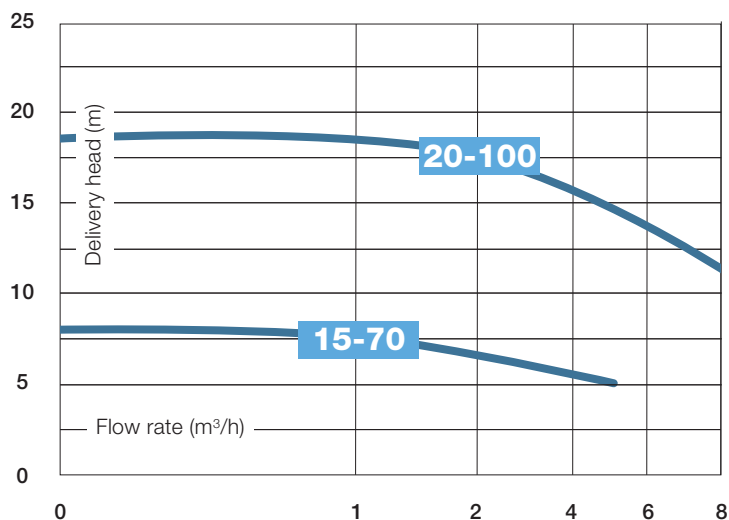


Pump in close coupled design: Series BM

Dimensional drawings



Characteristic curves
GEKOBLOCK BM (n = 2900 rpm, 50 Hz)



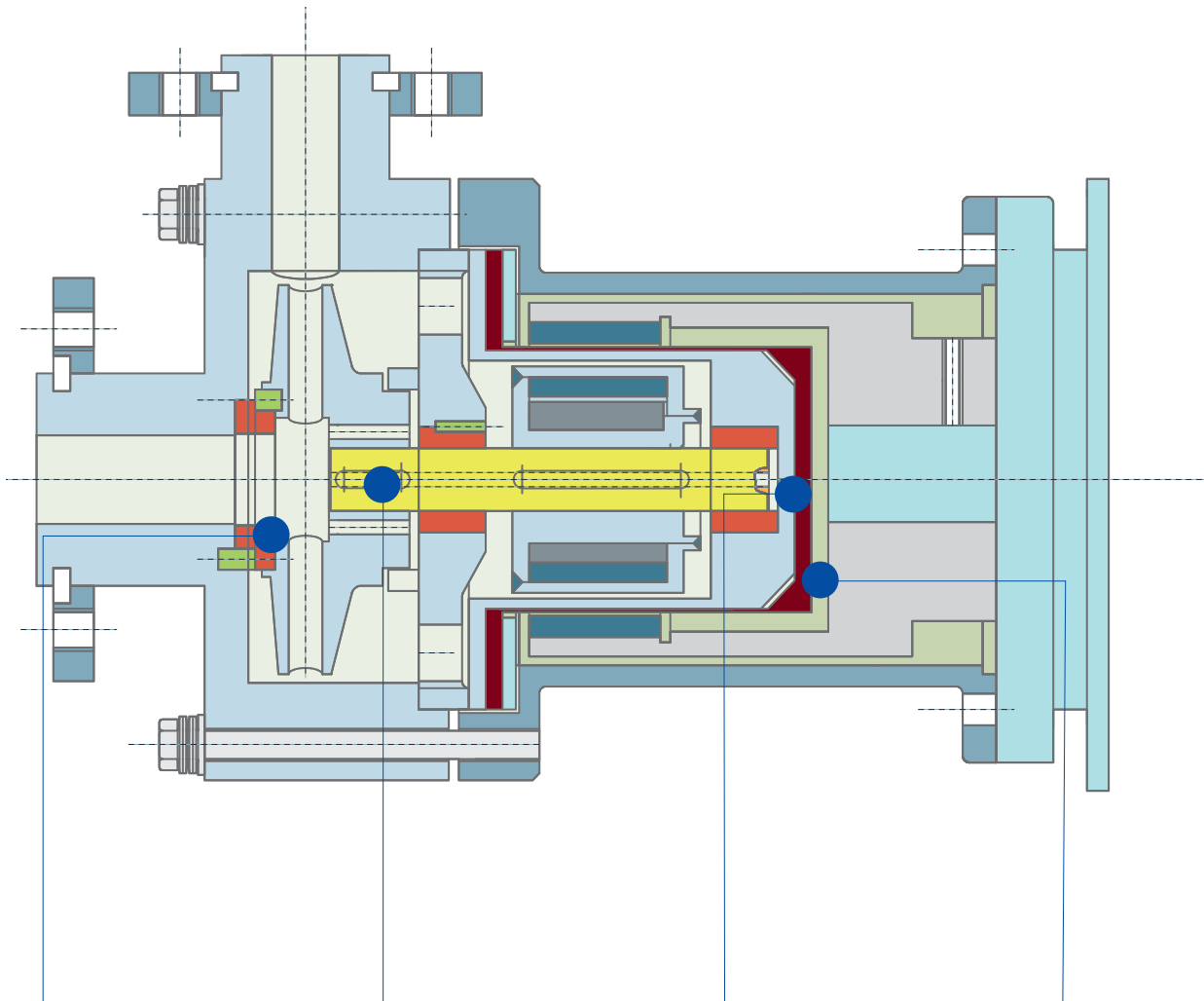
Technical data

Pumpe size	Motor (kW) EEx eII T3 (IE2)	DN _s	DN _D	a	f	K	w	B	A	AA	H ₁	H ₂	X
15-70	0,25 (63K2)	25	15	65	112	156	152	100	100	128	63	100	30
20-100	1,85 (90L2)	25	20	80	206	273	262	125	140	178	90	120	0

Flanges according to DIN 2501/1PN16

GEKOBLOCK BM

Sectional drawing



Pressure bearings with optimal dimensions to take the axial thrust

Special PTFE keys for the power transmission

Bored shaft ensure for forced internal circulation to improve the lubrication of the bearings

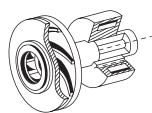
Metal-free isolation-shell made of carbon fibre to prevent eddy-current losses.

Technical data

- Pump casing made of PTFE
Flange connections are designed for PN16
- Minimum flow rate: 0,5 m³/h
- Max. allowed pump pressure: 16 bar, max. operating temperature: 150° C
- Bearings made of silicon carbide (SiC) or PTFE/Carbon
- Pumps available for FDA-applications
- Standard drive: Three phase current motor explosion proof EEx e II T3 (Atex)

Advantages

- Hollow ceramic shaft for internal split-stream circulation
- Less sensitive to incomplete lubrication
- No eddy-current losses due to metal-free isolation-shell
- PTFE parts are free of metallic framework
- Silicon-carbide thrust bearings with optimal dimensions take the axial thrust
- Specials are available on request



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