

# META-MAK

## HORIZONTAL, CENTRIFUGAL, VOLUTE-TYPE PUMPS, PACKING-FREE DESIGN



### APPLICATION

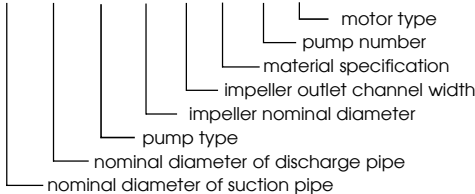
- pure (see working conditions), active and neutral chemical liquids and combustibles dangerous to health or environment
- the liquid must be ferromagnetic particles-free
- chemical, petrochemical, pharmaceutical, and processing industries
- design:
  - A) standard – for general use
  - B) explosive conditions for pumping incombustibles in dangerous explosive conditions
  - C) for combustibles – for pumping combustibles in zone 1 and 2

### WORKING CONDITIONS

- medium temperature range from -40°C to +250°C, special construction pumps up to 400°C
- working pressure of 16 bars
- medium density range from 600 kg.m<sup>-3</sup> to 1900 kg.m<sup>-3</sup>
- kinematic viscosity up to 75 mm<sup>2</sup>.s<sup>-1</sup>
- pH 0 - 14
- contents of solid particles up to 2% of weight
- particle size up to 0,1 mm, max. hardness of 700 HV

### TYPE IDENTIFICATION

65 - 40- NCB-250-10-YC-000-09



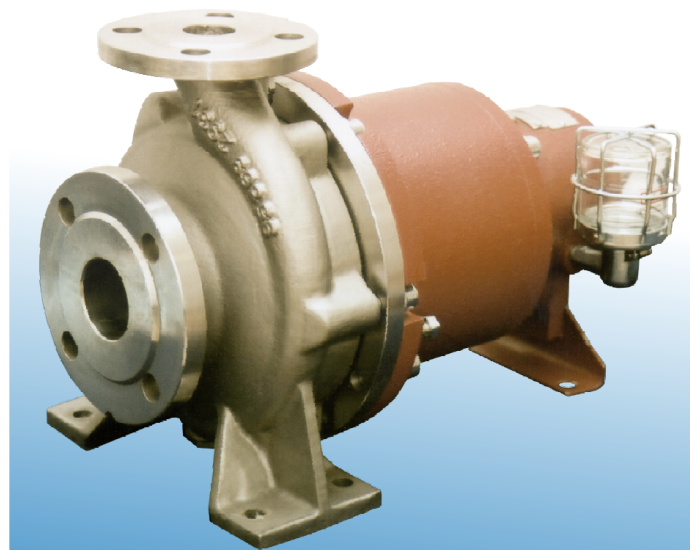
### CONSTRUCTION

- dimensions and parameters acc. to EN 22858/ISO 2858/DIN 24 256
- 30 sizes of standardized, hydrodynamic, medium-pressure pumps sized 1 - 32 (series 25 and 30 not included)
- developed from META-PLUS series horizontal, centrifugal, single-stage, volute-type construction with an axial intake and a radial outlet
- pressure chamber consisting of a volute, casing and magnetic coupling body separating the medium from ambient surroundings
- closed impeller with diffuser guide vanes set on a protruding end of an inner shaft
- outer shaft is supported on oil-lubricated roller bearings, inner shaft is supported on slide bearings self-lubricated by pumped liquid (or on antifriction ceramic bearings, if applicable)
- driving torque transmission from outer to inner shaft and to impeller via permanent magnets of the magnetic coupling
- bearing housing connected to hydraulic unit by a lantern bracket
- flanges PN16 acc. to EN 1092-1 and 2/ISO 7005-1/-2 (alternative PN 25)
- other versions upon request (cooling, heating, cooler chambers, discharge pipe flanges, coating, etc.)
- sizes outside of displayed area to be consulted with the manufacturer

### MATERIAL SPECIFICATION

Part name	LC	LN	LB	LY	OC	ON	OL	YC	YN	ZC	ZN
volute	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	1.0619	1.0619	1.0619	1.4308	1.4308	1.4408	1.4408
pump casing	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	1.0619	1.0619	1.0619	1.4308	1.4308	1.4408	1.4408
impeller	EN-GJL-200	EN-GJL-200	CuSn10Zn2	1.4308	1.0619	1.0619	EN-GJL-200	1.4308	1.4308	1.4408	1.4408
seal ring	EN-GJL-200	CuSn10Zn2	EN-GJL-200	EN-GJL-200	EN-GJL-200	CuSn10Zn2	EN-GJL-200	1.4308	CuSn10Zn2	1.4408	CuSn10Zn2
outer shaft / follower roll	1.0503	1.0503	1.0503	1.0503	1.0503	1.0503	1.0503	1.0503	1.0503	1.0503	1.0503
inner shaft	1.0503	1.0503	1.0503	stainless steel	1.0503	1.0503	1.0503	stainless steel	stainless steel	stainless steel	stainless steel
impeller nut	1.0503	1.0503	1.0503	stainless steel	1.0503	1.0503	1.0503	stainless steel	stainless steel	stainless steel	stainless steel
lantern	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200
bearing housing	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200	EN-GJL-200
magnetic coupling	material acc. to the pumped liquid recommended by a manufacturer										

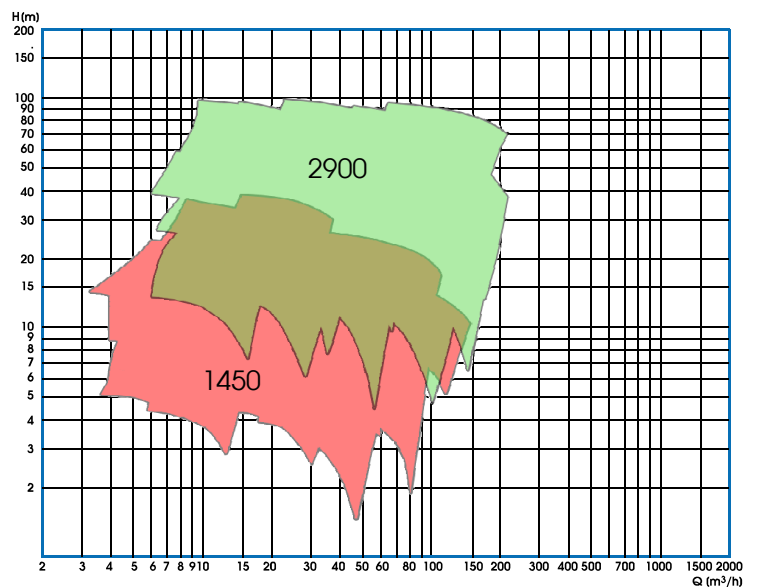
The above table states the basic material specifications: if applicable, other material combinations optional depending on pumped medium



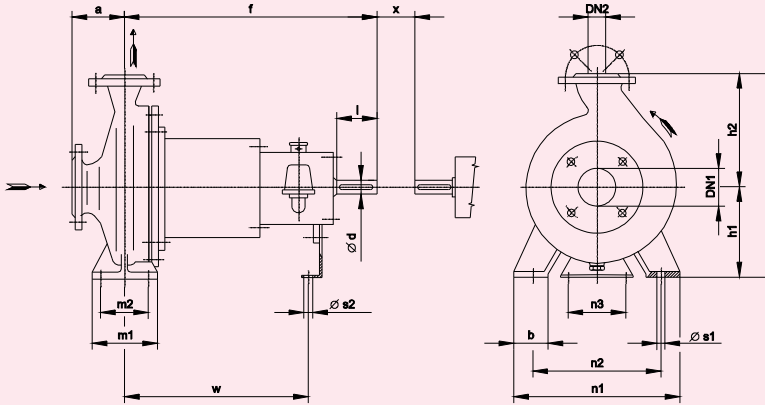
META-MAK

### WORKING AREA

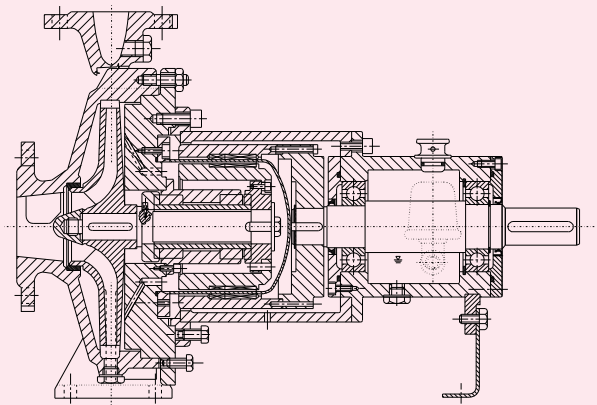
PUMP SIZE	SHAFT SPEED (r.p.m.)	FLOW Q (l/s)	DELIVERY HEAD H (m)	TEMPERATURE MAX. (°C)
from 50-32-NCB-125 to 125-100-NCB-200	1450 2900	from 0,5 to 55,5	from 5 to 80	180



### BASIC DIMENSIONS



### CROSS-SECTION DRAWING



Pos.	DN1	DN2	Ø im- peller	Pump				Feet										Shaft			kg
				a	f	h1	h2	b	m1	m2	n1	n2	n3	w	Ø s1	Ø s2	d	l	x <sup>1)</sup>		
1	50	32	125	80	385	112	140	50	100	70	190	140	110	285	14	14	24	50	100		
2	50	32	160	80	411 <sup>1)</sup>	132	160	50	100	70	240	190	110	311 <sup>2)</sup>	14	14	24	50	100	56	
3	50	32	200	80	411 <sup>1)</sup>	160	180	50	100	70	240	190	110	311 <sup>2)</sup>	14	14	24	50	100	77	
4	50	32	250	100	500	180	225	65	125	95	320	250	110	370	14	14	32	80	100	93	
5	65	50	125	80	385	112	140	50	100	70	210	160	110	285	14	14	24	50	100		
6	65	50	160	80	411 <sup>1)</sup>	132	160	50	100	70	240	190	110	311 <sup>2)</sup>	14	14	24	50	100	62	
7	65	40	200	100	411 <sup>1)</sup>	160	180	50	100	70	265	212	110	311 <sup>2)</sup>	14	14	24	50	100	88	
8	65	40	250	100	500	180	225	65	125	95	320	250	110	370	14	14	32	80	100	97	
9	65	40	315	125	500	200	250	65	125	95	345	280	110	370	14	14	32	80	100		
10	80	65	125	100	385	132	160	50	100	70	240	190	110	285	14	14	24	50	100		
11	80	65	160	100	411 <sup>1)</sup>	160	180	50	100	70	265	212	110	311 <sup>2)</sup>	14	14	24	50	100		
12	80	50	200	100	415 <sup>1)</sup>	160	200	50	100	70	265	212	110	315 <sup>2)</sup>	14	14	24	50	100	81	
13	80	50	250	125	500	180	225	65	125	95	320	250	110	370	14	14	32	80	100		
14	80	50	315	125	500	225	280	65	125	95	345	280	110	370	14	14	32	80	100		
15	100	80	125	100	385	160	180	65	125	95	280	212	110	285	14	14	24	50	100		
16	100	80	160	100	500	160	200	65	125	95	280	212	110	370	14	14	32	80	100		
17	100	65	200	100	500	180	225	65	125	95	320	250	110	370	14	14	32	80	140		
18	100	65	250	125	500	200	250	80	160	120	360	280	110	370	18	14	32	80	140		
20	125	80	160	125	500	180	225	65	125	95	320	250	110	370	14	14	32	80	140		
21	125	80	200	125	500	180	250	65	125	95	345	280	110	370	14	14	32	80	140		
22	125	80	250	125	500	225	280	80	160	120	400	315	110	370	18	14	32	80	140		
26	125	100	200	125	500	200	280	80	160	120	360	280	110	370	18	14	32	80	140		

Dimensions for other sizes upon request

### MAGNETIC COUPLING OPTIONS

- magnetic coupling with roller assembly
- magnetic coupling with slide assembly
- magnetic coupling with slide assembly, heated type

### MOTORS

- foot-mounted electric motor drive
- driving force is transmitted using a flexible coupling
  - flexible coupling without a spacer
  - flexible coupling with a spacer
- common base plate assembly, cast iron