

Thermoplastic Vertical Sump Pump Type ETL

dry-running safe
highly wear resisting
smooth running

Size:

- ETL 20 - 100 up to 80 - 200

Capacity:

- up to 100 m³/h (1450 rpm)
- up to 80 m³/h (2900 rpm)

Flow head:

- up to 16 m (1450 rpm)
- up to 36 m (2900 rpm)

Submersion depth:

- 500 mm and 750 mm

Suction tube extension:

- submersion depth
up to 1800 mm


Application

ASV vertical sump pumps are designed for the vertical operation in pressureless containers, open tanks or in pits.

For applications in

- chemical industry and processing technology
- metal-working und galvanic industry
- water treatment and sewerage technology

Media

ASV sump pumps are designed for pumping of neutral and aggressive fluids, acids, alkalines, saline solutions, fluid mixtures and suspensions. Refer to the ASV resistance guide.

Viscosity

up to appr. 160 mPas (160 cP)

Layout

For the layout of the pump equipment competent ASV engineers are at your disposal. Please contact us.

Examinations

Since 1994 ASV Stübbe is certified according DIN EN ISO 9001. Every pump aggregate has been tested acc. DIN 1944. If desired the pump will be delivered with the certificate acc. DIN 50 049.

Operating temperature

Depends on the operating conditions (system pressure, load etc.). Taking creep strength into account, the following approximate temperatures apply:

PP: up to +90 °C

PVDF: up to +110 °C

Values below 0°C on request with exact data of operation.

Drive

Driven by standard IEC three-phase-current motors.

Design: IM V1¹⁾ or IM V18¹⁾
B5 or B14

Voltage: 230/400 V, 50/60 Hz,

from 3 kW up 400/690 V, 50/60 Hz

Speeds: 1450 or 2900 rpm

Protection: IP 55

Insulation class: F

Special types, special insulation classes, ex-protection and still stand heating on request.

Pump materials

PP or PVDF

O-ring sealings

CSM, FPM or PTFE

V-ring

FPM

Separation disc

CrNi steel or SiC

Bearing housing

G-AlSi 10 Mg

Screws

316 Ti or PVDF

Other materials on request.

Connections

Pressure connection horizontal, above the mounting plate as:

- Tube joint:
 - inserts made of PE, PP or PVDF with union socket ends or spigot ends for fusion welding acc. DIN 16 962.
 - inserts according BS, ANSI, JIS on request
- Flange connection with GFR flanges or with PP/steel flanges according DIN 2501 (PN 10/16)
- Vertical pressure connection on request.

¹⁾ with protection cap

Constructional features

Design

ASV sump pumps type ETL are designed as vertical, single-stage centrifugal pumps.

Pump housing and impeller

The solid thermoplastic spiral casing is directly flanged at the submersion tube by means of stainless steel or PVDF screws.

The closed impeller made of thermoplastic material is fixed on the pump shaft independent of direction of rotation. Hydraulic efficiency is given by the fluidic shaped rotating blades and vanes on the back of the impeller as well as by the suction opening being positioned deep in the spiral casing.

Suction connection

The pump casing allows a variable suction connection. On emptying a container a quiet and vibration-low running of the pump is guaranteed due to the integrated suction plate. A strainer, optionnally available, protects the pump against larger solid particles or fibres and can prolong the lifetime.

Shaft, submersion tube and pressure line

The thick-walled submersion tube fixed on the mounting plate ensures a vibration-low operation of the pump and prevents the pump elements from getting into contact with the pump housing. Drainholes for fluid drain off prevent admission of the pumping medium into the shaft exit.

The stable shaft made of stainless steel is separated from the medium by a thick-walled thermoplastic protection tube due to suitable sealing technics. The construction adapted to thermoplastics ensures the necessary axial movability at higher operating temperatures. For a problem-free disassembling of the pump the separate pressure tube is equipped with an union above the spiral casing.

Shaft exit

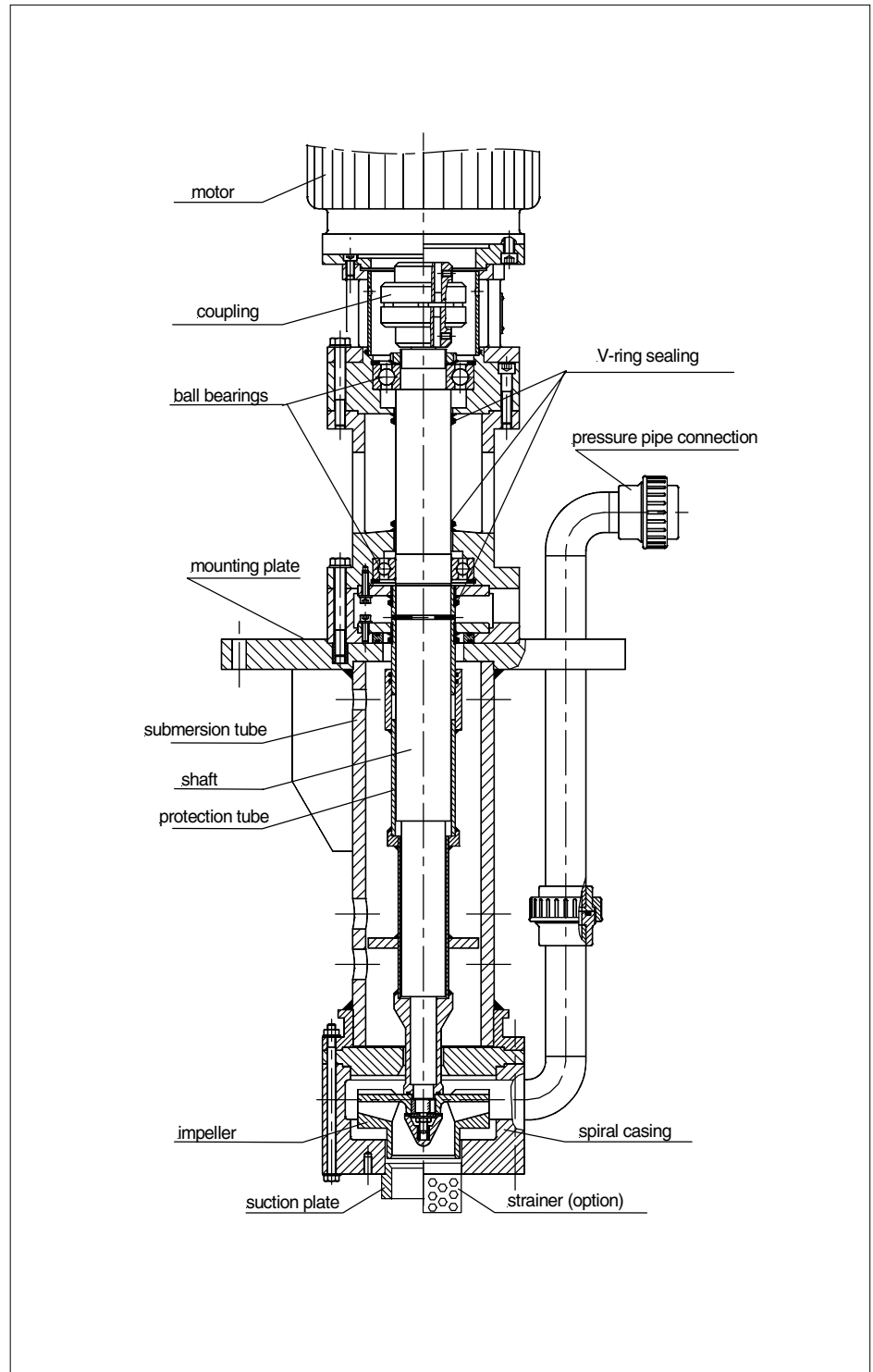
The shaft exit at the mounting plate protects against medium vapours only. Special V-rings prevent vapour from escaping into the atmosphere. These sealings slide on a separation disc made of stainless or siliciumcarbide (SiC).

Mounting on rolling bearings

Radial and axial forces will be collected by sealed roller bearings with additional V-rings protecting against aggressive medium vapours. They are placed above the container in a separate bearing housing. Their wide axial bearing distance and the large shaft or bearing diameter guarantees the smooth running of the pump and a long operating time.

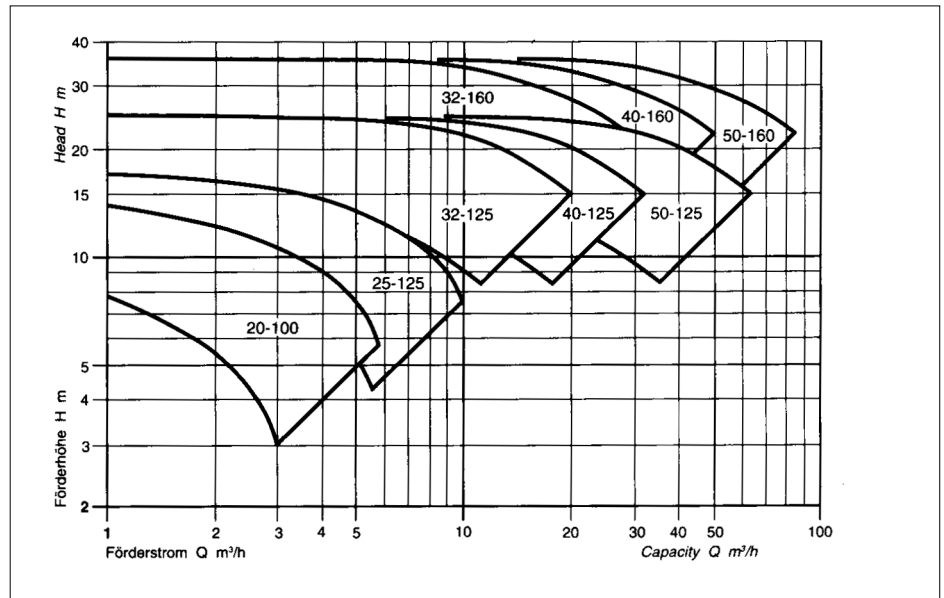
Materials

All components getting in contact with the medium or medium vapours are made of solid thermoplastics. Only high-tech thermoplastic materials with high impact strength and increased creep strength are used.



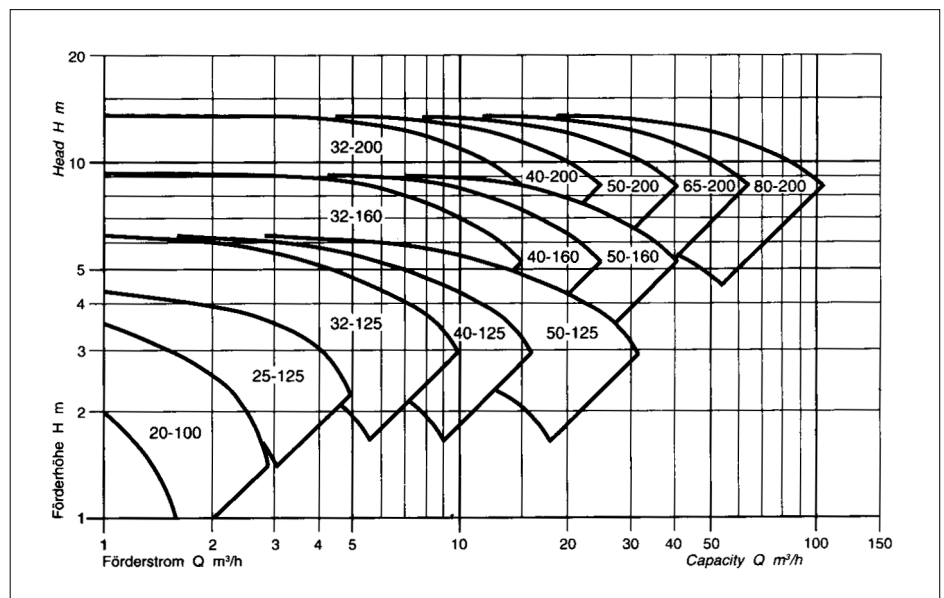
Performance diagram

Submersion pump ETL
at a speed of
 $n = 2900 \text{ rpm}$, 50 Hz

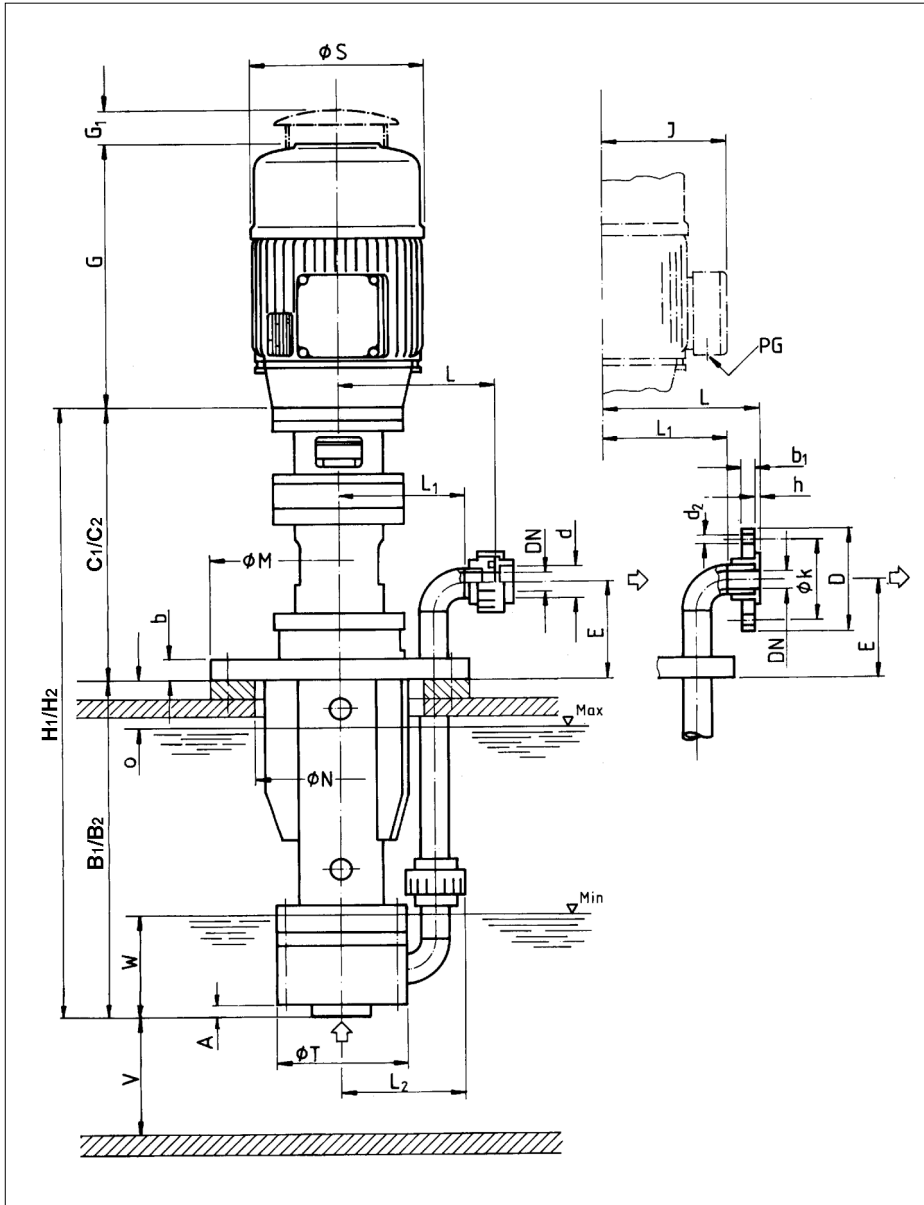


Performance diagram

Submersion pump ETL
at a speed of
 $n = 1450 \text{ rpm}$, 50 Hz



Dimensions



Explanation of the following terminology:

Fluid level »max.«

- Maximal admissible fluid level.
- Top switching point for level control.

Fluid level »min.«

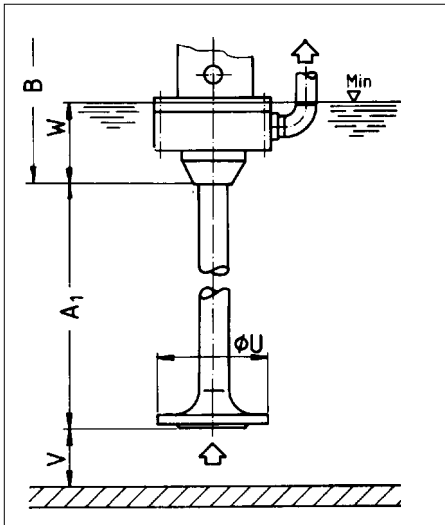
- Lowest admissible fluid level each time the pump unit is started up.
- Bottom switching point for level control during commissioning/start-up of the pump unit.

NOTE

Each time a container is emptied, fill the container to above the min. fluid level prior to restarting the pump. Always ensure the minimum covering »W« of the pump casing when starting the unit. For higher operating temperatures increase »W« appropriately.

size	pressure side		dimensions (mm)																			weight without motor
ETL	DN	d	A	B ₁	B ₂	b ₁	C ₁	C ₂	D	d ₂	E	H ₁	H ₂	h	k	L	L ₁	L ₂	T	V	W	kg
20-100	20	25	35	500	750	14	370	470	105	14	110	870	1220	9	75	180	133	141	140	110	170	21
25-125	25	32	35	500	750	15	370	501	115	14	110	870	1251	10	85	200	154	164	160	110	170	23
32-125	32	40	20	500	750	17	420	521	140	18	155	920	1271	11	100	220	173	172	200	140	170	32
32-160	32	40	25	540	790	17	450	626	140	18	165	990	1416	11	100	295	245	210	320	140	170	47
32-200	32	40	25	540	790	17	450	626	140	18	165	990	1416	11	100	310	260	210	320	140	170	59
40-125	40	50	20	500	750	17	420	521	150	18	155	920	1271	12	110	235	193	187	200	160	170	32
40-160	40	50	25	540	790	17	450	758	150	18	165	990	1548	12	110	300	255	220	320	160	170	47
40-200	40	50	25	540	790	17	450	758	150	18	165	990	1548	12	110	320	270	220	320	160	170	59
50-125	50	63	25	540	790	18	450	758	165	18	165	990	1298	14	125	320	270	258	350	160	170	53
50-160	50	63	25	540	790	18	450	758	165	18	165	990	1548	14	125	340	290	258	350	160	170	59
50-200	50	63	25	540	790	18	450	758	165	18	165	990	1548	14	125	360	315	258	350	160	170	63
65-200	65	75	25	540	790	18	450	758	185	18	165	990	1548	16	145	370	320	270	350	160	170	63
80-200	80	90	25	550	800	20	450	758	200	18	165	1000	1558	17	160	410	335	285	380	180	170	63

Pump with suction tube and suction plate

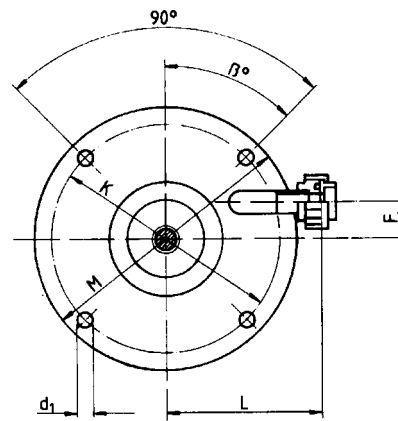


standard gradation in steps of 100 mm

Dimensions mounting plate and tank notch

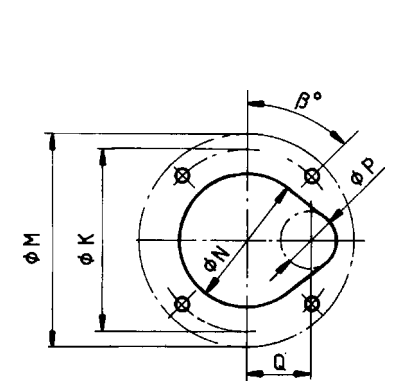
mounting plate

pump size
20 - 100 up to 80 - 200

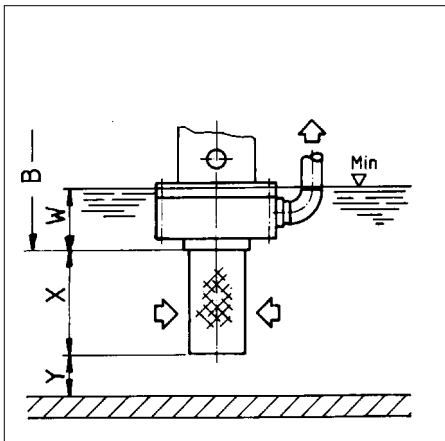


tank notch

pump size
32 - 125 and 40 - 125

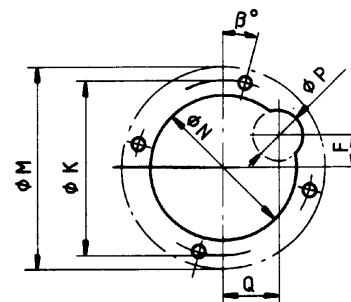


Pump with strainer



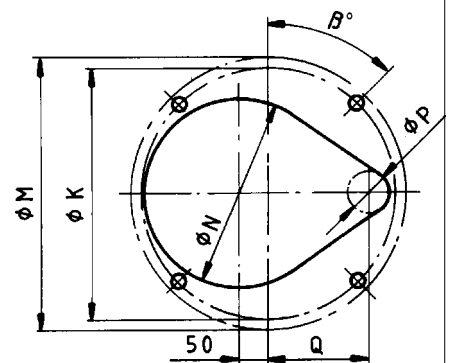
tank notch

pump size
20 - 100 and 25 - 125



tank notch

pump size
32 - 160 up to 80 - 200



size	mounting plate dimensions (mm)						tank notch dimensions (mm)				suction tube with suction plate		strainer	
ETL	F	M	K	b	d1	β°	N	P	Q	o	A1min/max	U	X	Y
20-100	50	270	230	30	14	15	205	70	85	80	100 ... 1.500	140	100	10
25-125	58	320	270	30	14	15	245	80	100	80	100 ... 1.500	160	100	10
32-125	-	400	365	30	18	54	240	95	130	80	200 ... 1.800	200	125	15
32-160	-	520	488	40	18	45	370	90	195	80	200 ... 1.800	200	125	15
32-200	-	520	488	30	18	45	370	90	195	80	200 ... 1.800	200	125	15
40-125	-	400	365	30	18	54	240	95	130	80	200 ... 1.800	200	150	10
40-160	-	520	488	40	18	45	370	90	195	80	200 ... 1.800	200	150	10
40-200	-	520	488	30	18	45	370	90	195	80	200 ... 1.800	200	150	10
50-125	-	520	488	40	18	45	370	90	195	80	200 ... 1.800	250	125	35
50-160	-	520	488	40	18	45	370	90	195	80	200 ... 1.800	250	125	35
50-200	-	520	488	30	18	45	370	90	195	80	200 ... 1.800	250	125	35
65-200	-	520	488	30	18	45	370	90	195	80	200 ... 1.800	250	150	10
80-200	-	520	488	30	18	45	390	100	195	80	200 ... 1.800	250	170	10

Coordination of pump sizes and motor power (standard values)

pump sizes, n = 1450 rpm		kW
	80 - 200	0.18
	65 - 200	0.25
	50 - 200	0.37
	40 - 200 50 - 160	0.55
	32 - 200 40 - 160 50 - 125	0.75
	32 - 160	1.10
	32 - 125 40 - 125	1.50
	20 - 100 25 - 125	2.20
		3.00
		4.00
		5.50
		7.50
		11.00

pump sizes, n = 2900 rpm		kW
	20 - 100	0.25
		0.37
		0.55
		0.75
	25 - 125	1.10
	32 - 125	1.50
	32 - 160 40 - 125	2.20
	40 - 160 50 - 125	3.00
	50 - 160	-
		4.00
		5.50
		7.50
		11.00

Technical dates and dimensions of drive motors (dimensions see page 4)

motor size	n= rpm			n= rpm			dimensions (mm)				cable connection
	P _M kW	I _N ¹⁾ A	weight kg	P _M kW	I _N ¹⁾ A	weight kg	G	G ₁	S	J	
71	0.25	0.7	5.5	0.37	1.05	6.0	201	25	143	114	2 x PG 13.5
71	0.37	1.1	6.8	0.55	1.45	7.0	201	25	143	114	2 x PG 13.5
71	-	-	-	0.75	1.65	7.4	201	25	143	114	2 x PG 13.5
80	0.55	1.5	8.0	0.75	1.80	8.0	232	26	158	122	2 x PG 13.5
80	0.75	2.0	10.0	1.10	2.55	9.0	232	26	158	122	2 x PG 13.5
90 S	1.10	2.8	12.0	1.50	3.50	12.0	244	31	176	139	2 x PG 16.0
90 L	1.50	3.7	14.0	2.20	4.90	15.0	269	31	176	139	2 x PG 16.0
100 L	2.20	5.2	18.0	3.00	6.40	20.0	303	31	196	154	2 x PG 21.0
100 L	3.00	7.0	22.0	-	-	-	303	31	196	154	2 x PG 21.0
112 M	4.00	8.9	28.0	4.00	8.10	25.0	320	32	220	167	2 x PG 21.0
112 M	-	-	-	5.50	9.20	30.0	320	32	220	167	2 x PG 21.0
132 S	5.50	12.0	56.0	5.50	11.00	50.0	405	42	246	190	2 x PG 21.0
132 M	7.50	16.0	68.0	7.50	15.00	56.0	405	42	246	190	2 x PG 21.0
160 M	11.00	22.0	100.0	11.00	22.50	100.0	517	39	312	220	2 x PG 29.0

¹⁾ for nominal current I_N 400 V are valid

Technical alterations excepted



Notizen / notes



Notizen / notes