Amarex® N

Submersible motor pumps
DN 50 to 100
50 Hz

Fields of Application

Amarex N pumps are used for handling all types of waste water, e.g.:
waste water / sewage, waste water containing long fibres and solid substances as well as fluids containing gas/air; raw, activated and digested sludge; drainage /water extraction, drainage of rooms and areas subject to a flooding risk on municipal, industrial and commercial premises.

Operating Data

Capacity	Q up to 190 m^3/h, 53 l/s
Discharge head	H up to 49 m
Motor rating	P_2 from 0.8 kW to 4.2 kW
Temperature of fluid handled	t up to 40 °C [1])

Type of enclosure IP 68 to EN 60 529 / IEC 529

[1]) For short periods (3 - 5 min or until the temperature guards trip) the UL and WL model can be operated up to 80 °C.

Design

Stationary and transportable design for wet well installation.
Amarex N pumps are submersible single-stage, single-entry close-coupled units which are not self-priming.
They can be delivered with free flow impellers (F),
with cutters (S, for Amarex N S 50 only) or
with open, diagonal single vane impellers (D).

Designation

Amarex N F 80-220 / 04 4 YL G-220

- Type series
- Impeller type (F, S, D)
- Size of hydraulics
- Motor designation
- Number of poles
- Motor version (UL, YL, WL)
- Material variant
  G, G1, G2, GH see materials table, page 3
- Impeller diam.

Drive

Three-phase asynchronous motor, 400 V, 50 Hz,
direct starting, switching frequency max. 30 per hour.
YLG model to ATEX 100a: motor EEx d IIB T4,
LCIE 03 ATEX 6428X.

Shaft Seal

Always two **bi-rotationa**l mechanical seals,
with oil reservoir and environmentally-friendly oil.

Bearings

Grease-packed rolling element bearings.

Motor Design

UL ⇒ non-explosion-proof (55 °C)
YL ⇒ explosion-proof T4 (40 °C)
WL⇒ non-explosion-proof (max. 60 °C)
Operating mode S1 – submerged (max. 25 m)
Operating mode S3 – not submerged (see dimension table)

CE – EN 12 050

LGA approval No. BMW 0420266-01 to 05 for
Pumps with cutter-type impeller S, DN 50
Pumps with free flow impeller F, DN 50, 65, 80, 100
Pumps with open, diagonal single vane impeller D, DN 80, 100
In countries stipulating explosion-proof units for handling sewage with faeces, the motor design YL must be used.

KSB

Product Advantages at the Example of Amarex N F 100-220 UL/YL/WL

to Our Customers' Benefit

All our models have absolutely watertight cable entries
Multiple safety due to:

Individual conductors stripped, tinned and sealed in resin.

Your benefit:
The pump can be operated safely even in the event of damage to the cable sheath and core insulation.

Bearings sealed on both sides, lubricated for life, make for long service life

Your benefit:
Maintenance-free
Ideal for continuous-duty pumps

Motor for operating mode S1
Thermal class F with explosion protection in T4.

Your benefit:
Maximum operating reliability thanks to optimum motor rating

Double winding temperature monitoring enables automatic operation, even where explosion protection requirements have to be met.

Your benefit:
Motor protected from overheating

New kind of cable entry

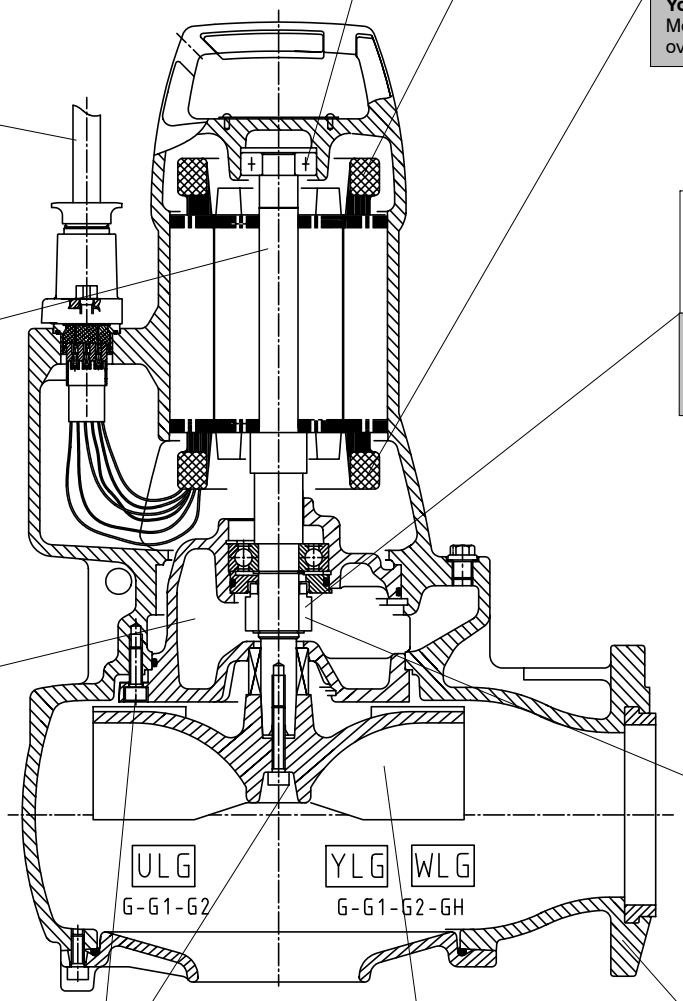
Your benefit:
Simple, polarized connection, fast pump installation / removal

Shaft made of corrosion-resistant stainless steel

Your benefit:
No corrosion problems, therefore long service lives.

Shaft sealed by 2 **bi-**rotational mechanical seals, with SiC/SiC contact faces at the pump-end seal.

Your benefit:
A solution ensuring long service life.
Perfect motor protection.



Oil fill with environmentally-friendly, non-toxic oil; food-approved

Your benefit:
A contribution to environmental protection

Installation of a mechanical seal with covered spring possible without any problems

Your benefit:
For handling abrasive and aggressive fluids

Modular design system for all sizes

Your benefit:
Only **one** set of spare parts required for all sizes (50/65/80/100).

All screwed connections in A2 stainless steel for all sizes, M8 hex. socket head cap screws

Your benefit:
Only one tool required.
A small detail providing added ease of service. Easy to dismantle even after years of operation.

Optimum hydraulic design

Your benefit:
Optimal hydraulic performance and efficiency with contaminated fluids

Automatic, bolt-free connection for stationary installation; leakage prevented by elastic sealing.

Your benefit:
The most simple and at the same time most user-friendly solution: Easy installation and removal of the pump.

Materials	Amarex N S 50	Amarex N D 80/100	Amarex N F 50 / 65 / 80 / 100			
Variant	G	G	G	G1	G2	GH (YL and WL)
Casing	JL 1040	JL 1040	JL 1040	JL 1040	JL 1040	JL 1040
Intermediate casing	JL 1040	JL 1040	JL 1040	JL 1040	JL 1040	0.9635 **)
Impeller	JL 1040	JL 1040	JL 1040	1.4593 *)	0.9635 **)	0.9635 **)
Cutter	1.2842 (90Mn V8G)	--	--	--	--	--
Shaft	1.4021	1.4021	1.4021	1.4021	1.4021	1.4021
Motor-end mechanical seal	carbon/Al_2O_3	carbon/Al_2O_3	carbon/Al_2O_3	carbon/Al_2O_3	carbon/Al_2O_3	carbon/Al_2O_3
Pump-end mechanical seal	SiC / SiC	SiC / SiC	SiC / SiC	SiC / SiC	SiC / SiC	SiC / SiC
Screws / bolts and nuts	A2	A2	A2	A2	A2	A2
Sealing elements	NBR	NBR	NBR	NBR	NBR	NBR

*) Noridur **) Norihard

Scope of Supply:

Pump (Ident. No. 39 ... ...) and accessories in separate packages, available ex stock.

- **Pump unit (P1):**

- Material variant: Cast iron
- Motor design: explosion-proof (YL)
  non-explosion-proof (UL)
  non-explosion-proof (WL)
- Cable gland: totally watertight, resin-mounted
- Complete pump, ready for installation, with 10 m power supply cable 7 x 1.5 mm^2
- Standard finish: Surface treatment SA2 1/2 SIS 055900
  Primer: Iron oxide (dipped), 35 - 40 µm
  Top coat: environmentally-friendly KSB-standard coating, approx.40 µm, RAL 5002 (ultramarine blue)
  Optional: Luberbox, approx. 250 µm, RAL 9005

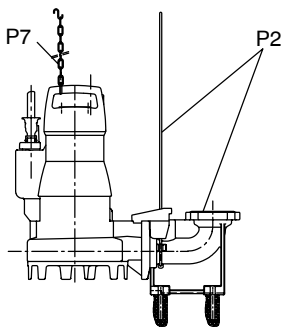
- **Installation parts for stationary installation**

P2 (**guide hoop** inst. parts for Amarex N 50 and 65 only)
ET = 1.5 m / 1.8 m / 2.1 m
+ P5 (Claw)
+ P7 (Chain and shackle) ET = 2 m

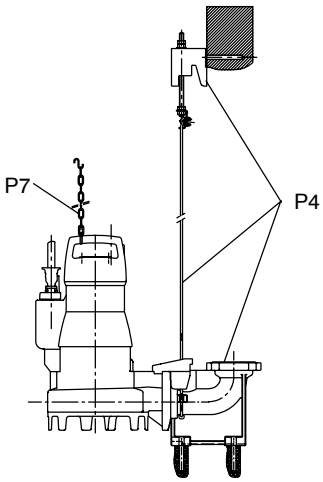
or P4 (**guide wire arrangement** for all sizes) ET = 4.5 m
+ P5 (Claw)
+ P7 (Chain and shackle) ET = 4.5 m

(see chapter on suggested installation layouts)
ET = Installation depth from the lower edge of the access opening to the bottom of the pump sump.

Hoop arrangement

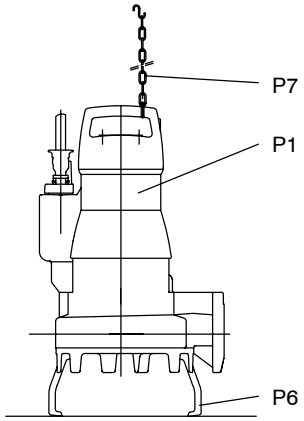


Guide wire arrangement



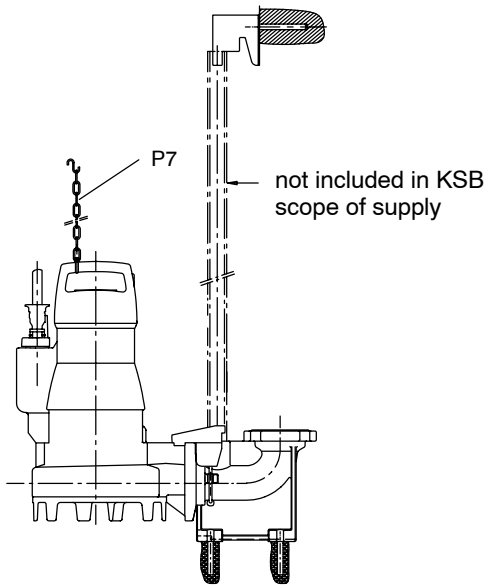
- **Installation parts, transportable design**

P6 (Foot)
P7 (Chain and shackle)



- **Installation parts, guide rail arrangement**

P4 + P5 + P7 (guide rail arrangement)
all sizes
P5 (Claw)
P7 (Chain and shackle), ET = 4.5 m



Thermal Motor Monitoring

Explosion-proof design The motor is protected by two independent monitoring circuits to prevent overheating.

Pump size	Temperature monitoring circuit (with automatic reset and start-up)	Limiting circuit (Temperature limit for explosion protection without automatic reset)
Amarex N 50 / 65 / 80 / 100	Bimetal switch to be connected directly with the control circuit of the motor contactor	Bimetal switch to be connected via a tripping unit with manual reset

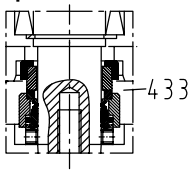
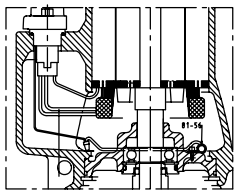
Non-explosion-proof design The motor is protected by one monitoring circuit to prevent overheating.

Pump size	Temperature monitoring circuit
Amarex N 50 / 65 / 80 / 100	Bimetal switch to be connected directly with the control circuit of the motor contactor

Please note:

- The pump Amarex N DN 50 has a PN 10 discharge flange (instead of PN 6 for Amarex DN 50).
- When replacing an Amarex DN 50 PN 6 with an Amarex N DN 50 PN 10, make sure that the new claw is in PN 10.
- If a customer has a special PN 6 claw, this must be changed to PN 10.
- Application limit for open, diagonal single vane impeller (D): 30–50 Hz.

Variants

Variants	Description
Viton (FPM) elastomers	O-rings and flange gaskets made of Viton Lower mechanical seal with Viton rings
Suction end drilled in acc. with **- DIN/ISO PN 16** **- ANSI 150 lb**	Only for pumps with free-flow impellers
Special lower seal 	Burgmann HJ977 - Contact faces made of silicon carbide / silicon carbide - Viton sealing elements - Spring and metal components made of stainless steel O-rings and flange gaskets made of Viton (FPM)
Standard power supply cable (H07RN8-F 7G1,5²) **Lengths over 10 m** **For models ULG - YLG - WLG**	Total lengths available: 15 m, 20 m, 30 m, 40 m, 50 m
Standard power supply cable (H07RN8-F 8x1,5²) **for pumps with moisture sensor** **Lengths over 10 m** **For models ULG - YLG - WLG**	Total lengths available: 15 m, 20 m, 30 m, 40 m, 50 m
Tefzel power cable 8G1,5 **for pumps with or without moisture sensor** **For models ULG - YLG - WLG**	Total lengths available: 10 m, 15 m, 20 m, 30 m, 40 m, 50 m
Shielded power supply cable [1]) (S07RC4N8-F- 8G1,5) **for pumps with or without moisture sensor** **for models ULG - YLG - WLG pump operation with frequency inverter**	Total lengths available: 10 m, 15 m, 20 m, 30 m, 40 m, 50 m
Stainless steel shaft **for models ULG - YLG - WLG**	Material 1.4462 + C45 N
Moisture sensor in motor space *)  *) 8G1,5 power cable required	

[1]) The percentage of submersible motor pumps with frequency inverters is on the increase. Pump operation with frequency inverter generates high frequency interference signals in the area of the motor connection cables. The cables between motor and frequency inverter can act like a transmitting antenna. In accordance with the European Directive 89/336/EEC these electromagnetic interferences have to be limited.
The frequency inverter must therefore be equipped with a suitable output filter and/or the electric cables between frequency inverter and motor have to be shielded. Therefore the use of shielded cables is often demanded for submersible motor pumps with frequency inverter operation.

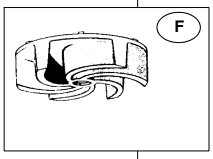
Variants	Description
Module IF-1 + display module *Weight: 0.4 kg / 0.6 kg* 400 V – 16 A max. – 50 Hz Max. distance between pump and display module IF: 50 m Max. fluid temperature: 40 °C Variant with Tefzel cable not possible **Please note: This module is not suitable for frequency inverter operation**	Protection and display equipment for Amarex N UL and YL, consisting of: **Module IF-1** integrated into the pump to transmit the following information: – Direction of rotation of the pump – Excessive humidity in the motor – Condition of the bimetal switch 140 °C – Condition of the bimetal switch 160 °C **Display module IF** for installation and connection to the switchgear. This module serves to display the messages transferred from Module IF-1. Dimensions (mm): 86 x 52.2 x 58 Installation on DIN rail to EN 50 022
Module IF-2 + display module *Weight: 0.5 kg / 0.6 kg* (only for Amarex N 50-220, 65-170, 80-220 and 100-220) 400 V – 16 A max. – 50 Hz Max. distance between pump and display module IF: 50 m Max. fluid temperature: 40 °C Variant with Tefzel cable not possible **Please note: This module is not suitable for frequency inverter operation**	Protection and display equipment for Amarex N UL and YL, consisting of: **Module IF-2** integrated into the pump to control the **soft start** of the motor in two phases and transmit the following information: – Direction of rotation of the pump – Excessive humidity in the motor – Condition of the bimetal switch 140 °C – Condition of the bimetal switch 160 °C **Display module IF** for installation and connection to the switchgear. This module serves to display the messages transferred from Module IF-2. Dimensions (mm): 86 x 52.2 x 58 Installation on DIN rail to EN 50 022
Two-component epoxy enamel, colour: black RAL 9005 for pumps and duckfoot bend	Total film thickness 0.25 mm
Stator with winding for the following mains voltages:	3~ 230 V 3~ 415 V 3~ 500 V 3~ 690 V *) Voltage 415 V = Voltage 400 V x $\frac{400}{415}$

Types if impellers

F impeller

Free flow impeller for fluids containing solid and fibrous stringy material or coarse solids, as well as fluids with entrapped air or gas

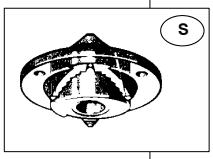
- Raw waste water
- Activated sludge
- Circulated and heating sludge
- Raw and digested sludge
- Mixed water



S impeller

Cutter for domestic sewage water containing fibrous stringy material

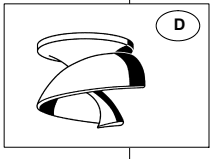
- Domestic waste water
- Raw water
- Faeces



D impeller

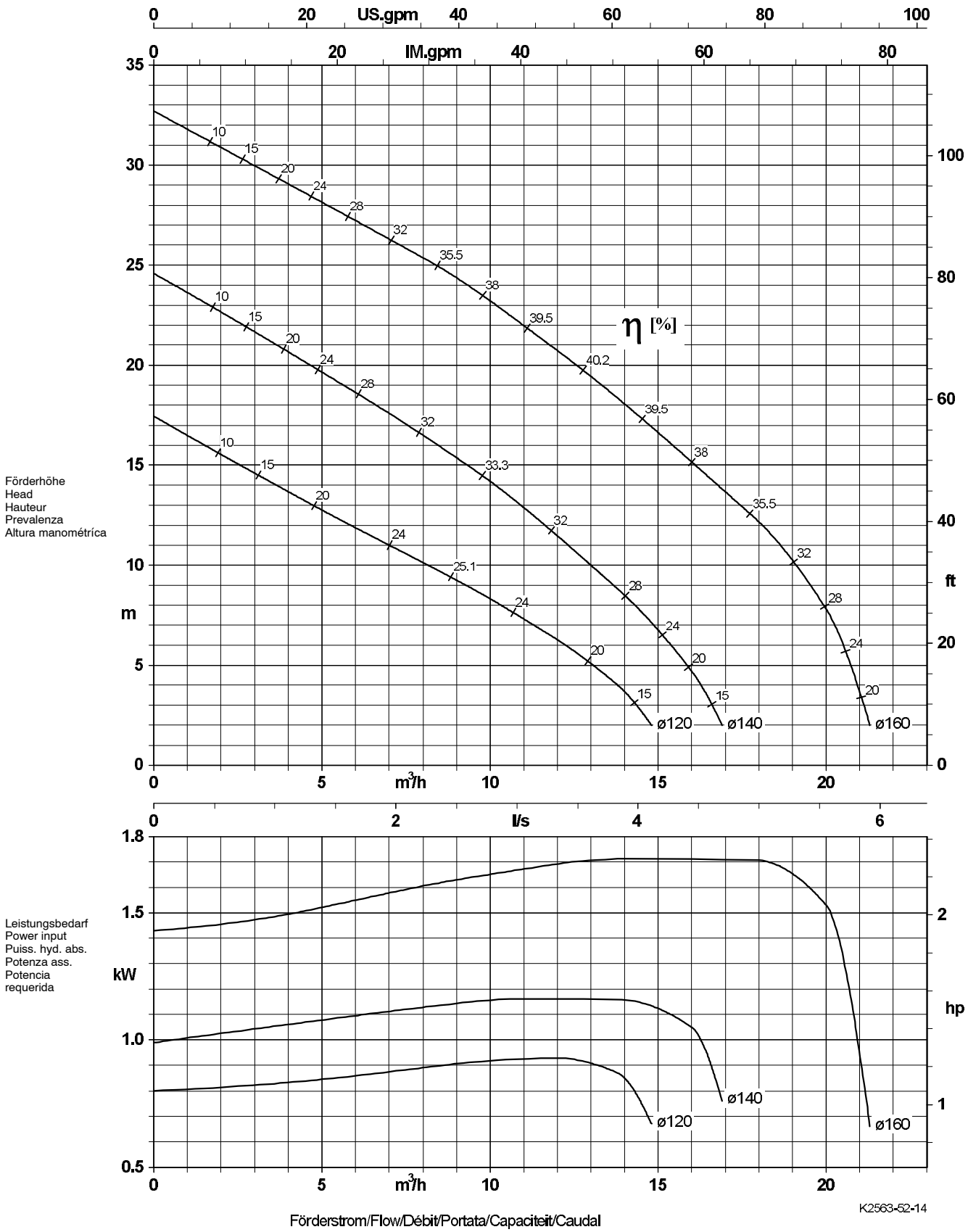
Open diagonal single vane impeller for waste water containing solid and fibrous stringy material or coarse solids

- Raw waste water
- Mixed water
- Raw and digested sludge
- Activated sludge
- Circulated and heating sludge



Amarex N S 50-172

2900 1/min



Förderhöhe
Head
Hauteur
Prevalenza
Altura manométrica

Leistungsbedarf
Power input
Puiss. hyd. abs.
Potenza ass.
Potencia requerida

K2563-52-14

Förderstrom/Flow/Débit/Portata/Capaciteit/Caudal

Kugeldurchgang/Free passage/Passage intégral	6 mm
Passaggio libero/Kogeldoorgang/Paso libre	6 mm

Characteristic curves to ISO 9906-2A. They correspond to the effective motor speed.

Amarex N S 50-172 — 2900 1/min

Laufradform Impeller type Forme de roue Tipo girante Tipo de rodete		freier Durchgang free passage section de passage passaggio libero paso libre	**6 mm**

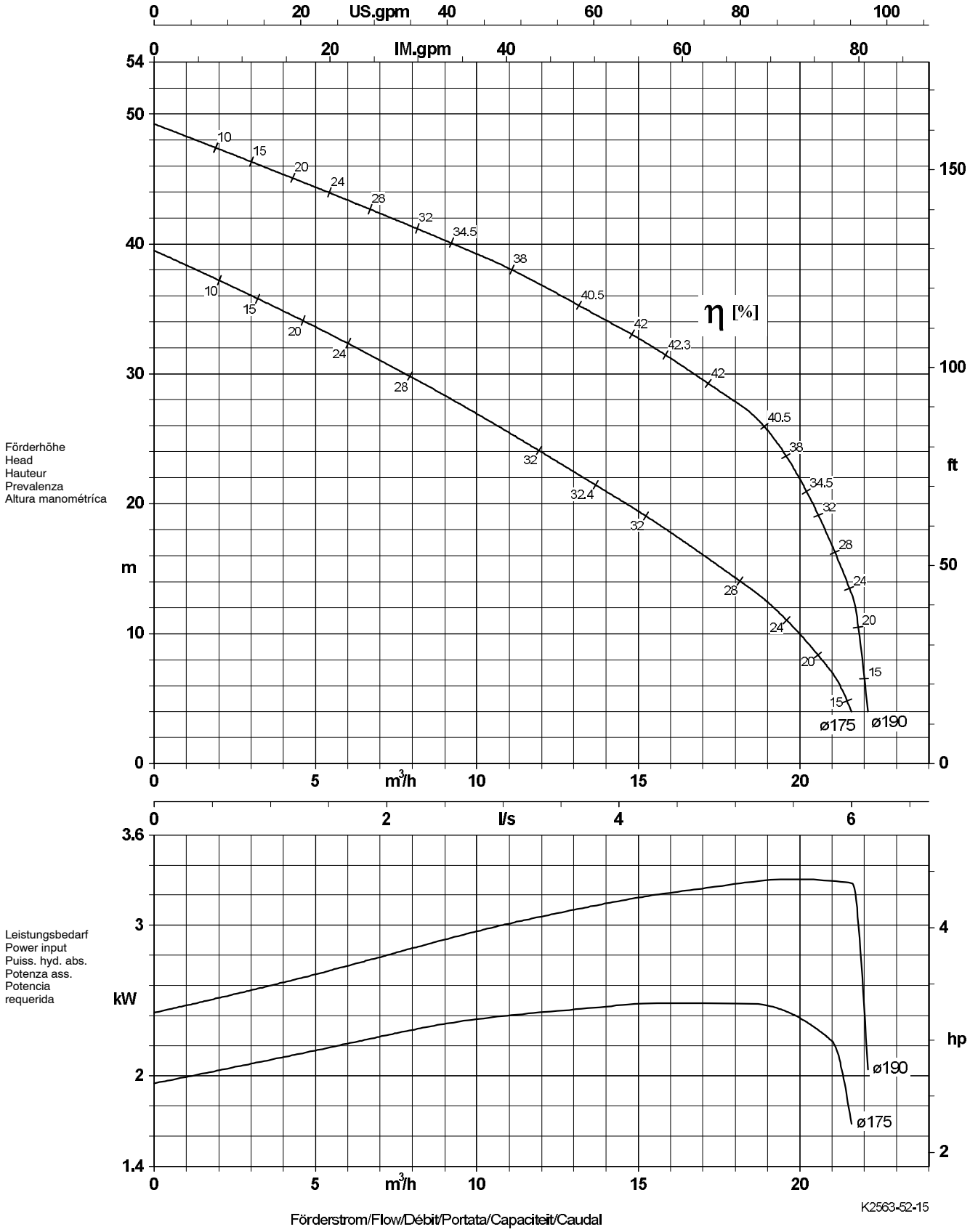
Amarex N S 50-172/ ... — 50 Hz – 3~ 400 V — 2900 1/min

Impeller No.	**Amarex N S 50-172/...**	Power input P_1 [kW]	Rated power P_2 [kW]	Rated current I_N [A]	Starting current I_A [A]	Fluid temperature t [°C]	Weight *) [kg]	Ident. No.
120	**... / 002 ULG**	1.75	1.3	3.56	20	55	39	39 100 017
	... / 002 YLG	1.75	1.3	3.56	20	40	39	39 100 018
	... / 002 WLG	1.75	1.3	3.56	20	60	39	
140	**... / 002 ULG**	1.75	1.3	3.56	20	55	39	39 100 019
	... / 002 YLG	1.75	1.3	3.56	20	40	39	39 100 020
	... / 002 WLG	1.75	1.3	3.56	20	60	39	
160	**... / 012 ULG**	2.6	1.9	4.5	20	55	39	39 100 021
	... / 012 YLG	2.6	1.9	4.5	20	40	39	39 100 022
	... / 012 WLG	2.6	1.9	4.5	20	60	39	

*) Pump without cable and cable gland

Amarex N S 50-222

2900 1/min



Förderhöhe
Head
Hauteur
Prevalenza
Altura manométrica

Leistungsbedarf
Power input
Puiss. hyd. abs.
Potenza ass.
Potencia requerida

Förderstrom/Flow/Débit/Portata/Capaciteit/Caudal

Kugeldurchgang/Free passage/Passage intégral Passaggio libero/Kogeldoorgang/Paso libre	6 mm 6 mm

Characteristic curves to ISO 9906-2A. They correspond to the effective motor speed.

Amarex N S 50-222 — 2900 1/min

Laufradform Impeller type Forme de roue Tipo girante Tipo de rodete		freier Durchgang free passage section de passage passaggio libero paso libre	**6 mm**

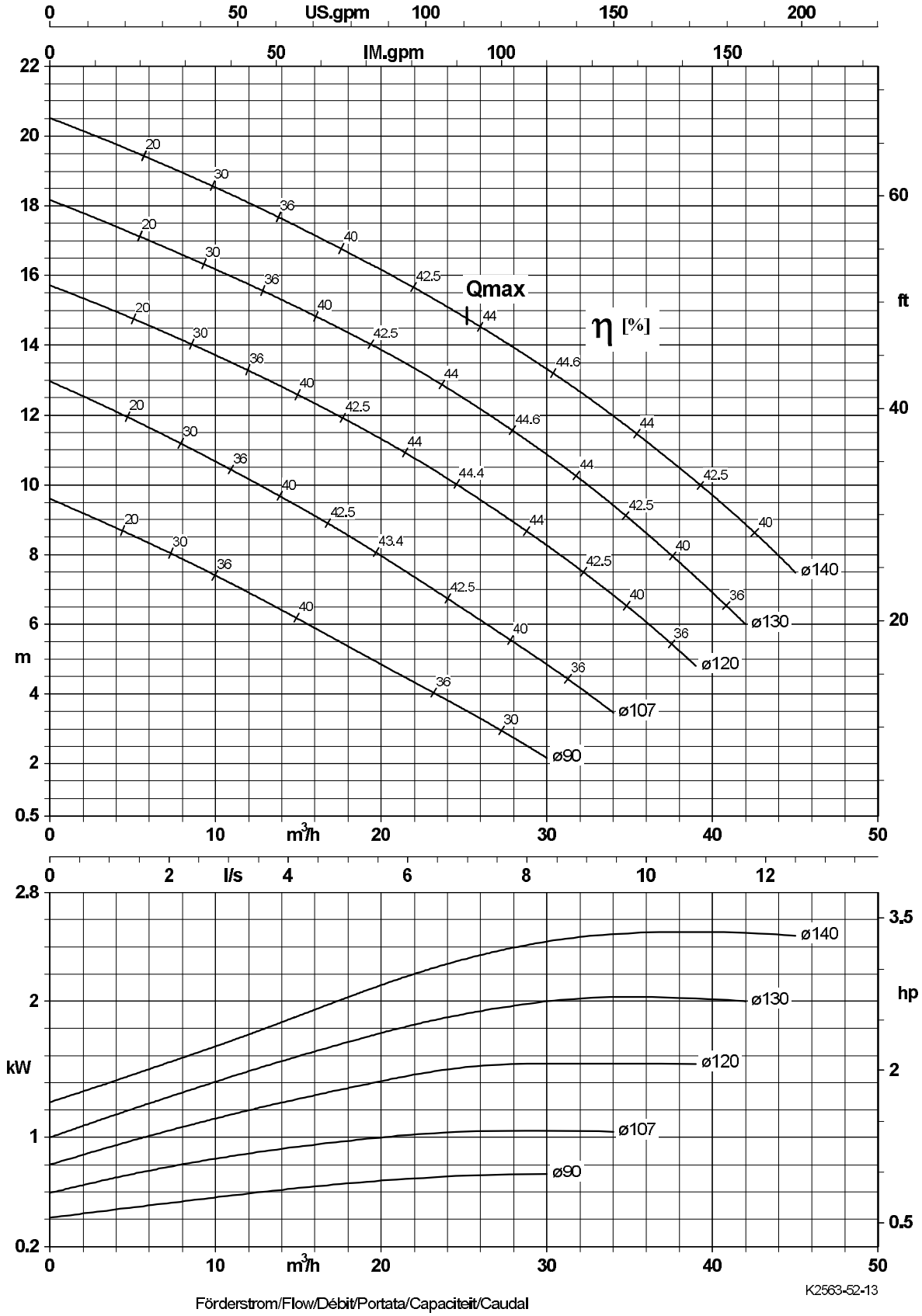
Amarex N S 50-222/ ... — 50 Hz – 3~ 400 V — 2900 1/min

Impeller No.	**Amarex N S 50-222/...**	Power input P_1 [kW]	Rated power P_2 [kW]	Rated current I_N [A]	Starting current I_A [A]	Fluid temperature t [°C]	Weight *) [kg]	Ident. No.
175	... / **032 ULG**	4.0	3.1	7.0	50	55	54	39 100 041
	... / **032 YLG**	4.0	3.1	7.0	50	40	54	39 100 042
	... / **032 WLG**	4.0	3.1	7.0	50	60	54	
190	... / **042 ULG**	5.3	4.2	8.8	50	55	54	39 100 043
	... / **042 YLG**	5.3	4.2	8.8	50	40	54	39 100 044
	... / **042 WLG**	5.3	4.2	8.8	50	60	54	

*) Pump without cable and cable gland

Amarex N F 50-170

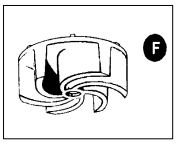
2900 1/min



Kugeldurchgang/Free passage/Passage intégral Passaggio libero/Kogeldoorgang/Paso libre	40 mm 40 mm

Characteristic curves to ISO 9906-2A. They correspond to the effective motor speed.

Amarex N F 50-170 — 2900 1/min

Laufradform Impeller type Forme de roue Tipo girante Tipo de rodete		freier Durchgang free passage section de passage passaggio libero paso libre	**40 mm**

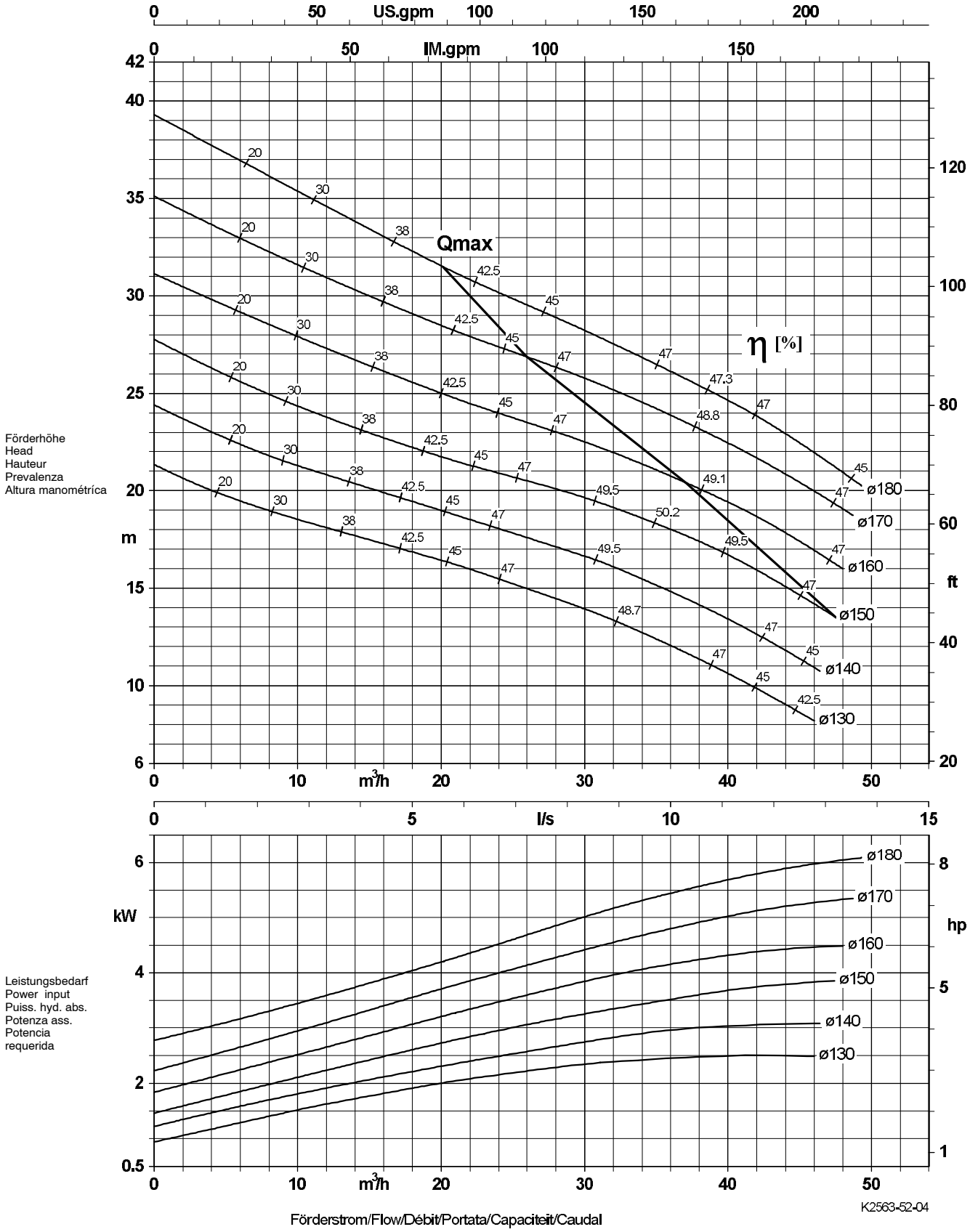
Amarex N F 50-170/ ... — 50 Hz – 3~ 400 V — 2900 1/min

Impeller No.	**Amarex N F 50-170/...**	Power input P_1 [kW]	Rated power P_2 [kW]	Rated current I_N [A]	Starting current I_A [A]	Fluid temperature t [°C]	Weight [kg]	Ident. No.
90	... / **002 ULG**	1.75	1.3	3.56	20	55	41	39 100 045
	... / **002 YLG**	1.75	1.3	3.56	20	40	41	39 100 046
	... / **002 WLG**	1.75	1.3	3.56	20	60	41	
107	... / **002 ULG**	1.75	1.3	3.56	20	55	41	39 100 047
	... / **002 YLG**	1.75	1.3	3.56	20	40	41	39 100 048
	... / **002 WLG**	1.75	1.3	3.56	20	60	41	
120	... / **012 ULG**	2.6	1.9	4.5	20	55	42	39 100 049
	... / **012 YLG**	2.6	1.9	4.5	20	40	42	39 100 050
	... / **012 WLG**	2.6	1.9	4.5	20	60	42	
130	... / **022 ULG**	3.06	2.3	5.1	20	55	42	39 100 051
	... / **022 YLG**	3.06	2.3	5.1	20	40	42	39 100 052
	... / **022 WLG**	3.06	2.3	5.1	20	60	42	
140	... / **022 ULG**	3.06	2.3	5.1	20	55	43	39 100 053
	... / **022 YLG**	3.06	2.3	5.1	20	40	43	39 100 054
	... / **022 WLG**	3.06	2.3	5.1	20	60	43	

The characteristic curves and values of the YLG model apply to variants G1, G2 and GH

Amarex N F 50-220

2900 1/min

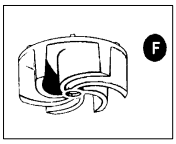


Förderstrom/Flow/Débit/Portata/Capaciteit/Caudal

Kugeldurchgang/Free passage/Passage intégral Passaggio libero/Kogeldoorgang/Paso libre	40 mm 40 mm

Characteristic curves to ISO 9906-2A. They correspond to the effective motor speed.

Amarex N F 50-220 — 2900 1/min

Laufradform Impeller type Forme de roue Tipo girante Tipo de rodete		freier Durchgang free passage section de passage passaggio libero paso libre	**40 mm**

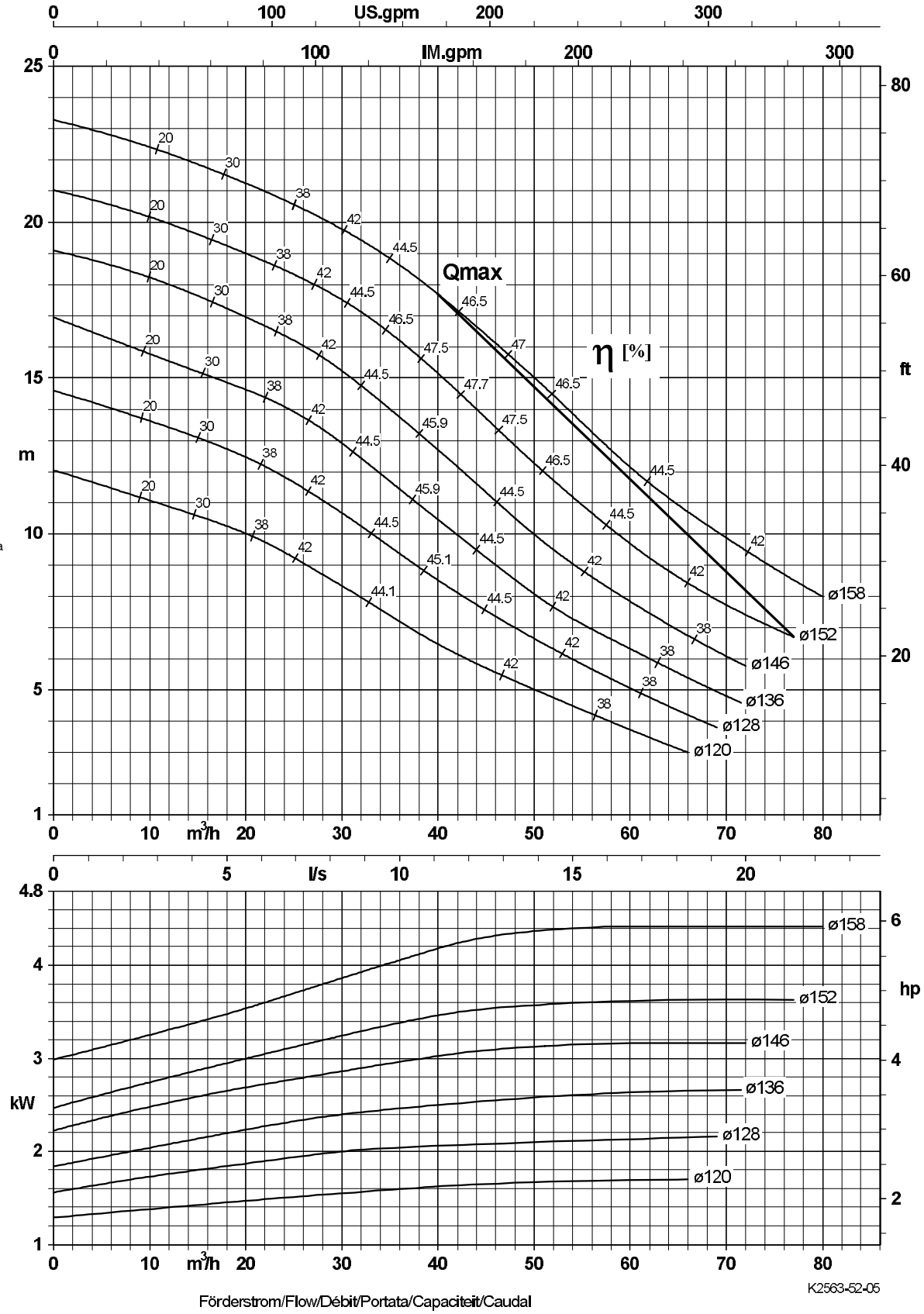
Amarex N F 50-220/ ... — 50 Hz – 3~ 400 V — 2900 1/min

Impeller No.	**Amarex N F 50-220/...**	Power input P_1 [kW]	Rated power P_2 [kW]	Rated current I_N [A]	Starting current I_A [A]	Fluid temperature t [°C]	Weight [kg]	Ident. No.
130	... / **032 ULG**	4.0	3.1	7.0	50	55	52	39 100 067
	... / **032 YLG**	4.0	3.1	7.0	50	40	52	39 100 068
	... / **032 WLG**	4.0	3.1	7.0	50	60	52	
140	... / **032 ULG**	4.0	3.1	7.0	50	55	52	39 100 069
	... / **032 YLG**	4.0	3.1	7.0	50	40	52	39 100 070
	... / **032 WLG**	4.0	3.1	7.0	50	60	52	
150	... / **042 ULG**	5.3	4.2	8.8	50	55	53	39 100 071
	... / **042 YLG**	5.3	4.2	8.8	50	40	53	39 100 072
	... / **042 WLG**	5.3	4.2	8.8	50	60	53	
160	... / **042 ULG**	5.3	4.2	8.8	50	55	53	39 100 073
	... / **042 YLG**	5.3	4.2	8.8	50	40	53	39 100 074
	... / **042 WLG**	5.3	4.2	8.8	50	60	53	
170	... / **042 ULG**	5.3	4.2	8.8	50	55	54	39 100 075
	... / **042 YLG**	5.3	4.2	8.8	50	40	54	39 100 076
	... / **042 WLG**	5.3	4.2	8.8	50	60	54	
180	... / **042 ULG**	5.3	4.2	8.8	50	55	54	39 100 077
	... / **042 YLG**	5.3	4.2	8.8	50	40	54	39 100 078
	... / **042 WLG**	5.3	4.2	8.8	50	60	54	

The characteristic curves and values of the YLG model apply to variants G1, G2 and GH

Amarex N F 65-170

2900 1/min



Förderhöhe
Head
Hauteur
Prevalenza
Altura manométrica

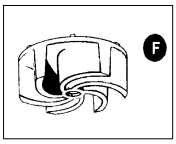
Leistungsbedarf
Power input
Puiss. hyd. abs.
Potenza ass.
Potencia requerida

Förderstrom/Flow/Débit/Portata/Capaciteit/Caudal

Kugeldurchgang/Free passage/Passage intégral Passaggio libero/Kogeldoorgang/Paso libre	65 mm 65 mm

Characteristic curves to ISO 9906-2A. They correspond to the effective motor speed.

Amarex N F 65-170 — 2900 1/min

Laufradform Impeller type Forme de roue Tipo girante Tipo de rodete		freier Durchgang free passage section de passage passaggio libero paso libre	**65 mm**

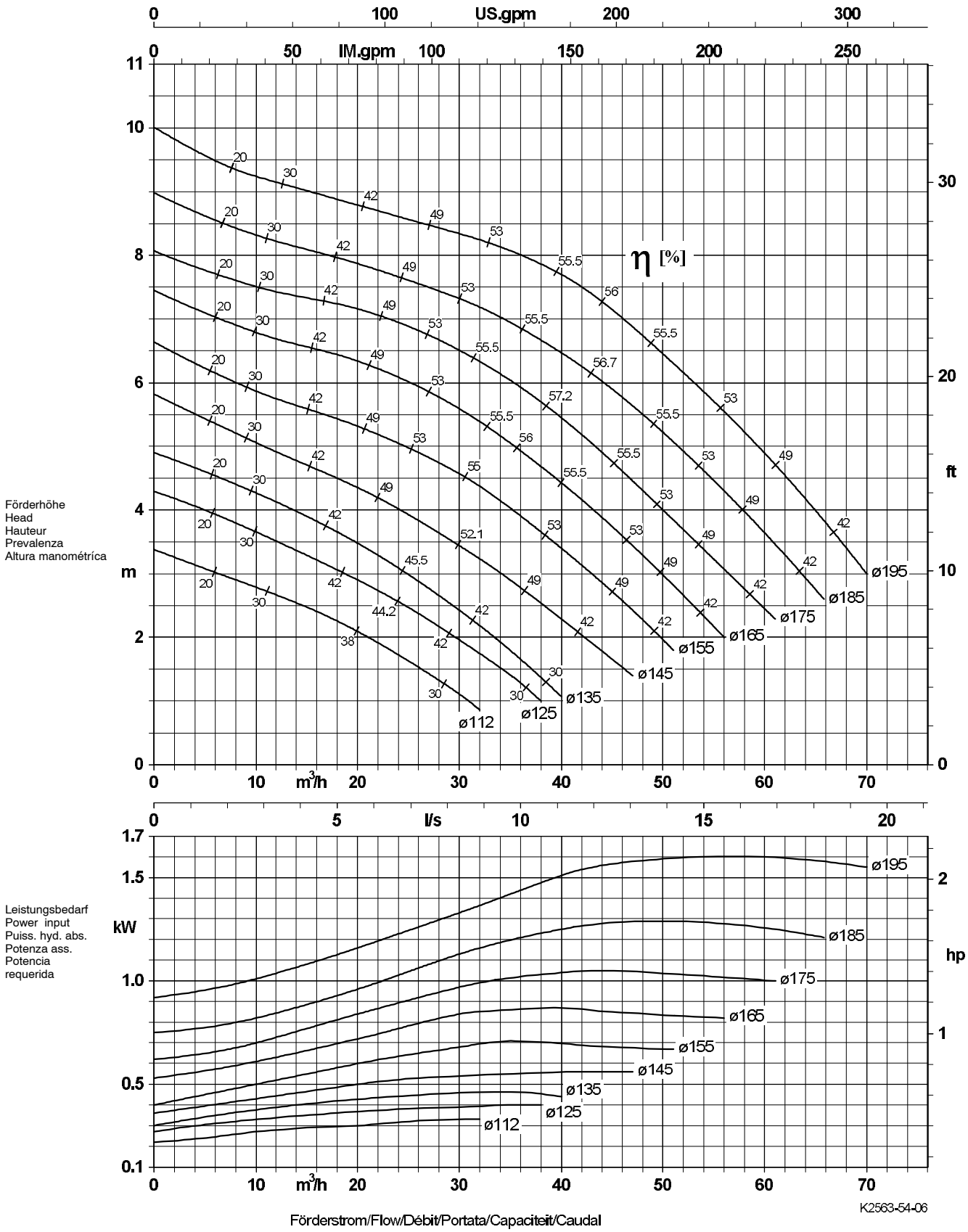
Amarex N F 65-170/ ... — 50 Hz – 3~ 400 V — 2900 1/min

Impeller No.	**Amarex N F 65-170/...**	Power input P_1 [kW]	Rated power P_2 [kW]	Rated current I_N [A]	Starting current I_A [A]	Fluid temperature t [°C]	Weight [kg]	Ident. No.
120	... / **032 ULG**	4.0	3.1	7.0	50	55	58	39 100 085
	... / **032 YLG**	4.0	3.1	7.0	50	40	58	39 100 086
	... / **032 WLG**	4.0	3.1	7.0	50	60	58	
128	... / **032 ULG**	4.0	3.1	7.0	50	55	58	39 100 087
	... / **032 YLG**	4.0	3.1	7.0	50	40	58	39 100 088
	... / **032 WLG**	4.0	3.1	7.0	50	60	58	
136	... / **032 ULG**	4.0	3.1	7.0	50	55	59	39 100 089
	... / **032 YLG**	4.0	3.1	7.0	50	40	59	39 100 090
	... / **032 WLG**	4.0	3.1	7.0	50	60	59	
146	... / **042 ULG**	5.3	4.2	8.8	50	55	59	39 100 091
	... / **042 YLG**	5.3	4.2	8.8	50	40	59	39 100 092
	... / **042 WLG**	5.3	4.2	8.8	50	60	59	
152	... / **042 ULG**	5.3	4.2	8.8	50	55	60	39 100 093
	... / **042 YLG**	5.3	4.2	8.8	50	40	60	39 100 094
	... / **042 WLG**	5.3	4.2	8.8	50	60	60	
158	... / **042 ULG**	5.3	4.2	8.8	50	55	60	39 100 095
	... / **042 YLG**	5.3	4.2	8.8	50	40	60	39 100 096
	... / **042 WLG**	5.3	4.2	8.8	50	60	60	

The characteristic curves and values of the YLG model apply to variants G1, G2 and GH

Amarex N F 65-220

1450 1/min



Förderhöhe
Head
Hauteur
Prevalenza
Altura manométrica

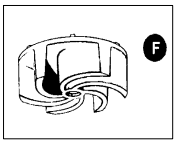
Leistungsbedarf
Power input
Puiss. hyd. abs.
Potenza ass.
Potencia requerida

Förderstrom/Flow/Débit/Portata/Capaciteit/Caudal

Kugeldurchgang/Free passage/Passage intégral Passaggio libero/Kogeldoorgang/Paso libre	65 mm 65 mm

Characteristic curves to ISO 9906-2A. They correspond to the effective motor speed.

Amarex N F 65-220 — 1450 1/min

Laufradform Impeller type Forme de roue Tipo girante Tipo de rodete		freier Durchgang free passage section de passage passaggio libero paso libre	**65 mm**

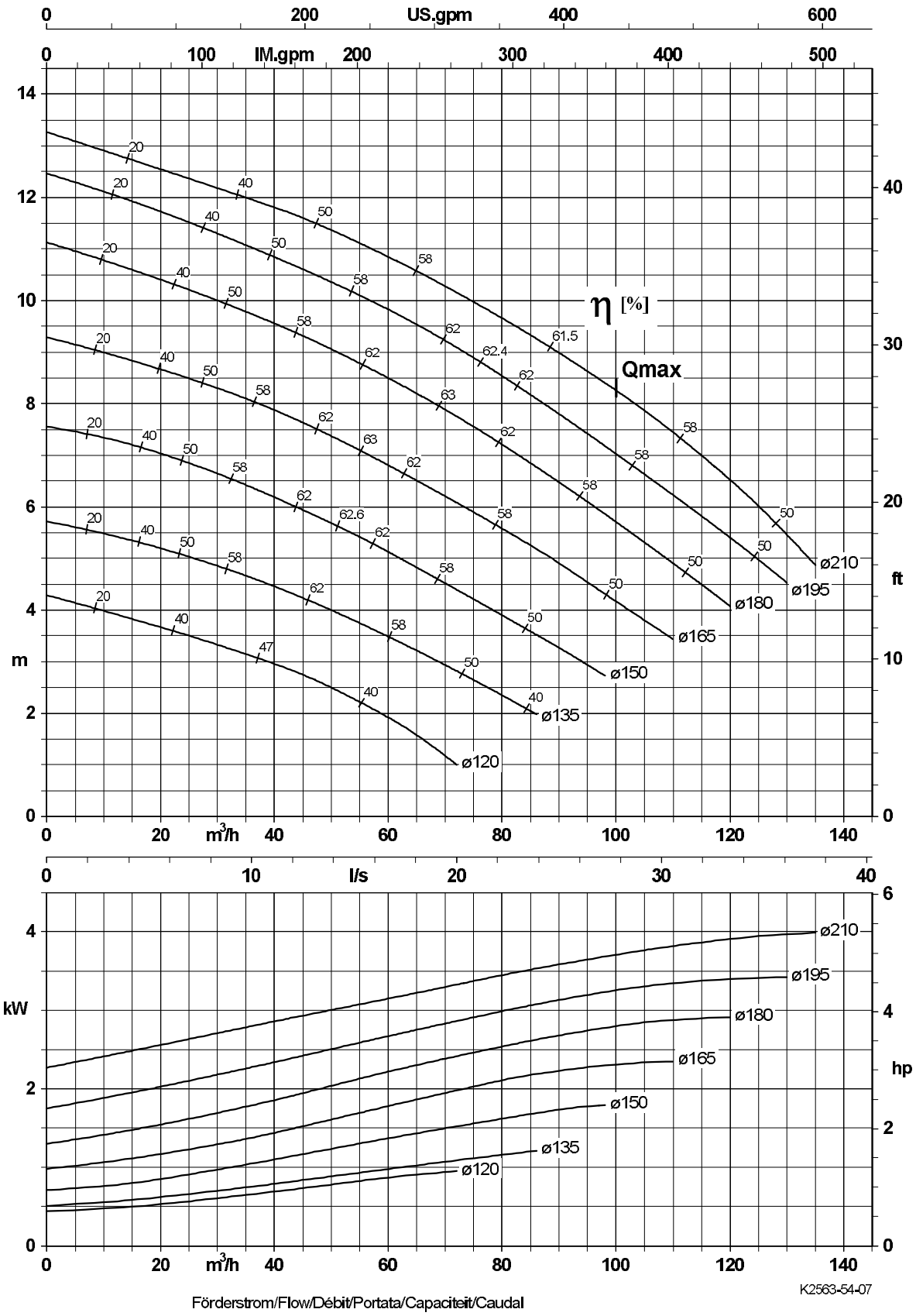
Amarex N F 65-220/ ... — 50 Hz – 3~ 400 V — 1450 1/min

Impeller No.	**Amarex N F 65-220/...**	Power input P_1 [kW]	Rated power P_2 [kW]	Rated current I_N [A]	Starting current I_A [A]	Fluid temperature t [°C]	Weight [kg]	Ident. No.
112	... / **004 ULG**	1.23	0.8	2.75	17.4	55	49	39 100 097
	... / **004 YLG**	1.23	0.8	2.75	17.4	40	49	39 100 098
	... / **004 WLG**	1.23	0.8	2.75	17.4	60	49	
125	... / **004 ULG**	1.23	0.8	2.75	17.4	55	49	39 100 099
	... / **004 YLG**	1.23	0.8	2.75	17.4	40	49	39 100 100
	... / **004 WLG**	1.23	0.8	2.75	17.4	60	49	
135	... / **004 ULG**	1.23	0.8	2.75	17.4	55	49	39 100 101
	... / **004 YLG**	1.23	0.8	2.75	17.4	40	49	39 100 102
	... / **004 WLG**	1.23	0.8	2.75	17.4	60	49	
145	... / **004 ULG**	1.23	0.8	2.75	17.4	55	49	39 100 103
	... / **004 YLG**	1.23	0.8	2.75	17.4	40	49	39 100 104
	... / **004 WLG**	1.23	0.8	2.75	17.4	60	49	
155	... / **004 ULG**	1.23	0.8	2.75	17.4	55	49	39 100 105
	... / **004 YLG**	1.23	0.8	2.75	17.4	40	49	39 100 106
	... / **004 WLG**	1.23	0.8	2.75	17.4	60	49	
165	... / **014 ULG**	1.94	1.3	3.54	17.4	55	50	39 100 107
	... / **014 YLG**	1.94	1.3	3.54	17.4	40	50	39 100 108
	... / **014 WLG**	1.94	1.3	3.54	17.4	60	50	
175	... / **014 ULG**	1.94	1.3	3.54	17.4	55	50	39 100 109
	... / **014 YLG**	1.94	1.3	3.54	17.4	40	50	39 100 110
	... / **014 WLG**	1.94	1.3	3.54	17.4	60	50	
185	... / **024 ULG**	2.56	1.8	4.25	17.4	55	51	39 100 111
	... / **024 YLG**	2.56	1.8	4.25	17.4	40	51	39 100 112
	... / **024 WLG**	2.56	1.8	4.25	17.4	60	51	
195	... / **024 ULG**	2.56	1.8	4.25	17.4	55	51	39 100 113
	... / **024 YLG**	2.56	1.8	4.25	17.4	40	51	39 100 114
	... / **024 WLG**	2.56	1.8	4.25	17.4	60	51	

The characteristic curves and values of the YLG model apply to variants G1, G2 and GH

Amarex N F 80-220

1450 1/min



Förderhöhe
Head
Hauteur
Prevalenza
Altura manométrica

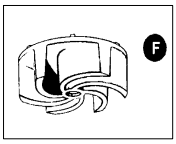
Leistungsbedarf
Power input
Puiss. hyd. abs.
Potenza ass.
Potencia requerida

Förderstrom/Flow/Débit/Portata/Capaciteit/Caudal

Kugeldurchgang/Free passage/Passage intégral	76 mm
Passaggio libero/Kogeldoorgang/Paso libre	76 mm

Characteristic curves to ISO 9906-2A. They correspond to the effective motor speed.

Amarex N F 80-220 — 1450 1/min

Laufradform Impeller type Forme de roue Tipo girante Tipo de rodete		freier Durchgang free passage section de passage passaggio libero paso libre	**76 mm**

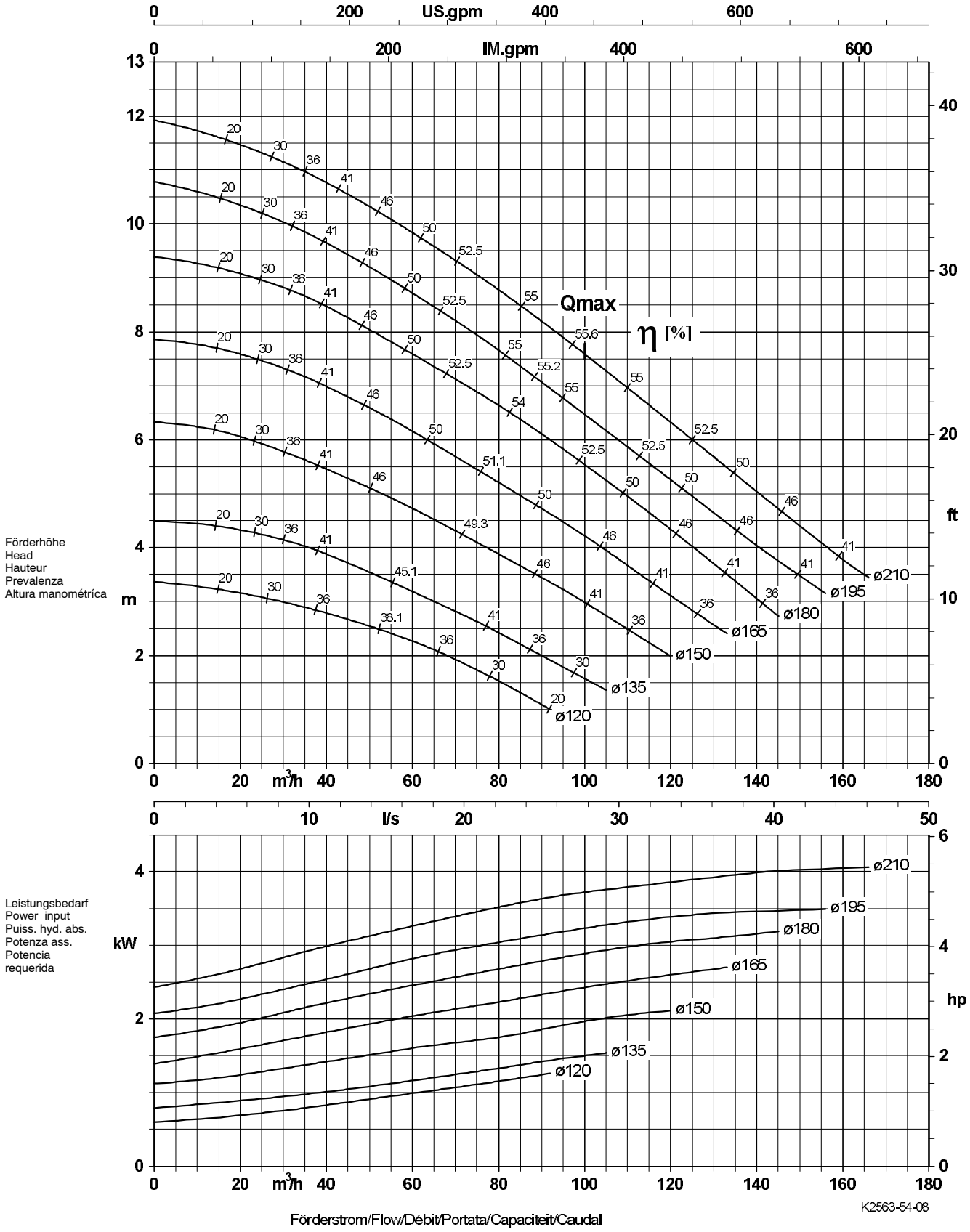
Amarex N F 80-220/ ... — 50 Hz – 3~ 400 V — 1450 1/min

Impeller No.	**Amarex N F 80-220/...**	Power input P_1 [kW]	Rated power P_2 [kW]	Rated current I_N [A]	Starting current I_A [A]	Fluid temperature t [°C]	Weight [kg]	Ident. No.
120	... / **034 ULG**	2.6	1.9	5.87	37.5	55	63	39 100 123
	... / **034 YLG**	2.6	1.9	5.87	37.5	40	63	39 100 124
	... / **034 WLG**	2.6	1.9	5.87	37.5	60	63	
135	... / **034 ULG**	3.5	2.6	6.5	37.5	55	63	39 100 125
	... / **034 YLG**	3.5	2.6	6.5	37.5	40	63	39 100 126
	... / **034 WLG**	3.5	2.6	6.5	37.5	60	63	
150	... / **034 ULG**	3.5	2.6	6.5	37.5	55	63	39 100 127
	... / **034 YLG**	3.5	2.6	6.5	37.5	40	63	39 100 128
	... / **034 WLG**	3.5	2.6	6.5	37.5	60	63	
165	... / **034 ULG**	3.5	2.6	6.5	37.5	55	64	39 100 129
	... / **034 YLG**	3.5	2.6	6.5	37.5	40	64	39 100 130
	... / **034 WLG**	3.5	2.6	6.5	37.5	60	64	
180	... / **044 ULG**	5.13	3.7	8.4	37.5	55	65	39 100 131
	... / **044 YLG**	5.13	3.7	8.4	37.5	40	65	39 100 132
	... / **044 WLG**	5.13	3.7	8.4	37.5	60	65	
195	... / **044 ULG**	5.13	3.7	8.4	37.5	55	65	39 100 133
	... / **044 YLG**	5.13	3.7	8.4	37.5	40	65	39 100 134
	... / **044 WLG**	5.13	3.7	8.4	37.5	60	65	
210	... / **044 ULG**	5.13	3.7	8.4	37.5	55	66	39 100 135
	... / **044 YLG**	5.13	3.7	8.4	37.5	40	66	39 100 136
	... / **044 WLG**	5.13	3.7	8.4	37.5	60	66	

The characteristic curves and values of the YLG model apply to variants G1, G2 and GH

Amarex N F 100-220

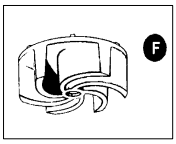
1450 1/min



Kugeldurchgang/Free passage/Passage intégral Passaggio libero/Kogeldoorgang/Paso libre	100 mm 100 mm

Characteristic curves to ISO 9906-2A. They correspond to the effective motor speed.

Amarex N F 100-220 — 1450 1/min

Laufradform Impeller type Forme de roue Tipo girante Tipo de rodete		freier Durchgang free passage section de passage passaggio libero paso libre	**100 mm**

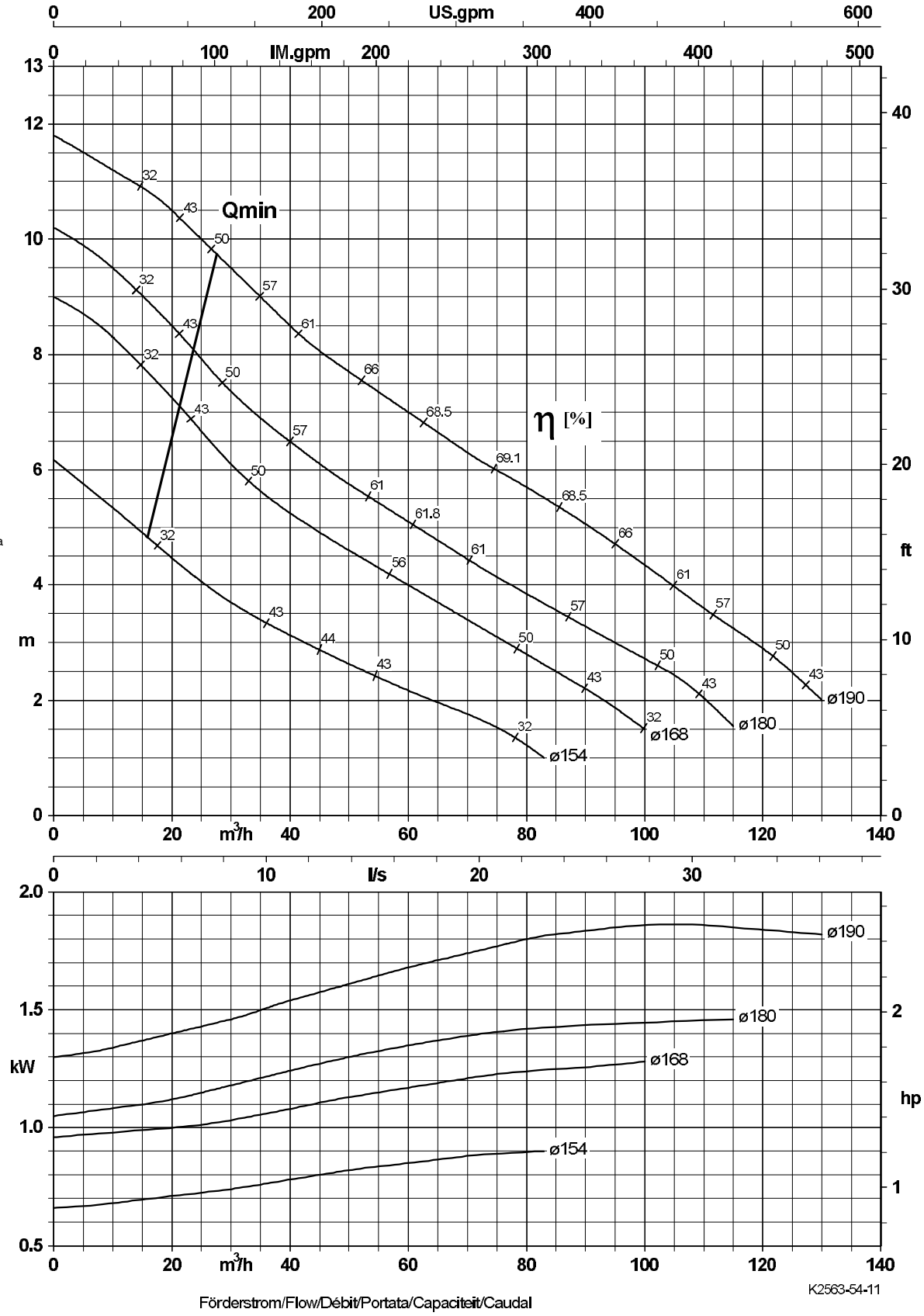
Amarex N F 100-220/ ... — 50 Hz – 3~ 400 V — 1450 1/min

Impeller No.	**Amarex N F 100-220/...**	Power input P_1 [kW]	Rated power P_2 [kW]	Rated current I_N [A]	Starting current I_A [A]	Fluid temperature t [°C]	Weight [kg]	Ident. No.
120	... / **034 ULG**	2.6	1.9	5.87	37.5	55	64	39 100 145
	... / **034 YLG**	2.6	1.9	5.87	37.5	40	64	39 100 146
	... / **034 WLG**	2.6	1.9	5.87	37.5	60	64	
135	... / **034 ULG**	3.5	2.6	6.5	37.5	55	64	39 100 147
	... / **034 YLG**	3.5	2.6	6.5	37.5	40	64	39 100 148
	... / **034 WLG**	3.5	2.6	6.5	37.5	60	64	
150	... / **034 ULG**	3.5	2.6	6.5	37.5	55	64	39 100 149
	... / **034 YLG**	3.5	2.6	6.5	37.5	40	64	39 100 150
	... / **034 WLG**	3.5	2.6	6.5	37.5	60	64	
165	... / **044 ULG**	5.13	3.7	8.4	37.5	55	65	39 100 151
	... / **044 YLG**	5.13	3.7	8.4	37.5	40	65	39 100 152
	... / **044 WLG**	5.13	3.7	8.4	37.5	60	65	
180	... / **044 ULG**	5.13	3.7	8.4	37.5	55	66	39 100 153
	... / **044 YLG**	5.13	3.7	8.4	37.5	40	66	39 100 154
	... / **044 WLG**	5.13	3.7	8.4	37.5	60	66	
195	... / **044 ULG**	5.13	3.7	8.4	37.5	55	67	39 100 155
	... / **044 YLG**	5.13	3.7	8.4	37.5	40	67	39 100 156
	... / **044 WLG**	5.13	3.7	8.4	37.5	60	67	
210	... / **044 ULG**	5.13	3.7	8.4	37.5	55	67	39 100 157
	... / **044 YLG**	5.13	3.7	8.4	37.5	40	67	39 100 158
	... / **044 WLG**	5.13	3.7	8.4	37.5	60	67	

The characteristic curves and values of the YLG model apply to variants G1, G2 and GH

Amarex N D 80-220

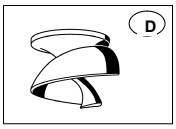
1450 1/min



Kugeldurchgang/Free passage/Passage intégral Passaggio libero/Kogeldoorgang/Paso libre	65 mm 65 mm

Characteristic curves to ISO 9906-2A. They correspond to the effective motor speed.

Amarex N D 80-220 — 1450 1/min

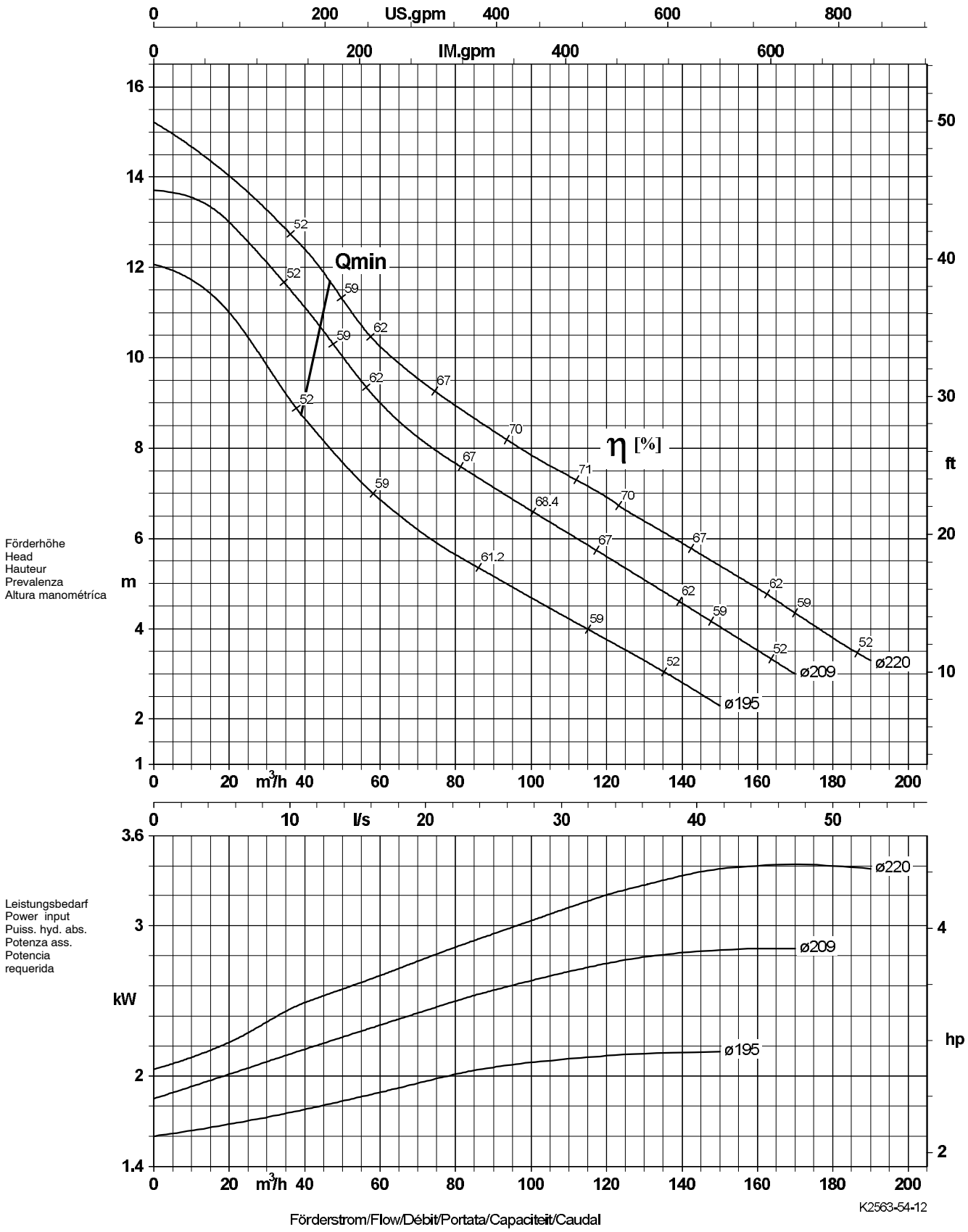
Laufradform Impeller type Forme de roue Tipo girante Tipo de rodete		freier Durchgang free passage section de passage passaggio libero paso libre	**65 mm**

Amarex N D 80-220/ ... — 50 Hz – 3~ 400 V — 1450 1/min

Impeller No.	**Amarex N D 80-220/...**	Power input P_1 [kW]	Rated power P_2 [kW]	Rated current I_N [A]	Starting current I_A [A]	Fluid temperature t [°C]	Weight [kg]	Ident. No.
154	**...** / **034 ULG**	2.6	1.9	5.87	37.5	55	74	39 100 345
	... / **034 YLG**	2.6	1.9	5.87	37.5	40	74	39 100 346
	... / **034 WLG**	2.6	1.9	5.87	37.5	60	74	
168	**...** / **034 ULG**	2.6	1.9	5.87	37.5	55	74	39 100 347
	... / **034 YLG**	2.6	1.9	5.87	37.5	40	74	39 100 348
	... / **034 WLG**	2.6	1.9	5.87	37.5	60	74	
180	**...** / **034 ULG**	2.6	1.9	5.87	37.5	55	74	39 100 349
	... / **034 YLG**	2.6	1.9	5.87	37.5	40	74	39 100 350
	... / **034 WLG**	2.6	1.9	5.87	37.5	60	74	
190	**...** / **034 ULG**	2.6	1.9	5.87	37.5	55	75	39 100 351
	... / **034 YLG**	2.6	1.9	5.87	37.5	40	75	39 100 352
	... / **034 WLG**	2.6	1.9	5.87	37.5	60	75	

Amarex N D 100-220

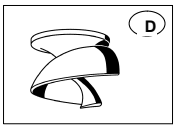
1450 1/min



Kugeldurchgang/Free passage/Passage intégral Passaggio libero/Kogeldoorgang/Paso libre	76 mm 76 mm

Characteristic curves to ISO 9906-2A. They correspond to the effective motor speed.

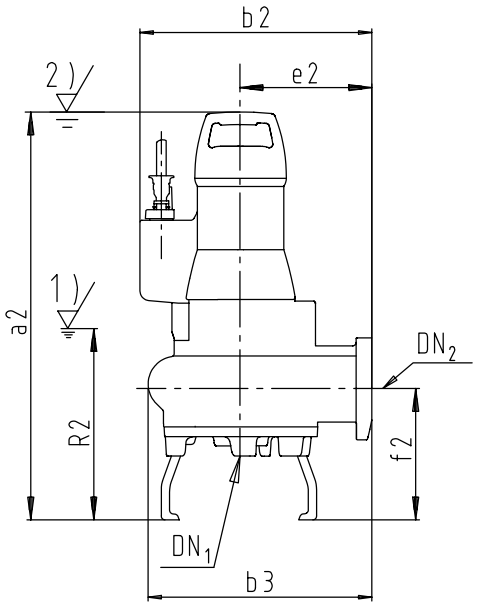
Amarex N D 100-220 — 1450 1/min

Laufradform Impeller type Forme de roue Tipo girante Tipo de rodete		freier Durchgang free passage section de passage passaggio libero paso libre	**76 mm**

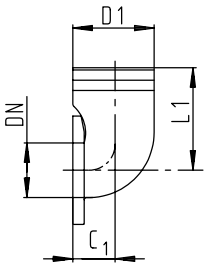
Amarex N D 100-220/ ... — 50 Hz – 3~ 400 V — 1450 1/min

Impeller No.	**Amarex N D 100-220/...**	Power input P_1 [kW]	Rated power P_2 [kW]	Rated current I_N [A]	Starting current I_A [A]	Fluid temperature t [°C]	Weight [kg]	Ident. No.
195	**... / 034 ULG**	3.5	2.6	6.5	37.5	55	79	39 100 366
	... / 034 YLG	3.5	2.6	6.5	37.5	40	79	39 100 367
	... / 034 WLG	3.5	2.6	6.5	37.5	60	79	
209	**... / 044 ULG**	5.13	3.7	8.4	37.5	55	79	39 100 368
	... / 044 YLG	5.13	3.7	8.4	37.5	40	79	39 100 369
	... / 044 WLG	5.13	3.7	8.4	37.5	60	79	
220	**... / 044 ULG**	5.13	3.7	8.4	37.5	55	80	39 100 370
	... / 044 YLG	5.13	3.7	8.4	37.5	40	80	39 100 371
	... / 044 WLG	5.13	3.7	8.4	37.5	60	80	

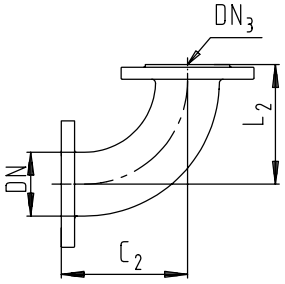
Dimensions Table Amarex N, Transportable Model



2563:150/2



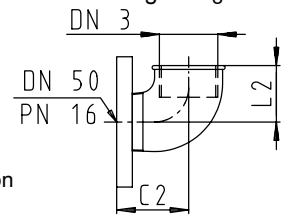
DN	D_1	C_1	L_1
65	75	40	135
80	75	115	175
100	110	45	195



DN	DN_3	C_2	L_2
65	65	135	135
80	80	135	135
100	100	120	175

DN as per ISO 7005
DIN 2501

Elbow flange DN_3



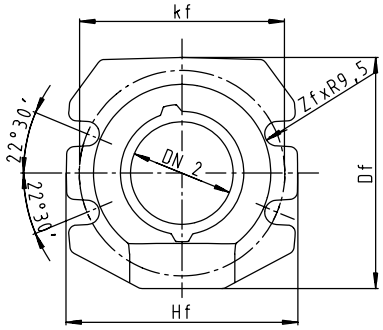
DN	DN_3	C_2	L_2
50	G 2"	78	58

[1]) Lowest switch-off point for automatic operation
[2]) Minimum submergence for continuous operation

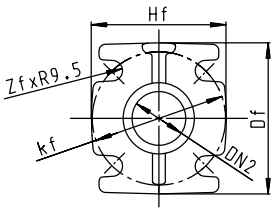
(accessories P27 + P14)

Pump flange DN_2

DN 80 and 100
ISO 7005 - PN 16
DIN 2501 - PN 16



DN 50 and 65
ISO 7005 - PN 16
DIN 2501 - PN 16

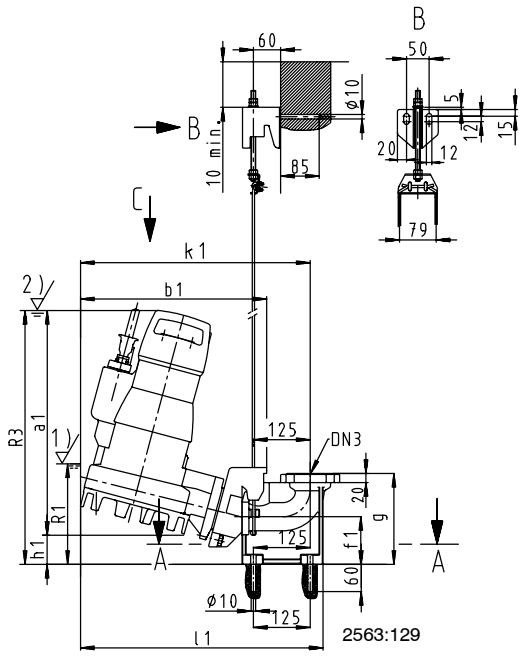


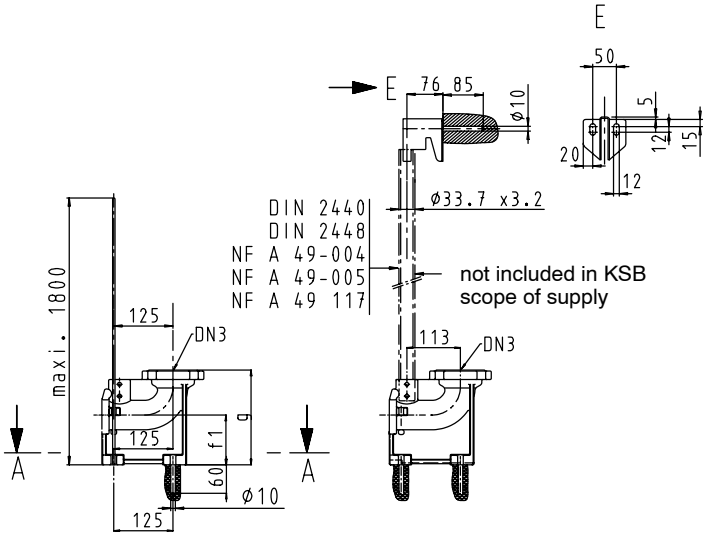
Amarex N	Pump								Flange		
	DN_1	DN_2	a_2 *)	b_2	b_3	e_2	f_2 *)	R_2	H_f	K_f	D_f
50-172 S	-	50	547	322	293	180	152	207	125	125	140
50-170 F	50	50	547	322	293	180	152	207	125	125	140
50-222 S	-	50	609	336	307	180	155	203	125	125	140
50-220 F	50	50	609	336	307	180	155	203	125	125	140
65-170 F	65	65	653	367	338	210	164	248	144	145	164
65-220 F	65	65	593	353	347	210	163	253	144	145	164
80-220 F	80	80	672	386	392	230	187	249	180	160	180
80-220 D	-	80	672	386	392	230	187	249	180	160	180
100-220 F	100	100	698	383	390	230	207	277	202	180	205
100-220 D	-	100	698	383	390	230	207	277	202	180	205

*) with foot pad +10 mm

Dimensions Table Amarex N 50-... Wire, Hoop and Rail Arrangements – Inclined Claw

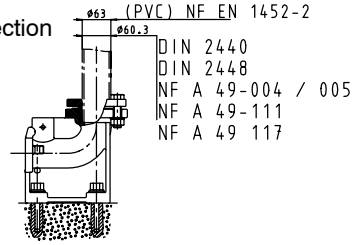
DN 3 = DN 50 : DIN ISO ANSI = Standard

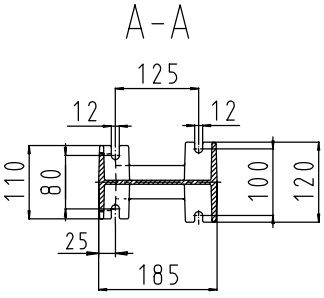


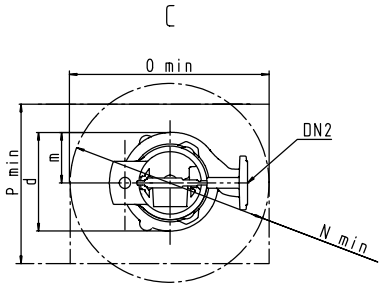


[1]) Lowest switch-off point for automatic operation
[2]) Minimum submergence for continuous operation

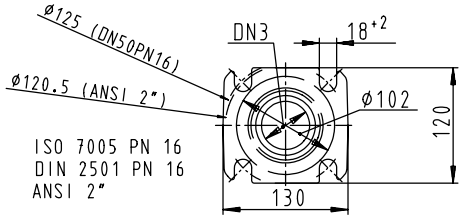
Clamped connection



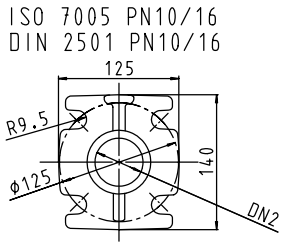




Flange of duckfoot bend DN_3



Pump flange DN_2



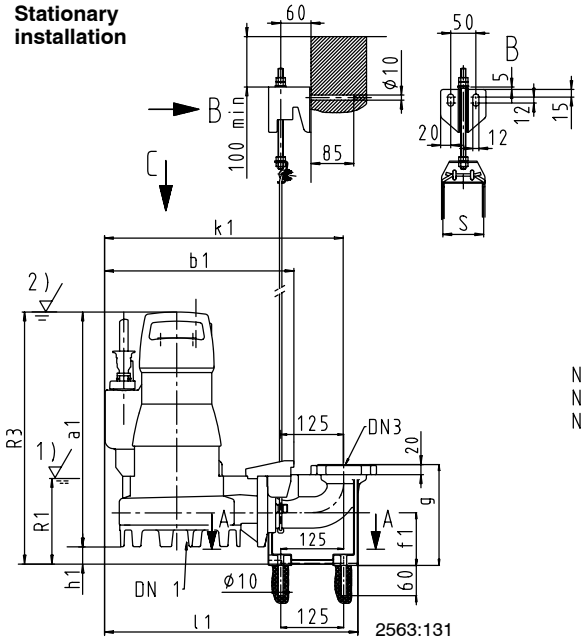
Amarex N	Foundation			
Amarex N	DN_3	N	O	P
50-172 S	50	480	480	350
50-222 S	50	480	480	350

Amarex N	Pump											
	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3
50-172 S	50	495	421	250	105	200	58	500	526	125	220	550
50-222 S	50	556	416	254	105	200	54	506	532	129	230	606

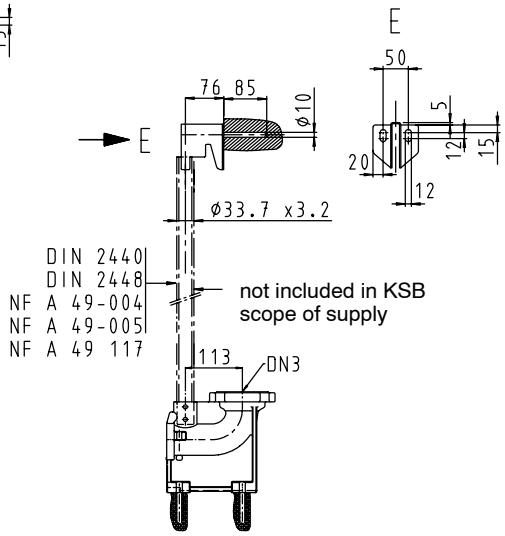
Dimensions Table Amarex N 50, Stationary Installation – Wire, Hoop and Rail Arrangements

DN 3 = DN 50: DIN ISO ANSI = Standard

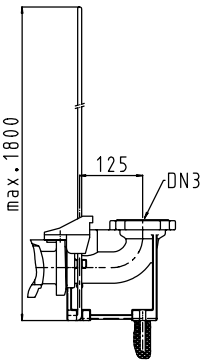
Stationary installation



Stationary installation with guide rail

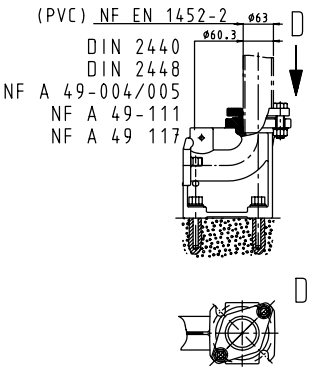


with guide hoop

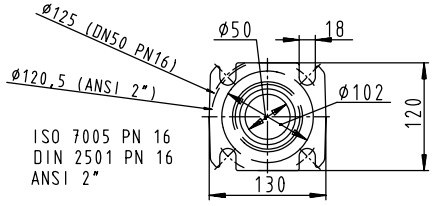


1) Lowest switch-off point for automatic operation
2) Minimum submergence for continuous operation

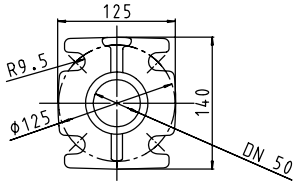
Clamped connection

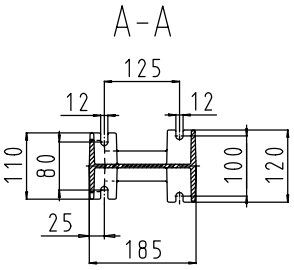


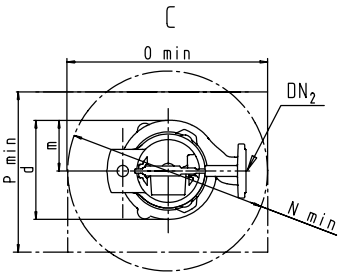
Flange of duckfoot bend DN_3



Pump flange DN_2
ISO 7005 – PN 16
DIN 2501 – PN 16







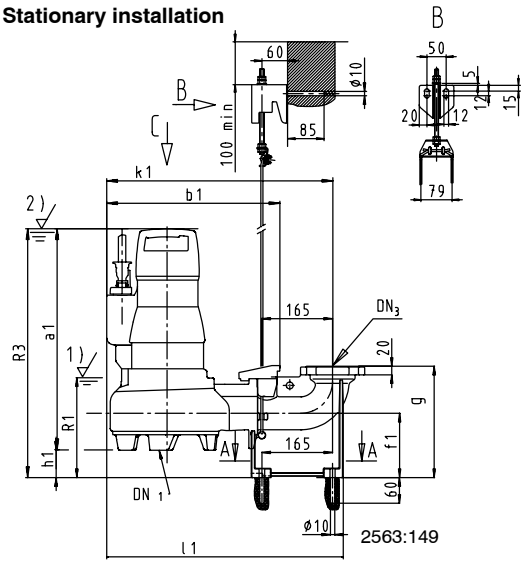
Amarex N	Foundation				
	DN_2	DN_3	N	O	P
50-172 S	50	50	465	465	350
50-170 F	50	50	465	465	350
50-222 S	50	50	465	465	350
50-220 F	50	50	465	465	350

Amarex N	Pump												
	(F) DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3
50-172 S	–	50	470	376	250	105	200	31	472	502	125	161	501
50-170 F	50	50	470	376	250	105	200	31	472	502	125	161	501
50-222 S	–	50	532	389	254	105	200	27	488	514	129	153	559
50-220 F	50	50	532	389	254	105	200	27	488	514	129	153	559

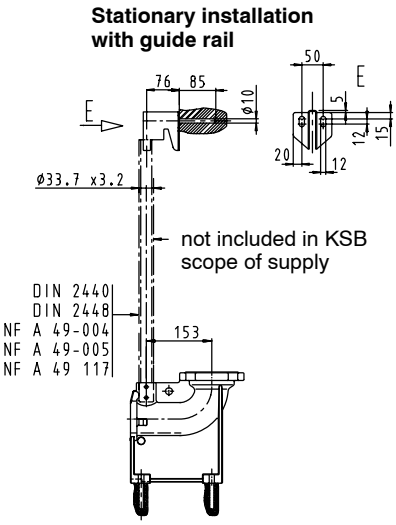
Dimensions Table Amarex N 65, Stationary Installation - Wire, Hoop and Rail Arrangements

DN 3 = 65/65: DIN ISO ANSI = Standard - DN 3 = 65/80: DIN ISO = Standard, ANSI = Variant

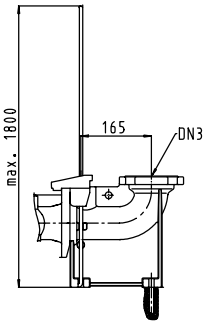
Stationary installation



Stationary installation with guide rail

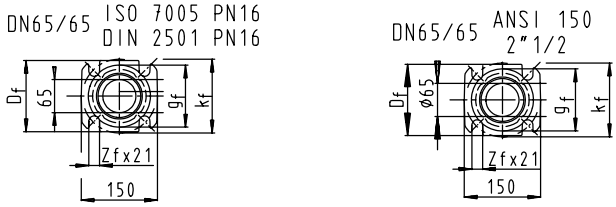


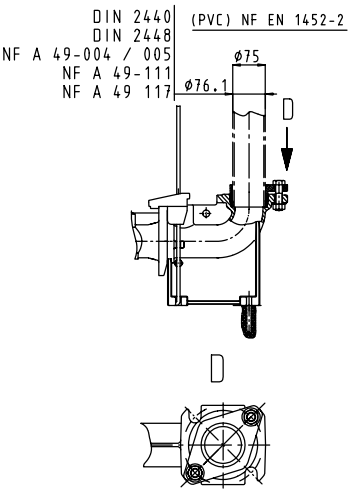
with guide hoop



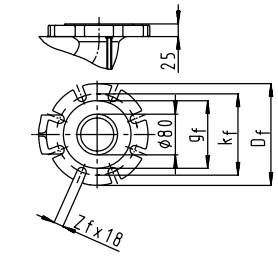
1) Lowest switch-off point for automatic operation
2) Minimum submergence for continuous operation

Flange of duckfoot bend DN_3

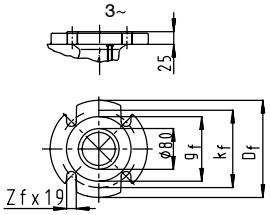


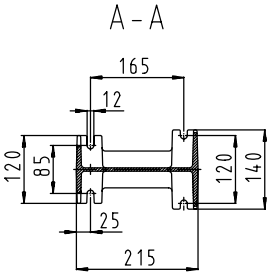


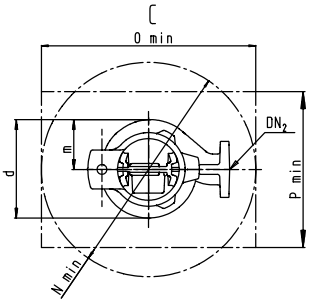
Adapter
DN 65/DN 80
ISO 7005 PN 16 / DIN 2501 PN 16



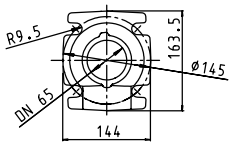
Adapter
DN 65/DN 80, ANSI 150
3~







Pump flange DN_2
ISO 7005 - PN 16
DIN 2501 - PN 16



Flange of duckfoot bend DN_3

	DN_3	g_f	k_f	D_f	Z_f
ISO 7005 PN16 DIN 2501 PN16	65	122	145	140	4
	80	133	160	200	8
	DN_3	g_f	k_f	D_f	Z_f
ANSI 150	65	122	140	140	4
	80	127	152.5	191	4

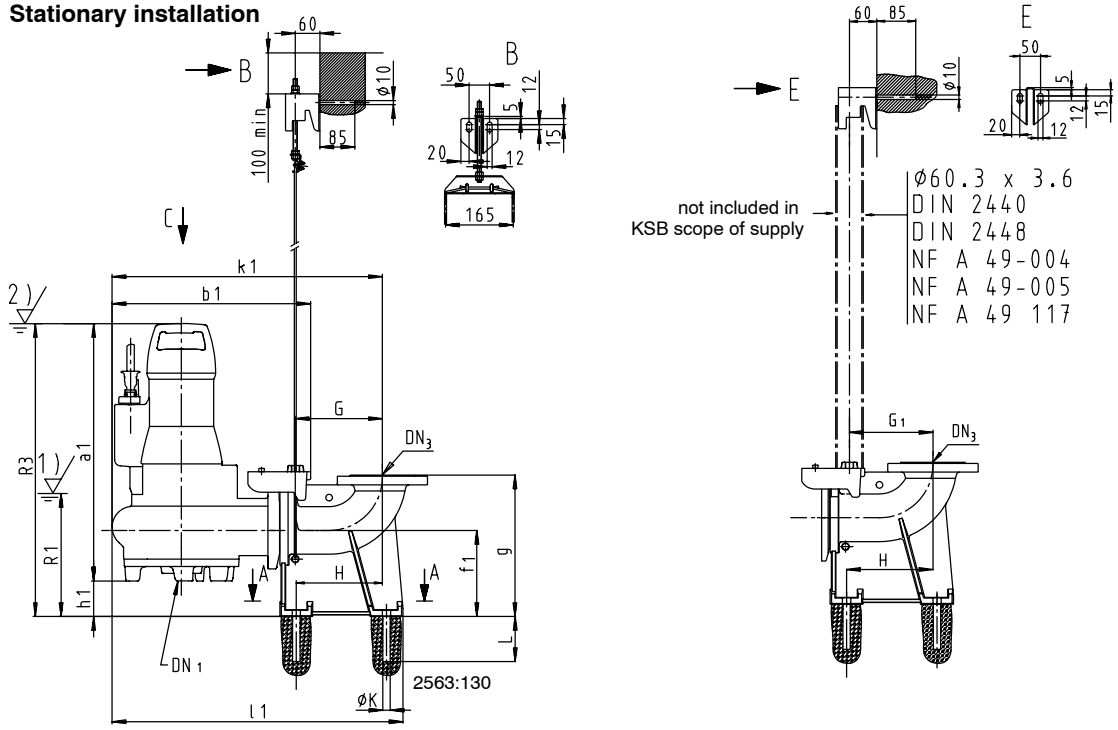
Amarex N	Fondation				
	DN_2	DN_3	N	O	P
65-170 F	65	65	500	500	400
65-220 F	65	65	500	500	400

Amarex N	Pump (F)												
	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3
65-170 F	65	65	578	422	251	150	260	61	558	583	127	234	639
65-220 F	65	65	518	407	265	150	260	63	544	569	142	241	581

Dimensions Table Amarex N 80 and 100, Stationary Installation – Wire and Rail Arrangements

DN 3 = 80/80: DIN ISO = Standard, ANSI = Variant – DN 3 = 80/100 or 100/100: DIN ISO ANSI = Standard

Stationary installation

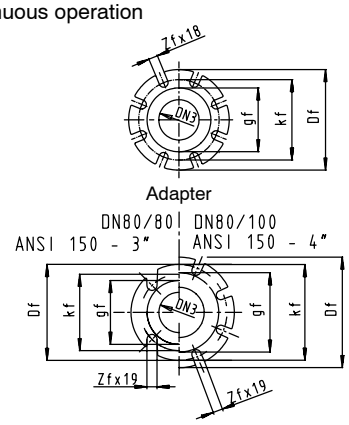


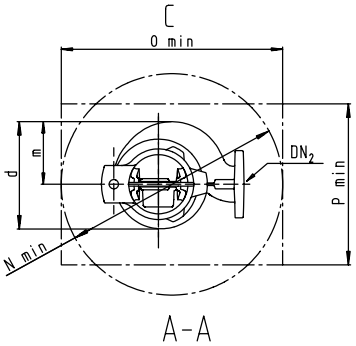
1) Lowest switch-off point for automatic operation

2) Minimum submergence for continuous operation

Flange of duckfoot bend DN_3
ISO 7005 – PN 16
DIN 2501 – PN 16

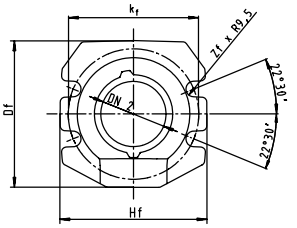
	DN_3	g_f	k_f	D_f	Z_f
ISO 7005 PN16 DIN 2501 PN16	80	132	160	200	8
	100	156	180	220	
ANSI 150	DN_3	g_f	k_f	D_f	Z_f
	80	127	152.5	191	4
	100	156	190.5	220	8

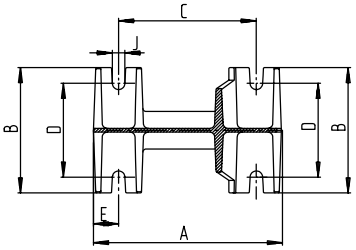




Pump flange DN_2
ISO 7005 – PN 16
DIN 2501 – PN 16

DN_2	H_f	k_f	D_f	Z_f
80	180	160	180	4
100	202	180	205	



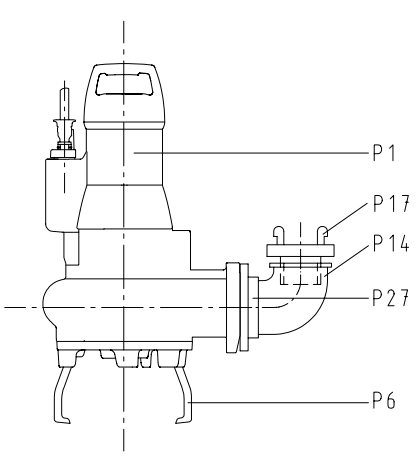


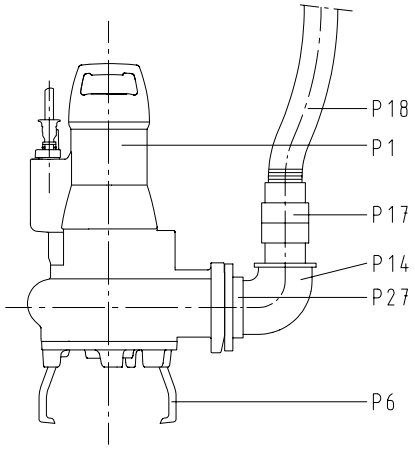
Amarex N	Foundation															
	DN_2	DN_3	A	B	C	D	E	G	G_1	H	J	øK	L	N	O	P
80-220 F/D	80	80	300	200	220	150	40	172,5	163	170	20	18	110	550	550	400
80-220 F/D	80	100	300	200	220	150	40	172,5	163	170	20	18	110	550	550	400
100-220 F/D	100	100	300	200	220	150	40	212,5	203	210	20	18	110	550	550	400

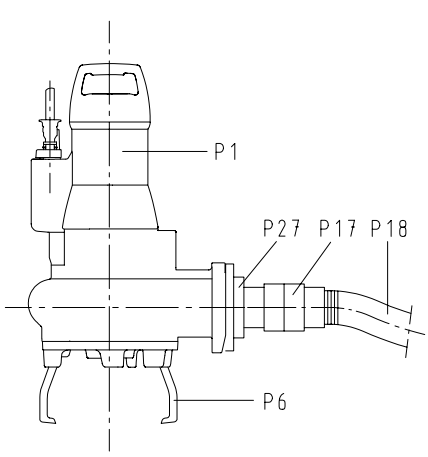
Amarex N	Pump												
	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3
80-220 F	80	80	582	478	322	200	320	103	604	694	176	262	685
80-220 D	–	80	602	478	322	200	320	86	604	694	176	262	688
100-220 F	100	100	603	476	318	210	345	98	641	691	169	280	701
100-220 D	–	100	628	476	318	210	345	76	641	691	169	280	704

Suggested Installation Layouts for Transportable Pump Sets

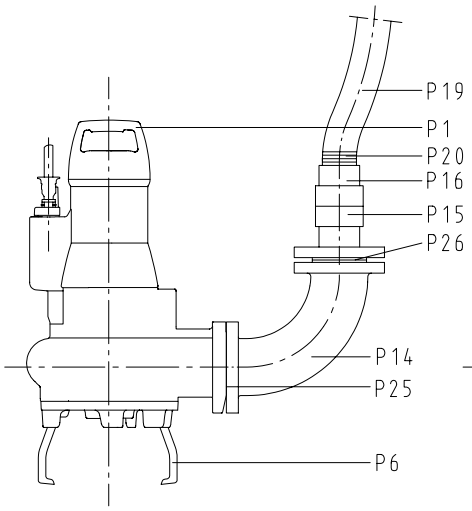
Size 50

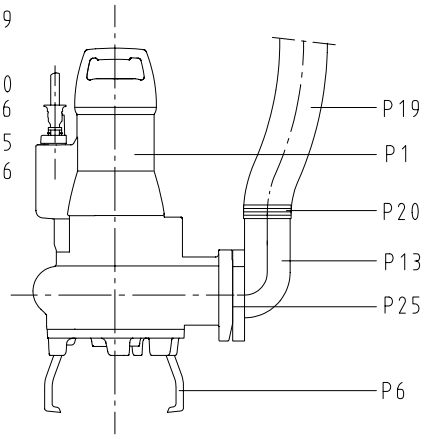


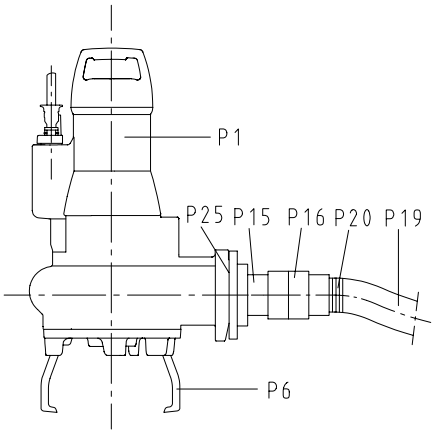




Sizes 65, 80 and 100







Suggestion No. 1
Vertical hose connection
(quick connection)

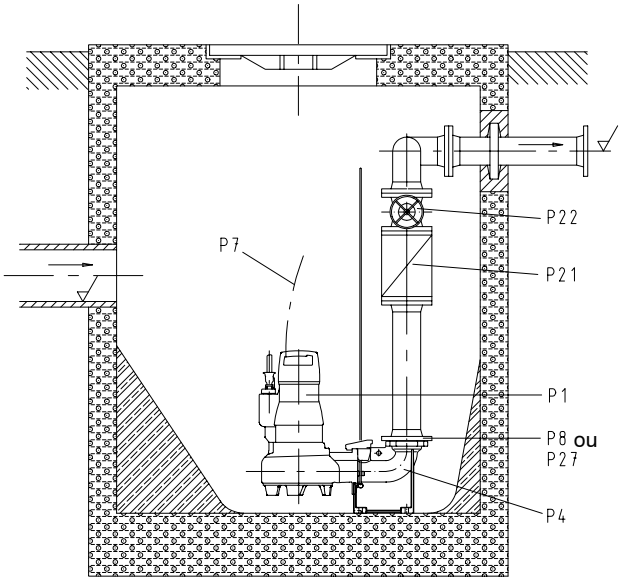
Suggestion No. 2
Vertical hose connection

Suggestion No. 3
Horizontal hose connection
(quick connection)

P1 to P27 see accessories

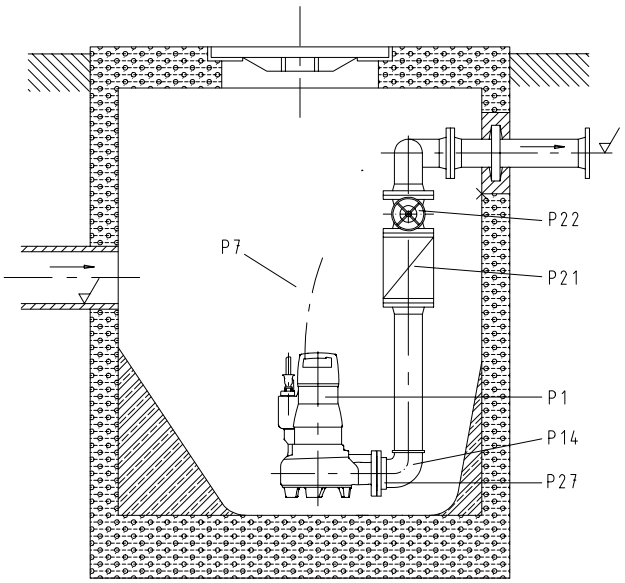
Suggested Installation Layouts for Stationary Pump Sets

Guide hoop arrangement
Amarex N S 50-172/F 50-170, S 50-222/F 50-220, 65-170 / 65-220



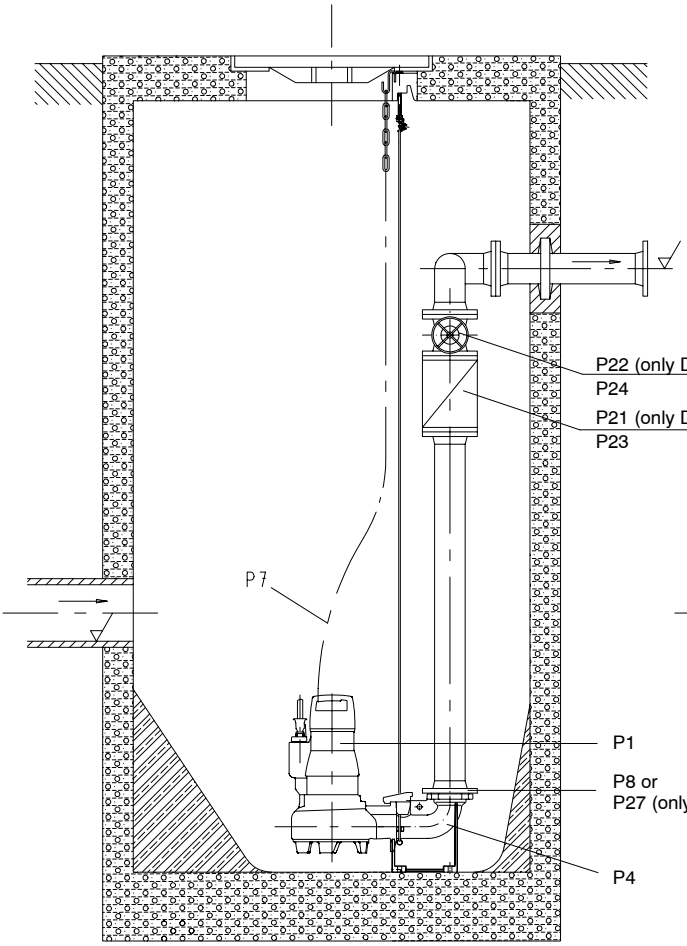
Suggestion No. 1
Single pumping station for 1.5 m installation depth
Duckfoot bend

Suspended arrangement
Amarex N S 50-172/F 50-170, S 50-222/F 50-220



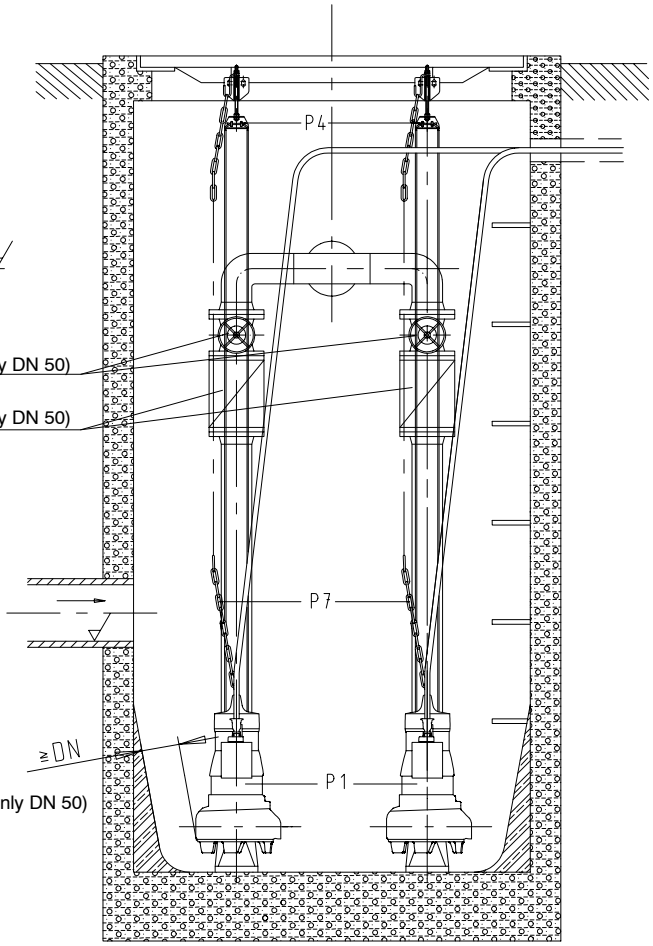
Suggestion No. 2
Direct connection to discharge pipe
Suspended installation

Guide wire arrangement
Amarex N 50, 65, 80 and 100



Suggestion No. 3
Single pumping station for 4.5 m installation depth
Duckfoot bend

Guide wire arrangement
Amarex N 50, 65, 80 and 100

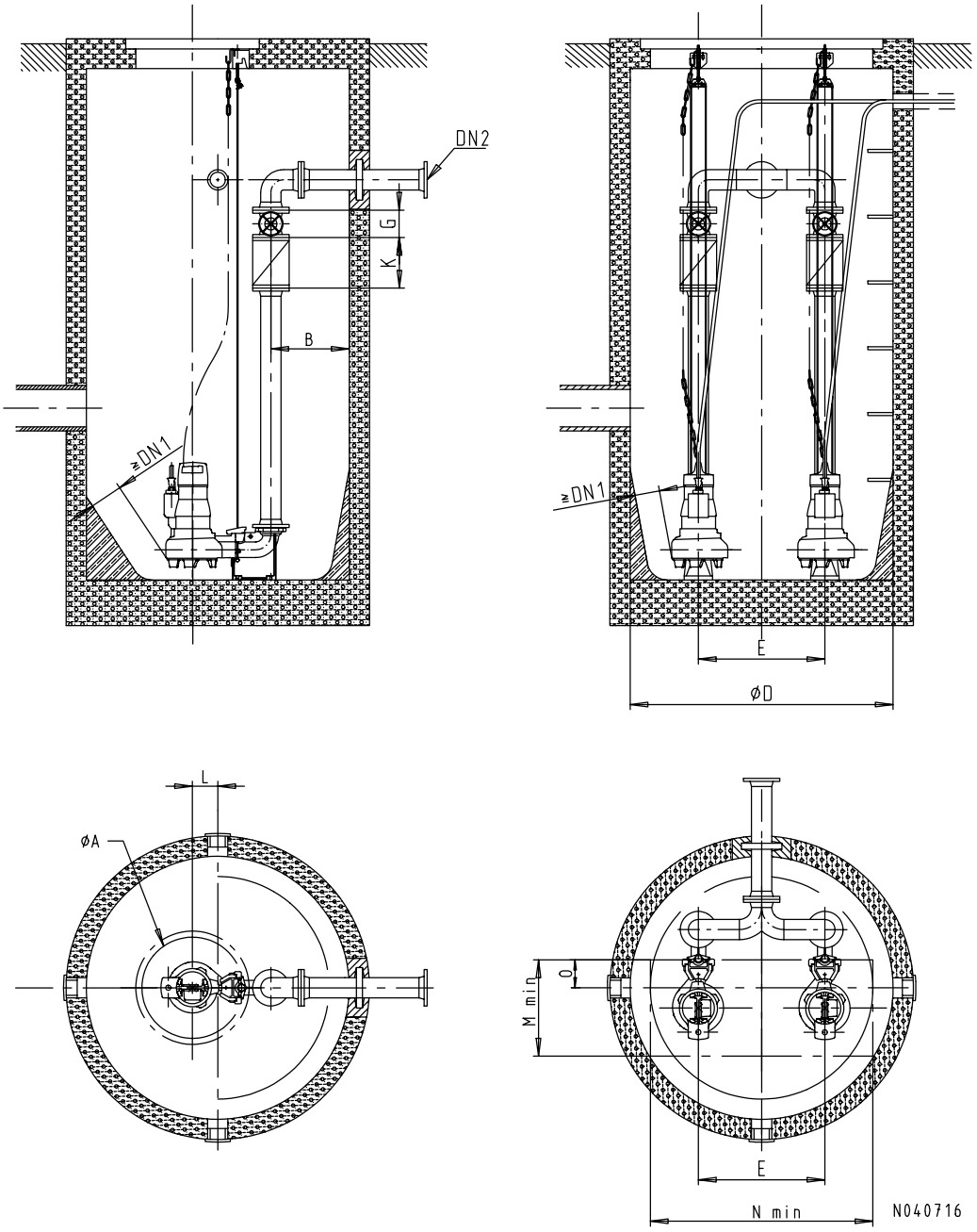


Suggestion No. 4
Double pumping station for 4.5 m installation depth
Duckfoot bend

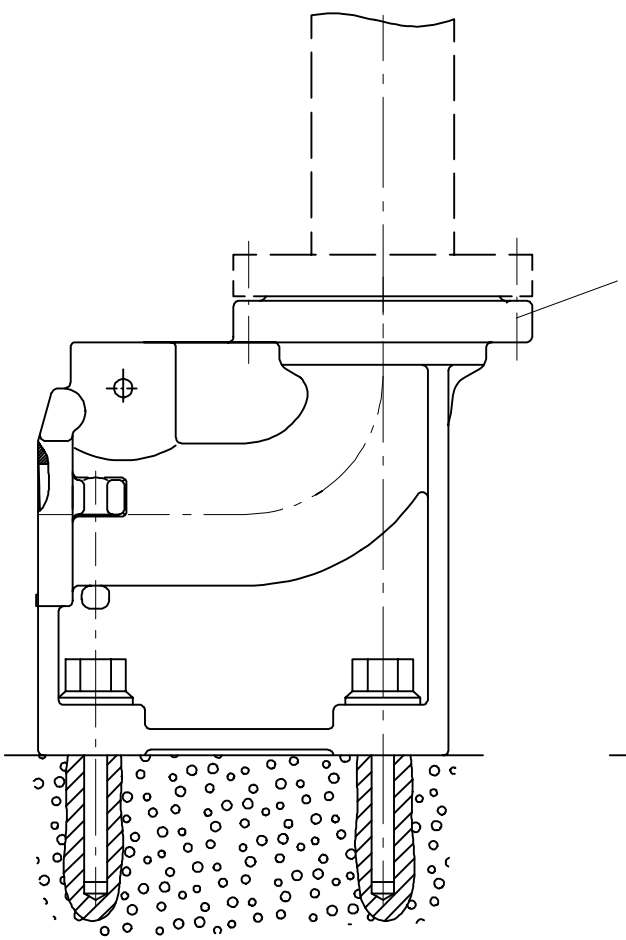
Suggested Installation Layouts for Stationary Amarex N Pump Sets

Amarex N		ø A	B	ø D	E	G	K	L	M	N	O	DN_1 – DN_2
S 50-172/F 50-170	1 pump 2 pumps	625 –	165 235	1000 1000	-- 300	75 75	150 150	42 –	– 550	– 700	– 200	50
S 50-222/F 50-220	1 pump 2 pumps	625 –	165 235	1000 1000	-- 300	75 75	150 150	42 –	– 550	– 700	– 200	50
65-170/220	1 pump 2 pumps	625 –	175 360	1000 1200	-- 600	180 180	260 260	92 –	– 550	– 1000	– 135	65
80-220	1 pump 2 pumps	625 –	200 320	1000 1200	-- 600	180 180	260 260	25 –	– 600	– 1000	– 168	80
100-220	1 pump 2 pumps	625 –	200 320	1000 1200	-- 600	190 190	300 300	65 –	– 600	– 1000	– 128	100

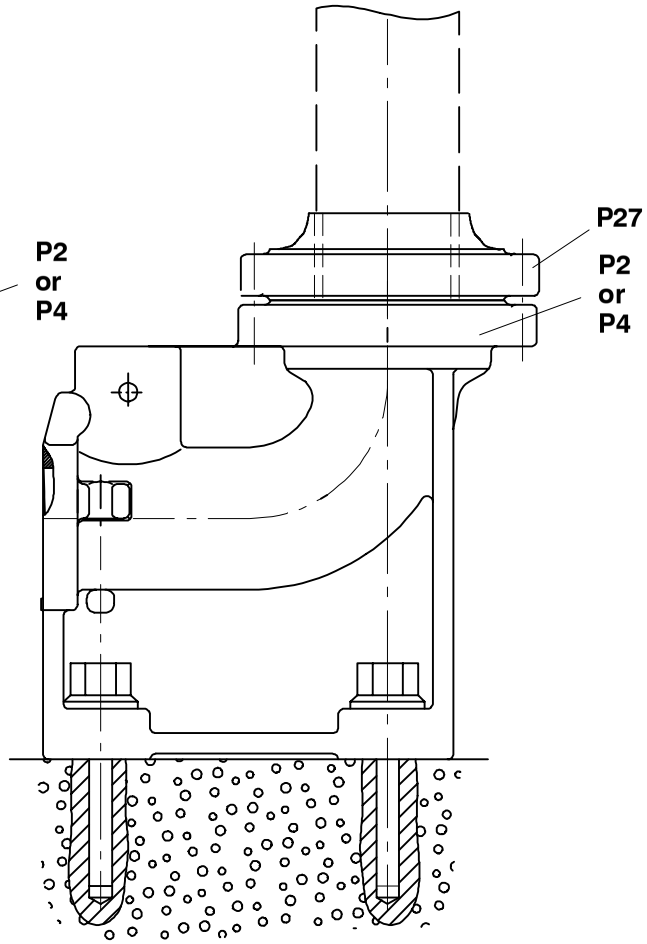
The dimensions given are minimum dimensions in mm.
Pump dimensions see dimensions table.



Discharge Connection Options on the Same Duckfoot Bend for Amarex N DN 50 and DN 65

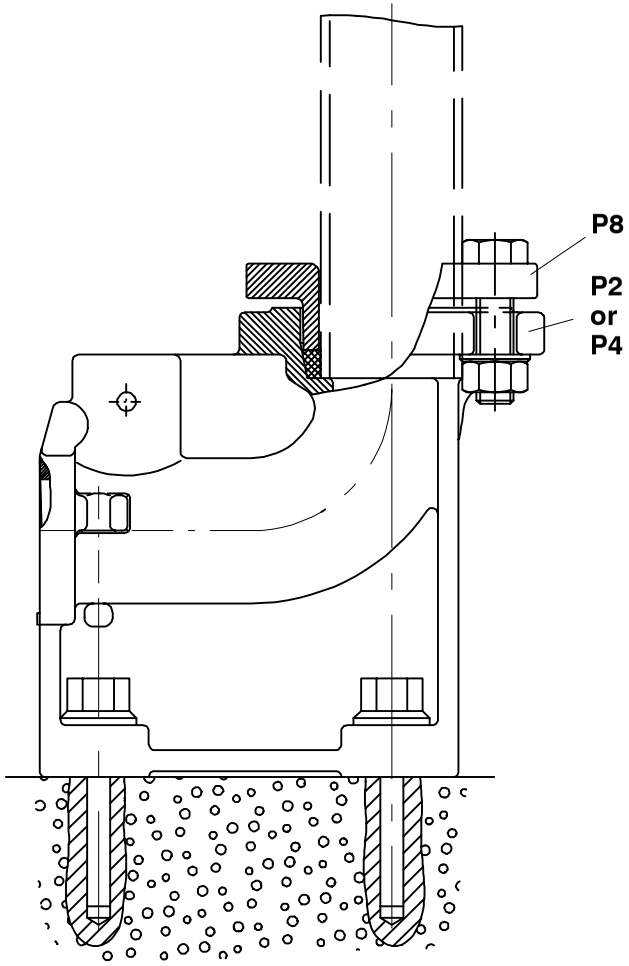


Flanged connection (DN 50/DN65)



2-inch threaded connection in the flange (DN 50)

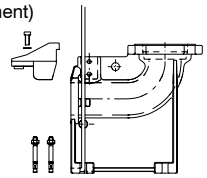
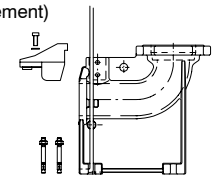
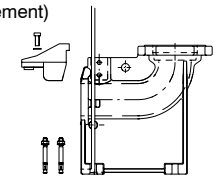
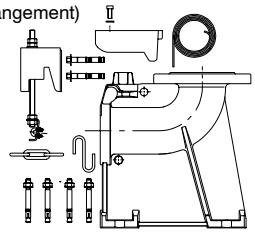
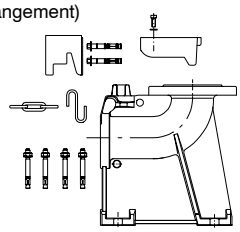
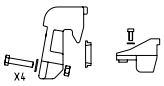
For standard pipes to
DIN 2440 / DIN 2441
with pipe OD **60.3 mm** für DN 50
63 mm - PVC (ISO 3606) for DN 50
76.1 mm - steel for DN 65
75 mm - PVC (ISO 3606) for DN 65
with threaded flange DN 65 - G 2 $^1/_2$



Clamped connection (DN 50 and DN 65)

For standard pipes to
DIN 2440 / DIN 2441 / DIN 2448,
with pipe OD **60.3 mm - steel** for DN 50
63 mm - PVC (ISO 3606) for DN 50
76.1 mm - steel for DN 65
75 mm - PVC (ISO 3606) for DN 65

Installation Kits for Stationary Installation

Item	Illustration	Description	Connection		Ident. No.	Net weight approx. kg/unit
P2+P5+P7 (guide hoop arrangement)		**Installation parts for stationary wet-well installation** consisting of: duckfoot bend DN 50, guide hoop, bolts, anchor bolts, **claw** with stainless steel bolts; **2 m chain** (galvanized steel) **and shackle** 1.4401	DN 50 – DN 3 : DIN ISO ANSI straight claw **Inst. depth**	**1.5 m**	39 022 210	11,0
				1.8 m	39 022 211	12,0
				2.1 m	39 022 212	13,0
			DN 50 – DN 3 : DIN ISO ANSI inclined claw **Inst. depth**	**1.5 m**	39 022 213	16,0
				1.8 m	39 022 214	17,0
				2.1 m	39 022 215	18,0
P2+P5+P7 (guide hoop arrangement)		**Installation parts for stationary wet-well installation** consisting of: duckfoot bend DN 65, guide hoop, bolts, anchor bolts, **claw** with stainless steel bolts; **2 m chain** (galvanized steel) **and shackle** 1.4401	DN 65 – DN 3 : DIN ISO ANSI **Inst. depth**	**1,5 m**	39 020 827	14,5
				1,8 m	39 020 828	15,5
				2,1 m	39 020 829	17,0
P2+P5+P7 (guide hoop arrangement)		**Installation parts for stationary wet-well installation** consisting of: duckfoot bend DN 65/80, guide hoop, bolts, anchor bolts, **claw** with stainless steel bolts; **2 m chain** (galvanized steel) **and shackle** 1.4401	DN 65/80 – DN 3 : DIN ISO **Inst. depth**	**1,5 m**	39 020 848	16,0
				1,8 m	39 020 849	17,0
				2,1 m	39 020 850	18,5
			DN 65/80 – DN 3 : ANSI **Inst. depth**	**1,5 m**	39 022 255	16,0
				1,8 m	39 022 256	17,0
				2,1 m	39 022 257	18,5
P4 + P5 + P7 (guide wire arrangement)		**Installation parts for stationary wet-well installation for 4.5 m installation depth** consisting of: duckfoot bend, suspension bracket, mounting bracket, 10 m guide wire, bolts, anchor bolts, **claw** with stainless steel bolts; **5 m chain** (galvanized steel) **and shackle** 1.4401	DN 3 : DIN ISO ANSI straight claw	**DN 50**	39 022 196	14,5
			DN 3 : DIN ISO ANSI inclined claw	**DN 50**	39 022 200	19,5
			DN 3 : DIN ISO ANSI	**DN 65**	39 020 820	17,6
			DN 3 : DIN ISO	**DN 65/80**	39 020 834	19,1
			DN 3 : ANSI	**DN 65/80**	39 020 838	19,1
			DN 3 : DIN ISO	**DN 80/80**	39 020 988	29,6
			DN 3 : ANSI	**DN 80/80**	39 020 992	29,6
			DN 3 : DIN ISO ANSI	**DN 80/100**	39 021 002	31,5
			DN 3 : DIN ISO ANSI	**DN 100**	39 021 009	32,0
P4 + P5 + P7 (Guide rail arrangement)		**Installation parts for stationary wet-well installation** consisting of: duckfoot bend, mounting bracket, bolts, anchor bolts, **claw** with stainless steel bolts; **5 m chain** (galvanized steel) **and shackle** 1.4401	DN 3 : DIN ISO ANSI straight claw	**DN 50**	39 022 204	14,0
			DN 3 : DIN ISO ANSI inclined claw	**DN 50**	39 022 207	19,0
			DN 3 : DIN ISO ANSI	**DN 65**	39 021 191	17,2
			DN 3 : DIN ISO	**DN 65/80**	39 021 194	19,2
			DN 3 : ANSI	**DN 65/80**	39 021 197	19,2
			DN 3 : DIN ISO	**DN 80/80**	39 021 200	29,6
			DN 3 : ANSI	**DN 80/80**	39 021 203	29,6
			DN 3 : DIN ISO ANSI	**DN 80/100**	39 021 206	31,0
			DN 3 : DIN ISO ANSI	**DN 100**	39 021 209	31,5
P5 Claw Amarex N		**Claw** JL1040 with stainless steel bolts; guide wire, all sizes guide rail, all sizes guide hoop, DN 50 and 65	DN 50 (straight claw)		39 022 248	1,0
			DN 50 (inclined claw)		39 022 252	5,0
			DN 65		39 021 018	2,0
			DN 80 et DN 100		39 021 020	3,1
P5 Claw Amarex		**Claw** JL1040 with stainless steel bolts; guide wire **and** guide rail arrangement	Amarex DN 50 (straight claw)		39 021 016	1,0
			Amarex DN 50 (inclined claw)		19 551 046	5,0
			Amarex DN 65 – 100 see Amarex N DN 65 – 100			
		**Handle** Handle made of stainless steel 1.4306 with A4-70 bolts	Amarex N DN 50		39 022 395	0,65
			Amarex N DN 65 to DN 100		39 018 004	0,65

Off-standard designs on request.

Installation parts for transportable pump sets

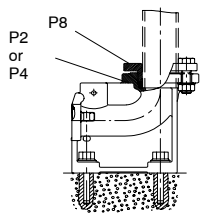
Item Illustration	Description	Connection	Ident. No.	Net weight approx. kg/unit
P6 	**Feet (3)**	Amarex N DN 50, 65, 80, 100	39 022 260	0.5
	(for uneven mounting surfaces only) **Pump foot pad** including bolts (can be used in combination with feet only!)	Amarex N DN 50, 65, 80, 100	39 022 262	0.6

Chain for stationary and transportable pump sets

For Amarex N from DN 50 to 100, the 5 m chain (galvanized steel) is always supplied together with the duckfoot bend.

Item Illustration	Description	Pump sizes	Safe working load kg	Ident. No.	Net weight approx. kg/unit
P7 	**Chain** (galvanized steel), **shackle** 1.4401 **and hook** 1.4571				
	2 m B5 x 35	Amarex N DN 50 and DN 65	160	19 141 819	1.5
		Amarex N DN 50, 65, 80, 100			
	5 m B5 / 6		160	19 141 820	2.7
	10 m B5 / 6		160	19 550 241	4.9
	15 m B5 / 6		160	39 017 477	7.1
	20 m B5 / 6		160	39 017 478	9.3
	Chain, shackle 1.4401 **and hook** 1.4571				
	2 m D5	Amarex N DN 50 and DN 65	160	19 143 335	1.7
		Amarex N DN 50, 65, 80, 100			
	5 m D5		160	19 143 336	2.7
	10 m D5		160	39 017 474	6.0
	15 m D5		160	39 017 475	8.5
	20 m D5		160	39 017 476	11.5
	**Polypropylene lifting rope,** 5 m, **with shackle** 1.4401 **and hook** 1.4571	Amarex N DN 50, 65, 80, 100 ERT DN 65, 80, 150	180	39 021 975	2.5
	Shackle 1.4401 straight type, with stainl. steel bolt		160	01 019 282	0.5

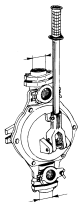
Accessories for stationary and transportable pump sets

Item Illustration	Description	Connection	for pump size 50	65	80	100	Ident. No.	Net weight approx. kg/unit
P8 (Clamped connection) 	**Flange for pipe coupling PN 10** at the flange of the duckfoot bend Mating dimensions to PN 16	DN 50 / R 2 pipe	X				19 551 111	1.0
		DN 65 / R 2 $^1/_2$ pipe		X			39 020 184	1.3
P9 	**Plastic adapter for hose connection** with 1 hose clip Plastic hose, ID 63, item 19	R 2	X				11 191 498	1.0

Accessories for stationary and transportable pump sets

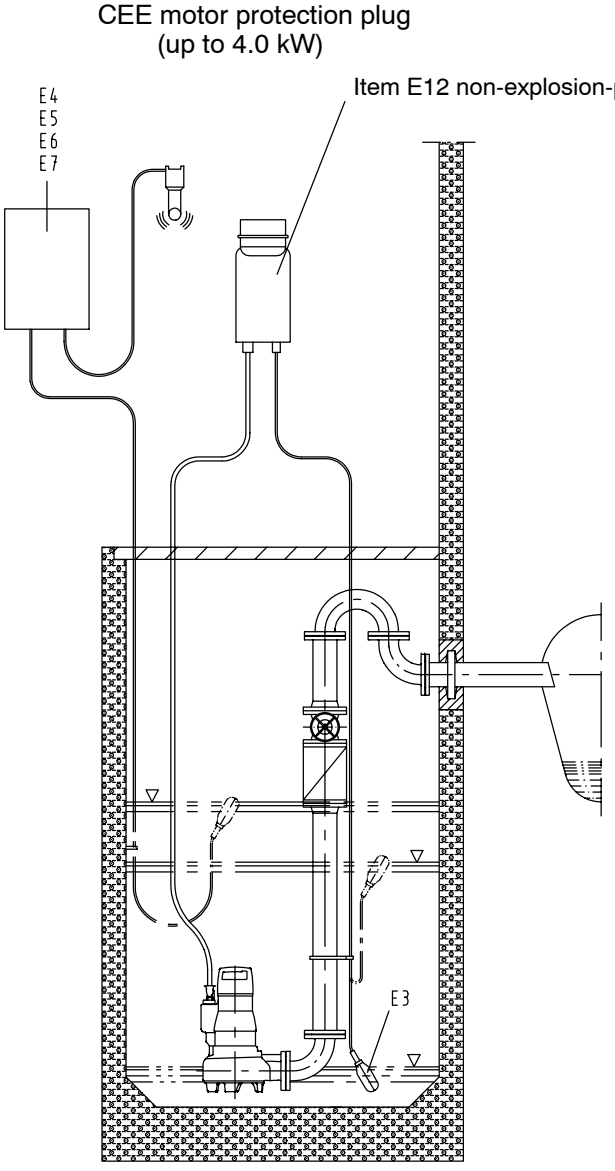
Item Illustration	Description	Connection	for pump size 50	65	80	100	Ident. No.	Net weight approx. kg/unit
P13 	**Connection elbow with flange / hose connection,** cast iron PN 16, DIN 2501, including joint ring and 1 hose clip; for DN 100 with fixing bolts To be used for flange connections, item 25 / item 26 (not for DN 100).	DN 65 / B 75 DN 80 / B 75 DN 100 / A 110		X	X	X	19 135 655 19 131 746 19 139 718	6.0 6.6 10.0
P14 	**Elbow with male/female thread** cast iron, galvanized To be used for flanged connections, item 27	R 2	X				00 241 966	0.3
	**Flanged elbow** PN 16, DIN 2501 Cast iron To be used for flange connections, item 25 / item 26.	DN 65 / 65 DN 65 / 80 DN 80 / 80 DN 100 / 100		X X	X	X	00 265 480 25 198 402 11 150 856 25 145 802	11.0 8.0 10.0 14.4
P15 	**Storz rigid coupling with flange** drilled to DIN 2501, PN 16 Aluminium / steel To be used for flange connections item 25 / item 26.	DN 65 / B 75 DN 80 / B 75 DN 100 / A 110		X	X	X	18 040 148 18 072 642 18 060 162	2.0 3.0 5.0
P16 	**Storz hose coupling** Aluminium 2 hose clips, item 20, are required for hose mounting. (For plastic hose B 75 and A 110, item 19)	DIN 14 321 C 52 DIN 14 322 B 75 DIN 14 323 A 110	X	X	X	X	00 524 551 00 520 454 00 522 313	0.3 0.7 1.5
P17 	**Storz rigid coupling** AL with male thread	C 52 / G 2 A B 75 / G $2^1/_2$ A	X	X			00 524 370 00 524 371	0.2 0.4
P18 	**Plastic hose** DIN 14 811 with integrated C couplings	C 52 5 m C 52 10 m C 52 20 m	X X X				00 522 262 00 522 263 00 522 264	1.8 3.4 6.6
		B 75 5 m B 75 10 m B 75 20 m		X X X	X X X		39 018 686 39 018 687 00 522 265	3.5 5.5 9.5
P19 	**Plastic hose** without coupling (max. 30 m) DIN 14 811	Ø 63 5 m 10 m 20 m 30 m	X X X X				39 018 688 39 018 689 39 018 690 39 019 073	1.7 3.4 6.8 10.2
		B75 5 m 10 m 20 m 30 m		X X X X	X X X X		39 019 064 39 019 065 39 019 066 39 019 071	2.0 4.0 8.0 12.0
		Ø 80 5 m 10 m 20 m 30 m			X X X X		39 018 691 39 019 062 39 019 063 39 019 072	2.2 4.3 8.6 12.9
		A110 5 m 10 m 20 m 30 m				X X X X	39 019 067 39 019 068 39 019 069 39 019 070	4.5 9.3 18.6 27.9
P20 	**Hose clip** DIN 3017 Cr steel *) 2 hose clips required **) For plastic hose Ø63, item 19	B 50 **) B 75 A 110	X	X	X	X	39 000 515 00 109 515 00 520 853*)	0.1 0.1 0.1

Accessories for stationary and transportable pump sets

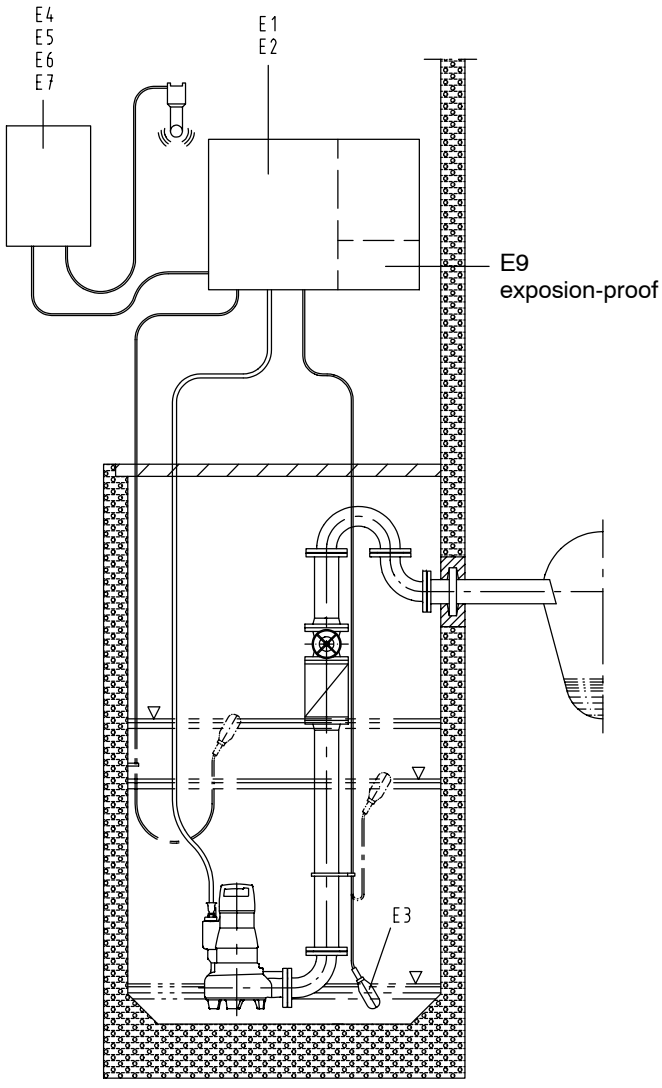
Item Illustration	Description	Connec-tion	for pump size 50	65	80	100	150	Ident. No.	Net weight approx. kg/unit
P21 	**RK swing check valve** Plastic, ISO 7/I with full port and drain plug Not suitable for pumped drainage	Rp 2	X					01 009 773	0.6
P22 	**Socket gate valve** PN 10 – 12 DIN 3352 CuZn	Rp 2 Rp 2 $^1/_2$	X	X				00 411 503 39 000 507	0.8 1.0
P23 	**KSB check valve** with full port and lifting device, cast iron, flange connection to DIN 2501, PN 16 **Check valve to KSB's choice** (not illustrated), cast iron, with full port, lifting device, flanges drilled to DIN 2501, PN 16	DN 65 DN 80 DN 100 DN 150 DN 65 DN 80 DN 100 DN 150		X X 	 X X 	 X X 	 X X	48 829 253 48 829 254 48 829 255 48 829 256 01 056 711 01 056 712 01 056 713 01 056 714	16.0 21.0 29.0 60.0 16.0 21.0 29.0 60.0
P24 	**KSB gate valve,** cast iron, Flanges to DIN 2501, PN 10 **Gate valve to KSB's choice**, (not shown) Flanges drilled to PN 16	DN 65 DN 80 DN 100 DN 150 DN 65 DN 80 DN 100 DN 150		X X 	 X X 	 X X 	 X X	48 816 272 48 816 273 48 816 274 48 816 276 01 056 707 01 056 708 01 056 709 01 056 710	14.5 17.5 22.5 43.0 17.0 19.0 26.0 46.0
P25 	**Set of mounting accessories** for one flange connection, discharge nozzle / item 13, 14 or 15 consisting of: 4 hex. head bolts with nuts and 1 gasket		X	X	X	X		39 021 944 19 551 115 19 551 100 19 551 113	0.8 0.8 0.8 0.8
P26 	**Set of mounting accessories** for one flange connection, consisting of: 8 hex. head bolts with nuts and 1 gasket				X	X	X	19 551 114 19 551 116 18 076 348	0.8 0.8 1.5
P27 	**Screwed flange PN 16** C50 DIN 2566 with bolts, gasket and nuts for flanged elbow	DN 50 / Rp 2 DN 65 / Rp 2 $^1/_2$	X	X				19 551 353 39 021 943	2.0 3.0
	**Hand pump,** wall mounting, cast iron, suction-side connection Rp 1 $^1/_2$		X	X	X	X	X	00 520 485	12.0

Suggested electrical installation layouts

CAUTION! Amarex N **available in explosion-proof and non-explosion-proof design!**



Suggestion No. 1



Suggestion No. 2

Electrical accessories for explosion-proof and non-explosion-proof pumps

Selection table for switchgear

(For further switchgear models for single / duplex pumps and Hyper motor protection switch please refer to type series booklet "Switchgear and Controls").

Non-explosion-proof

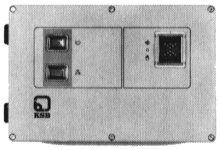
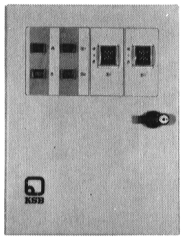
Starting method	Switchgear for: Single pumping station (1 pump)	Switchgear for: Dual pumping station (2 pumps)	Rated current in A from	Rated current in A to
d.o.l.	EDP 25.1	DDP 25.1	1.6	2.5
	EDP 40.1	DDP 40.1	2.5	4.0
	EDP 60.1	DDP 60.1	4.0	6.0
	EDP 100.1	DDP 100.1	6.0	10.0

Explosion-proof

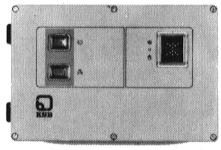
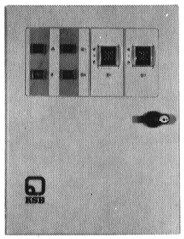
Starting method	Switchgear for: Single pumping station (1 pump)	Switchgear for: Dual pumping station (2 pumps)	Rated current in A from	Rated current in A to
d.o.l.	EDE 25.1	DDE 25.1	1.6	2.5
	EDE 40.1	DDE 40.1	2.5	4.0
	EDE 60.1	DDE 60.1	4.0	6.0
	EDE 100.1	DDE 100.1	6.0	10.0

Warning!
The mini control systems are not explosion-proof and therefore must only be operated outside potentially explosive atmospheres.

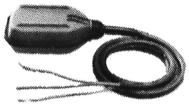
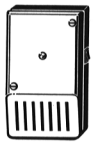
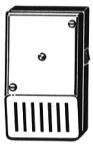
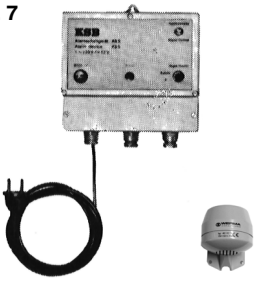
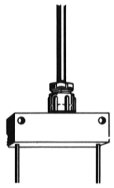
Non-explosion-proof

Item	Illustration	Description	Size		Dimensions (W x H x D)	Ident. No.		Weight kg
E1		**Switchgear for single pumping station** with motor protection switch, manual-0-automatic selector switch and motor contactor (EDP). Indicator lamp and volt-free contacts for operation and fault indication. Terminals for motor temperature switch and float switch. Rated voltage 400 V, 50 Hz Enclosure IP 54	EDP EDP EDP EDP	25.1 40.1 60.1 100.1	240 x 160 x 120 240 x 160 x 120 240 x 160 x 120 240 x 160 x 120	19 070 091 19 070 092 19 070 093 19 070 094	Starting method D.O.L.	2.0
E2		**Switchgear for dual pumping stations** with automatic alternate, stand-by and peak-load operation function, with one motor protection switch each, manual-0-automatic selector switch and motor contactor (DDP), indicator lamps for manual operation, operation pump 1, operation pump 2 and fault indication. Volt-free contacts for operation and fault. Connections for temperature / float switch on terminal strip Rated voltage 400 V, 50 Hz Enclosure IP 54	DDP DDP DDP DDP	25.1 40.1 60.1 100.1	300 x 400 x 150 300 x 400 x 150 300 x 400 x 150 300 x 400 x 150	19 070 147 19 070 148 19 070 149 19 070 150	Starting method D.O.L.	9.3

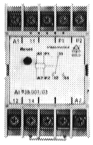
Explosion-proof

Item	Illustration	Description	Size		Dimensions (W x H x D)	Ident. No.		Weight kg
E1		**Switchgear for single pumping station** with motor protection switch, manual-0-automatic selector switch and motor contactor (EDE). Indicator lamp and volt-free contacts for operation and fault indication. Terminals for float switch. Thermal monitoring circuit 2 with keys Rated voltage 400 V, 50 Hz Enclosure IP 54	EDE EDE EDE EDE	25.1 40.1 60.1 100.1	300 x 400 x 150 300 x 400 x 150 300 x 400 x 150 300 x 400 x 150	29 128 010 29 128 015 29 128 020 29 128 025	Starting method D.O.L.	9.3
E2		**Switchgear for dual pumping stations** with automatic alternate, stand-by and peak-load operation function, with one motor protection switch each, manual-0-automatic selector switch and motor contactor (DDE), indicator lamps for manual operation, operation pump 1, operation pump 2 and fault indication. Volt-free contacts for operation and fault. Connections for float switch on terminal strip. Thermal monitoring circuit 2 with keys. Rated voltage 400 V, 50 Hz Enclosure IP 54	DDE DDE DDE DDE	25.1 40.1 60.1 100.1	400 x 600 x 200 400 x 600 x 200 400 x 600 x 200 400 x 600 x 200	29 128 055 29 128 060 29 128 065 29 128 070	Starting method D.O.L.	18

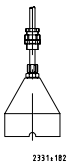
Electrical Accessories

Item	Illustration	Description			Ident. No.	Weight kg
E 3		**Float switch, circuit closed in upper float position** for retrofitting, switch housing made of polypropylene, (max. fluid temperature 70 °C)	Cable (H07RN-F)	3 m 5 m 10 m 15 m 20 m 25 m 30 m	11 037 742 11 037 743 11 037 744 11 037 745 11 037 746 11 037 747 11 037 748	0.5 0.8 1.4 1.8 2.6 2.9 3.4
		For explosion-proof design only in combination with E9.				
E 4		**Alarm switchgear AS 0** with circuit breaker, dependent on mains supply, with piezoceramic signal transmitter, 85 dBA at a distance of 1 m and 4.1 kHz, dimensions 140 x 80 x 57 mm. Use float switch (item E3) or moisture sensor F 1 (item E 8) as contactor.		230V~/ 12V =	29 128 401	0.5
E 5		**Alarm switchgear AS 2,** dependent on mains supply, with piezoceramic signal transmitter, 85 dBA at a distance of 1 m and 4.1 kHz, circuit breaker, green equipment-on lamp, volt-free contact for hook-up to a control station. Plastic housing IP 20, 140 x 80 x 57 mm Use float switch, item E 3, or moisture sensor F 1, item E 8, as contactor.		230V~/ 12V = 1.2 VA	29 128 422	0.5
E 6		**Alarm switchgear AS 4,** mains-independent, with piezoceramic signal transmitter, 85 dBA at a distance of 1 m and 4.1 kHz, with self-charging power supply unit for 5 hours' operation in case of a mains failure, circuit breaker, green equipment-on lamp, volt-free contact for hook-up to a control station. Plastic housing IP 20, 140 x 80 x 57 mm Use float switch, item E 3, or moisture sensor F1, item E 8, as contactor.		230V~/ 12V = 1.2 VA	29 128 442	1.2
E 7		**Alarm switchgear AS 5,** mains-independent, with self-charging power supply unit for 10 hours' operation in case of a mains failure, mains pilot LED, warning indicator light, horn-off push button, volt-free contact for hook-up to a control station, ready for connection with 1.8 m cable and plug. ISO housing IP 41, dimensions 190 x 165 x 75 mm		230V~/ 12V = 5 VA	00 530 561	1.7
		Indoor horn, Enclosure IP 32 Use float switch, item E 3, as contactor	12V = 92 dB(A), 1.2 W		00 534 211	0.25
E 8		**Moisture sensor F 1,** as contactor for alarm switchgear AS 0, AS 2 or AS 4, with 3 m cable. Possible applications for alarm transmission: **High-water alarm by suspending the moisture sensor in a (pump) sump above the pump start-up level.** **Water alarm signal at a water level of only 1 mm (!), by placing the contactor on the floor of rooms subject to a flooding risk, e.g. the cellar or next to the washing machine in the kitchen or bathroom.** 52 x 21 x 20 mm	**CAUTION!** for areas without explosion risk only!		19 072 366	0.9

Electrical Accessories

Item	Illustration	Description		Ident. No.	Weight kg
E 9		**Intrinsically safe relay KF A6– SR2–Ex1.W** (Intrinsic safety-(EEx ia II C X)) for installation in switchgear items E 1 and E 2. Required for item E 3 in explosion-proof environments. Connection in acc. with wiring diagram of switchgear items E 1 or E 2.		01 066 347	0.5
E 10		**Tripping unit** with manual reset for thermal motor monitoring (essential for explosion-proof status if switchgear item E 1 / E 2 is not included in scope of supply) special design for bimetal switch (not suitable for PTC) for mains and frequency inverter operation	**Make RSM ZKÜ/230V/50–60Hz** Control voltage 200–250 V	01 040 217	0.15
E 10.1		**Relay for moisture sensor**		11 303 923	
E 11		**CEE motor protection plug,** DIN 49 462 3L + PE + N, 16 A, 400 V, – 6h with phase inverter, rotary field indication and final cut-out when the motor is overheated (as required by DIN 57 165 for pumps in potentially explosive atmospheres) **CAUTION:** The motor protection plug is not explosion-proof and therefore must only be operated outside potentially explosive atmospheres. (This motor protection plug cannot be used for automatic level control.) For cables with up to 8 cores (max.) only	for rated currents of: 1.8 – 2.6 A 2.6 – 3.7 A 3.7 – 5.5 A 5.4 – 8.0 A 8.0 – 11.5 A	 11 190 765 11 190 764 11 190 763 11 190 762 11 190 761	
E12		**KSB motor protection plug, type Hyper, for non-explosion proof pump** CEE plug 3L + PE + N, 16 A, 400 V, – 6h with phase inverter, motor protection relay, manual-0-automatic selector switch, reset button, indicator lamps for rotary field, operation and fault (e.g. with float switch, item E 3).	for rated currents of: 1.8 – 2.6 A 2.6 – 3.7 A 3.7 – 5.5 A 5.5 – 8.0 A 8.0 – 11.5 A	 19 071 491 19 071 492 19 071 493 19 071 494 19 071 495	

Electrical Accessories

Item	Illustration	Description				Ident. No.	Weight kg
E13		**Switchgear [1]) with bubbler control,** IP 54 for **non-explosion-proof** pumps and for indoor installation					
		Dimensions	EDEL		580 x 260 x 130		
			DDEL up to 250.2		600 x 400 x 200		
		Single pumping station	EDEL 40.3	2.5 -	4.0 A	19 071 718	9.3
			EDEL 60.3	4.0 -	6.3 A	19 071 719	9.3
			EDEL 100.3	6.0 -	10.0 A	19 071 720	9.3
		Dual pumping station	DDEL 40.2	2.5 -	4.0 A	19 071 995	18.0
			DDEL 60.2	4.0 -	6.3 A	19 071 996	18.0
			DDEL 100.2	6.0 -	10.0 A	19 071 997	18.0
		Additional pressure bell set required					
		Switchgear with static pressure control					
		Single pumping station	EDES 40.3-LC			01 057 976	2.0
			EDES 60.3-LC			01 057 977	2.0
			EDES 100.3-LC			01 057 978	2.0
		Additional pressure bell set required					
		Switchgear [1]) with plastic housing for outdoor wall mounting, IP 66					
		Single pumping station	EDEL 40.3 FLS	2.5 -	4.0 A	19 071 843	15.0
			EDEL 60.3 FLS	4.0 -	6.3 A	19 071 844	15.0
			EDEL 100.3 FLS	6.0 -	10.0 A	19 071 845	15.0
		Dual pumping station	DDEL 40.2 FLS	2.5 -	4.0 A	19 071 998	23.0
			DDEL 60.2 FLS	4.0 -	6.3 A	19 071 999	23.0
			DDEL 100.2 FLS	6.0 -	10.0 A	19 072 000	23.0
		Additional pressure bell set required					
		1) Switching point settings, in mm from sump floor On : 400/500 *) Off : 200 Alarm : 500/600 *) *) for DDEL					
		**Pressure bell set** (open system and bubbler control principle) with polyamide hose 8 x 1					
		Hose length 10 m				19 071 721	1.2
		Hose length 20 m				19 071 837	2.0
E13.1		Clamp for mast mounting of switchgear EDEL /DDEL FLS (max. mast diameter 170 mm, to be supplied by operator)				01 055 725	2.2
		Base for EDEL /DDEL FLS switchgear, made of glass-fibre reinforced polyester, RAL 7032, incl. metal frame for setting in concrete.				11 301 318	6.9

Caution! The switchgear assemblies are not explosion-proof and therefore must only be operated outside potentially explosive atmospheres.
The alarm switchgear assemblies are not explosion-proof and therefore must only be operated outside potentially explosive atmospheres.

Options (control cabinet extension may be necessary)

Item	Description	Weight kg
O 1	Operating hours counter	0.1
O 2	Ammeter	0.1
O 3	Voltmeter with changeover switch	0.1
O 4	Master switch	0.2
O 5	Control cabinet heater, for installation in control box, with temperature controller	0.3
O 6	Monitoring relay (phase failure / sequence, under/over-voltage)	0.4
O 7	**Integrated, mains-independent alarm and charging unit PZ033 N** (complete) for hook-up to alarm equipment, e.g. horn or flashlight (I_{max} ca. 150 mA) and charging an accumulator 12 V, 1.2 Ah **with accumulator**, lead/gel accumulator 12 V, 1.2 Ah	1.0
O 7.1	**Alarm equipment for PZ033 N** Flashlight 12 V IP 65 (delivered mounted with EDEL/DDEL FLS) Horn 12 V, approx. 90 dB(A), IP 33 for indoor and outdoor installation, mount in a position where it is protected against direct rain.	 0.2 0.2

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