TSUMEB MUNICIPALITY

Request for Sealed Quotations for Goods

Supply and Delivery of KSB Amarex NF 65-170/042 ULG-152 pump, duck foot, flange, and twin guide rails

Procurement Reference No: G/RFQ/TSBMUN-08/2024/25

BIDDER'S NAME		
CONTACT DETAILS	Contact Person:	
	Tel:	
	E-mail:	
BID AMOUNT	Excl. VAT:	
	Incl. VAT:	

Documents must be submitted in:
The Quotation/Bid Box
Att: Procurement Management Unit (PMU)
Tsumeb Municipality
Erf 264, Moses Garoeb Street
P/Bag 2012, Tsumeb

Closing Date: Tuesday, 04 February 2025 at 11h00
LATE BIDS WILL NOT BE ACCEPTED!

TSUMEB MUNICIPALITY

Tel: +264(0)67221056/7/8
Fax: +264(0)67221464/2210667

Private Bag 2012
Tsumeb
Namibia

Letter of Invitation

Name and Address of Bidder: ____

____

Procurement Reference Number: G/RFQ/TSBMUN-08/2024/25

24 January 2025

Dear Bidder,

Request for Quotations for Supply and Delivery of KSB Amarex NF 65-170/042 ULG-152 pump, duck foot, flange, and twin guide rails

The Tsumeb Municipality invites you to submit your best quote for the items described in detail hereunder.

Any resulting contract shall be subject to the terms and conditions referred to in the document.

Queries, if any, should be addressed to **The Procurement Management Unit (PMU)**, E-mail- procurement@tsumebmun.org.na

Please prepare and submit your quotation in accordance with the instructions given or inform the undersigned if you will not be submitting a quotation.

Yours faithfully,

Mr. Toivo Shipanga
Secretary to the Procurement Committee

TSUMEB MUNICIPALITY
Procurement Management Unit
24 JAN 2025
Private Bag 2012
Tsumeb
Namibia

SECTION I: INSTRUCTIONS TO BIDDERS

1. Rights of Public Entity

The *Tsumeb Municipality* reserves the right:

(a) to split the contract as per the lowest evaluated cost per item, or

(b) to accept or reject any quotation; and

(c) to cancel the quotation process and reject all quotations at any time prior to contract award.

2. Preparation of Quotations

You are requested to quote for the items mentioned in Section III by completing, signing and returning:

(a) the Quotation Letter in Section II with its annex for *Bid Securing Declaration*

(b) the List of Goods and Price Schedule Section III;

(c) the Specifications and Compliance Sheet in Section V; and

(d) any other attachment deemed appropriate.

You are advised to carefully read the complete Request for Sealed Quotations document, including the Special Conditions of Contract in Section VII, before preparing your quotation. The standard forms in this document may be retyped for completion but the Bidder is responsible for their accurate reproduction.

3. Validity of Quotations

The Quotation validity period shall be *90* days from the date of submission deadline.

4. Eligibility Criteria

To be eligible to participate in this Quotation exercise, you should have:

(a) a valid certificate of good standing with the Receiver of Revenue;

(b) a valid certificate of good standing with the Social Security Commission or, in the case where

(c) a company has no employees, a confirmation letter from the Social Security Commission;

(d) as required by the Affirmative Action (Employment) Act 1998 (Act no. 29 of 1998) –

(i) a valid affirmative action compliance certificate issued under section 41 of that Act;

(ii) an exemption issued under section 42 of that Act; or

(iii) a proof from the Employment Equity Commission that the bidder or the supplier is not a relevant employer as defined in that Act

(e) a written undertaking as contemplated in section 138(2) of the Labour Act, 2007 (Act No. 11 of 2007); and

(f) a valid –

(i) certificate of business registration for an entity incorporated or registered under the company or close corporation laws of Namibia;

(ii) certificate of registration of a co-operative registered under the laws regulating co-operatives in Namibia

(iii) document serving as evidence of registration as a trust and the trust deed for a trust registered under laws regulating trusts in Namibia; or

(iv) partnership agreement in the case of a partnership, a valid joint venture agreement in the case of a joint venture or a valid agreement in case of other similar agreements, but a bidder or supplier who is a sole proprietor only needs to comply with the provisions of (a) to (d)

(g) have a certificate indicating SME Status (for Bids reserved for SMEs);

(h) Submit signed Bid-securing Declaration.

Documents are accepted as follows:

(a) A valid original document;

(b) A valid certified copy of an original document, as certified by a Commissioner of Oath appointed in terms of the Justices of the Peace and Commissioners of Oaths Act, 1963 (Act No. 16 of 1963) as amended; or

(c) A printout of a valid electronic or online document issued in terms of the Electronic Transaction Act, 2019 (Act No. 4 of 2019), subject to the authentication or validation of such printout by a public entity during the bid evaluation process, in accordance with the authentication or validation guidelines of the issuing authority.

5. Bid Security/Bid Securing Declaration

Bidders are required to *subscribe to a Bid Securing Declaration* for this procurement process.

6. Delivery

Delivery shall be *2 weeks* after acceptance/issue of Purchase Order. Deviation in delivery period *shall not be accepted.*

6.1. The following tests and inspections will be conducted on the goods at delivery:

- *General tests and inspections will be conducted on the goods at delivery*

7. Sealing and Marking of Quotations

Quotations should be sealed in a single envelope, clearly marked with the Procurement Reference Number, addressed to the Public Entity with the Bidder's name and contact information at the back of the envelope.

8. Submission of Quotations

Quotations should be deposited in the Quotation/Bid Box located at ***Municipal Head Offices, Erf 264, Moses Garoeb Street, Tsumeb***, not later than ***Tuesday, 04 February 2025 at 11h00***. Quotations by post or hand delivered should reach *the same address* by the same date and time at latest. **Late quotations will be rejected.**

Quotations received by e-mail will not be considered.

9. **Opening of Quotations**

Quotations will be opened internally by the Public Entity immediately after the closing time referred to in instruction 8 above. A record of the Quotation Opening stating the name of the bidders, the amount quoted, the presence or absence of a Bid Security/Bid Securing Declaration, will be posted on the website of the Public Entity and available to any bidder on request within three working days of the Opening.

10. **Evaluation of Quotations**

The Public Entity shall have the right to request for clarifications in writing during evaluation. Offers that are substantially responsive shall be compared on the basis of price or ownership cost, subject to Margin of Preference where applicable, to determine the lowest evaluated quotation.

11. **Technical Compliance**

Bidders shall submit along with their quotations documents, catalogues and any other literature to substantiate compliance with the required specifications and to qualify deviations if any with respect to Public Entity's requirements.

The Specifications, Performance Requirements and Compliance Sheet details the minimum specifications of the goods/items to be supplied. The specifications have to be met but no credit will be given for exceeding the specifications.

12. **Prices and Currency of Payment**

Prices shall be fixed in Namibian Dollars.

13. **Margin of Preference**

13.1. The applicable margins of preference and their application methodology are as follows:

- Code of good practice on preferences referred to in sections 71 and 72 of the Public Procurement Act, 2015, *Exclusive Preference for Local Suppliers*

13.2. Bidders applying for the Margin of Preference should submit the below evidence as required:

CATEGORIES OF BIDDERS	MARGIN OF PREFERENCE	DOCUMENT EVIDENCE TO BE SUBMITTED
Manufacturer	2%	✓ Certificate of registration from a registering authority. ✓ Declaration by the bidder that the manufactured goods meet the local content as determined in Annexure 6 as per the cost structure for Valued Added Calculation in Schedule 2, and as certified by an Accountant.
Micro, Small and Medium Enterprise	1%	✓ SME registration certificate ✓ Declaration indicating the percentage of Namibian MSME ownership
Women owned enterprise	1%	✓ IDs of all shareholders ✓ Founding statement/company registration indicating ownership structure/shareholder certificate ✓ declaration indicating the percentage of Namibian female ownership
Youth Owned enterprise	2%	✓ IDs of all shareholders ✓ Founding statement/company registration indicating ownership

		structure/shareholder certificate ✓ declaration indicating the percentage of Namibian youth ownership.
Previously Disadvantaged person owned enterprise	2%	✓ IDs of all shareholders ✓ Founding statement/company registration indicating ownership structure/shareholder certificates ✓ declaration indicting the percentage of Namibian PDPs ownership.
Suppliers providing environmental protection	1%	✓ Declaration and proof that the bidder meets the requirements set out in the bidding document.
Suppliers providing employment to Namibian	1%	✓ declaration that the bidder employs 50% or more Namibian citizens.
TOTAL	10%	

The margin of Preference will be applied as per the formula below:

$A = \frac{MP \times BP}{100}$ in which the formula

a) "'A" represents the amount to be determined:
b) "'MP" represents the total percentage of all margins of preferences granted in respect and
c) "'BP" represents the bid price.

14. Award of Contract

The Bidder having submitted the lowest evaluated responsive quotation and qualified to supply the goods/items and related services shall be selected for award of contract. Award of contract shall be by issue of a Purchase Order/Letter of Acceptance in accordance with terms and conditions contained in Section VI: Contract Agreement and General Conditions of Contract.

15. Notification of Award and Debriefing

The Public Entity shall after award of contract promptly inform all unsuccessful bidders in writing of the name and address of the successful bidder and the contract amount and post a notice of award on its website: www.tsumebmun.org.na within seven (7) days. Furthermore, the Public Entity shall attend to all requests for debriefing made in writing within seven (7) days of the unsuccessful bidders being informed of the award.

SECTION II: QUOTATION LETTER

(to be completed by Bidders)

[Complete this form with all the requested details and submit it as the first page of your quotation with the Price list and documents requested above. A signature and authorisation on this form will confirm that the terms and conditions of the RFQ prevail over any attachments. ***If your quotation is not authorised, it will be rejected.****]*

Quotation addressed to:	**Tsumeb Municipality**
Procurement Reference Number:	**G/RFQ/TSBMUN-08/2024/25**
Subject matter of Procurement:	**Supply and Delivery of KSB Amarex NF 65-170/042 ULG-152 pump, duck foot, flange, and twin guide rails**

We offer to supply the items listed in the attached List of Goods and Price Schedule as per the defined specifications, *except for the qualified deviations [Bidder may delete this phrase in case of no deviation]* and, in accordance with the terms and conditions stated in your Request for Quotations referenced above.

We confirm that we are eligible to participate in this Quotation exercise and meet the eligibility criteria specified in Section 1: Instruction to Bidders.

We undertake to abide ethical conduct during the procurement process and the execution of any resulting contract.

We have read and understood the content of the *Bid Security / Bid Securing Declaration* (BSD) attached hereto and subscribe fully to the terms and conditions contained therein. We further understand that this subscription could lead to *disqualification on the grounds mentioned in the BD.*

The validity period of the Quotation is __________ days *[insert number of days]* from the date of the bid submission deadline.

We confirm that the prices quoted in the List of Goods and Price Schedule are fixed and firm and will not be subject to revision or variation, if we are awarded the contract **prior to the expiry** date of the quotation validity.

The delivery period offered from the date of issue of Purchaser Order/ Letter of Acceptance is as shown in the List of Goods items and Price Schedule.

Quotation Authorised by:

Name of Bidder		Company's Address and seal	
Contact Person			
Name of Person Authorising the Quotation:		Position:	Signature:
Date		Phone No./Fax	

Appendix to Quotation Letter

BID SECURING DECLARATION
(Section 45 of Act)
(Regulation 37(1)(b) and 37(5))

Date: *[Day/month/year]*...

Procurement Ref No.: ....

To: Tsumeb Municipality, Erf 264, Moses Garoeb Street, Tsumeb

I/We* understand that in terms of section 45 of the Act a public entity must include in the bidding document the requirement for a declaration as an alternative form of bid security.

I/We* accept that under section 45 of the Act, I/we* may be suspended or disqualified in the event of

(a) a modification or withdrawal of a bid after the deadline for submission of bids during the period of validity;

(b) refusal by a bidder to accept a correction of an error appearing on the face of a bid;

(c) failure to sign a procurement contract in accordance with the terms and conditions set forth in the bidding document, should I/We* be successful bidder; or

(d) failure to provide security for the performance of the procurement contract if required to do so by the bidding document.

I/We* understand this bid securing declaration ceases to be valid if I am/We are* not the successful Bidder

Signed : ....
[*insert signature of person whose name and capacity are shown*]

Capacity of: ....
[indicate legal capacity of person(s) signing the Bid Securing Declaration]

Name: ....
[insert complete name of person signing the Bid Securing Declaration]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on ____________ day of ___________________, _______
[*insert date of signing]*

Corporate Seal (where appropriate):________________________

[Note*: In case of a joint venture, the bid securing declaration must be in the name of all partners to the joint venture that submits the bid.]

Republic Of Namibia

Ministry of Labour, Industrial Relations and Employment Creation

Witten undertaking in terms of section 138 of the Labour Act, 2015 and section 50(2)(D) of the Public Procurement Act, 2015

1. EMPLOYERS DETAILS

Company Trade Name:..

Registration Number :..

Vat Number: ....

Industry/Sector: ....

Place of Business:..

Physical Address:..

Tell No.:..

Fax No.:..

Email Address:..

Postal Address:..

Full name of Owner/Accounting Officer:..

....

Email Address:..

2. PROCUREMENT DETAILS

Procurement Reference No.:..

Procurement Description: ....

....

....

Anticipated Contract Duration: ....

Location where work will be done, good/services will be delivered: ....

....

3. UNDERTAKING

I .... *[insert full name]*, owner/representative

of ....*[insert full name of company]*

hereby undertake in writing that my company will at all relevant times comply fully with the relevant provisions of the Labour Act and the Terms and Conditions of Collective Agreements as applicable.

I am fully aware that failure to abide to such shall lead to the action as stipulated in section 138 of the labour Act, 2007, which include but not limited to the cancellation of the contract/licence/grant/permit or concession.

Signature: ....

Date: ....

Seal:..

Please take note:

1. *A labour inspector may conduct unannounced inspections to assess the level of compliance*
2. *This undertaking must be displayed at the workplace where it will be readily accessible and visible by the employees rendering service(s) in relations to the goods and services being procured under this contract.*

SECTION III: LIST OF GOODS AND PRICE SCHEDULE

Procurement Ref No. ....

<table>
<tr><td colspan="4">INSTRUCTIONS TO THE PUBLIC ENTITY</td><td colspan="6">INSTRUCTIONS TO BIDDERS</td></tr>
<tr><td colspan="4"></td><td colspan="6"><u>Bidders shall fill-in columns E - I and fill the total</u>
E= mark with a *if an equivalent is quoted
F= Rate per unit G=Total price for one item (C x F)
• If an equivalent is quoted, please attach to your quote appropriate technical information & specification
• Bidders shall fill in and sign the bottom section of this page</td></tr>
<tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td colspan="2">I</td></tr>
<tr><td>Item no.</td><td>Description of Goods</td><td>Quantity required</td><td>Unit of measures</td><td>*</td><td>Price per unit NAD[1]</td><td>Total price without VAT NAD</td><td>VAT: NAD</td><td>Delivery weeks) (days/month</td><td>Country of Origin</td></tr>
<tr><td>1.</td><td>1. KSB Amarex NF 65-170/042 ULG-152 pump
• Voltage: 400V 3~
• Casing: Metal Iron
• Free flow impeller
2. Duck foot where the pump will stand
3. Flange that connects the pump and the duck foot
4. Twin guide rails
(See Attached specifications)</td><td>1</td><td>Each</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="10"></td></tr>
<tr><td colspan="6">Total Excl. VAT</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="6">15% VAT</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="6">Total Incl. VAT</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="2">NAME:</td><td colspan="2">POSITION:</td><td colspan="3">SIGNATURE</td><td colspan="3">DATE</td></tr>
<tr><td colspan="2">NAME OF BIDDER:</td><td colspan="8">ADDRESS:</td></tr>
</table>

1. If the Price quoted is subject to change in the rate of exchange at the time of delivery of goods provide details hereunder:

   Currency: .... Exchange Rate: ....

If no base rate of exchange is given, the price shall be treated as firm in Namibian Dollars for all intent and purpose.

Key notes: **NA**=NOT APPLICABLE, **NQ**=NO QUOTE

SECTION IV: SPECIFICATIONS AND PERFORMANCE REQUIREMENTS

The goods required are technically specified in Section V. Inspections and examinations will be done upon delivery to ascertain if specifications, sizes, and quantities meet the requirements.

SECTION V: SPECIFICATIONS AND COMPLIANCE SHEET

Procurement Reference Number: ______________________

[Bidders should complete columns C and D with the specification of the goods offered. Also state "comply" or "not comply" and give details of any non-compliance/deviation to the specification required. Attach detailed technical literature if required. Authorise the specification offered in the signature block below.]

Item No	Technical Specification Required	Compliance of Specification Offered	Details of Non-Compliance/ Deviation (if applicable)
*A**	*B**	*C*	*D*
1.	1. KSB Amarex NF 65-170/042 ULG-152 pump • Voltage: 400V 3~ • Casing: Metal Iron • Free flow impeller 2. Duck foot where the pump will stand 3. Flange that connects the pump and the duck foot 4. Twin guide rails (See Attached specifications)		

Specifications and Compliance Sheet Authorised by:

Name:		Signature:	
Position:		Date:	
Authorised for and on behalf of:		Company	

SECTION VI: CONTRACT AGREEMENT

Any resulting contract shall be placed by means of a Purchase Order/Letter of Acceptance and shall be subject to the General Conditions of Contract (GCC) for the Procurement of Goods except where modified by the Special Conditions below.

SECTION VIII: SPECIAL CONDITIONS OF CONTRACT

Procurement Reference Number: ______________________________

The clause numbers given in the first column correspond to the relevant clause number of the GCC.

Subject and GCC clause reference	Special Conditions
Purchaser GCC 1.1(h)	The purchaser is: Tsumeb Municipality
Site GCC 1.1(m)	The Site/final destination for delivery of the Goods is: Stores, Tsumeb Municipality
Incoterms Edition GCC 4.2(b)	Incoterms shall be governed by the rules prescribed in Incoterms 2010.
Notices GCC 8.1	Any notice shall be sent to the following addresses: For the *Tsumeb Municipality*, the address and the contact name shall be: ***Mr. Toivo Shipanga*** *e-mail:* *tshipanga@tsumebmun.org.na* For the Supplier, the address and contact name shall be: ______________________________
Disputes GCC 10.2	The rules of procedures for arbitration proceedings pursuant to GCC 10.2 shall be as follows: ______________________________
Delivery and Documents GCC 13.1	The Goods are to be delivered within *2 weeks* from the date of Purchase Order or Letter of Acceptance. The documents to be furnished by the Supplier are: (a) signed delivery note;
Price Adjustment GCC 15.1	The price charge for the Goods supplied and the related Services performed *shall not* be adjustable.
Terms of Payment GCC 16.1	The structure of payments shall be: full payment following delivery of the Supplies and submission of an invoice and the documents listed in clause 13.1

Subject and GCC clause reference	Special Conditions
Terms of Payment GCC 16.3	Payments shall be made not later than thirty days after submission of an invoice and its certification by the Purchaser.
Terms of Payment GCC 16.4 (a)	The price *shall not be* adjustable to the fluctuation in the rate of exchange.
Payment Period GCC 16.5	The method and conditions of payments to be made to the Supplier under *this Contract shall be as follows:* i) **On Acceptance:** The Contract Price of goods received shall be paid no later than thirty (30) days of receipt of the Goods upon submission of an invoice (showing Purchaser's name; the Procurement Reference number, description of payment and total amount, signed in original, stamped or sealed with the company stamp/seal) supported by the Acceptance Certificate issued by the Purchaser. ii) An interest rate of ....% is payable to the supplier by the purchaser for each day payment is delayed until payment has been made in full.
Performance Security GCC 18.1	(i) No performance security is required.
Discharge of Performance Security GCC 18.4	The performance security will be discharged and returned to the supplier not later than *[insert number of days]* following completion date. ***Not Applicable***
Packing GCC 23.2	The packing, marking and documentation within and outside the packages shall be: ________________________________
Insurance GCC 24.1	***Not Applicable***
Transportation GCC 25	The Goods shall be delivered: ***DAP (Delivered at Place): Stores, Tsumeb Municipality***
Inspection and Test GCC 26.1	The inspection and tests shall be: *General Inspection*
Location of Inspection and Tests GCC 26.2	The inspections and tests shall be conducted at: ***Stores, Tsumeb Municipality***
Liquidated Damages GCC 27.1	Liquidated damages for the whole contract are *0.05%* per day. The maximum amount of liquidated damages for the whole contract is *4%* of the final contract price.

Subject and GCC clause reference	Special Conditions
Repair and Replacement GCC 28.5	The period for repair or replacement shall be: 7 days (s)

SCHEDULE 2

COST STRUCTURE FOR VALUE ADDED CALCULATION PER PRODUCT

COST STRUCTURE FOR VALUE ADDED CALCULATION PER PRODUCT		
	N$	N$
Raw Materials, Accessories & Components		
• Imported (CIF)	....	
• Local (VAT & Excise Duty Fee)	....	....
Labour Cost		
• Direct Labour	....	.
• Clerical Wages	....	.
• Salaries to Management	....	....
Utilities		
• Electricity	....	
• Water	....	
• Telephone	....	....
Depreciation	....	
Interest on Loans	....	
Rent	....	....
Other (please specify)		
•	....	
•	....	
•	....	....
TOTAL COST		

$$\text{Local Value Added} = \frac{\text{Total Cost} - \text{Cost of imported inputs}}{\text{Total Cost}} \times 100$$

NB! The cost structure should be certified by a Certified Accountant

SCHEDULE 3

QUOTATION CHECKLIST SCHEDULE

Procurement Reference No.: ______________________________

Description	Attached	Not Attached
Quotation Letter		
List of Goods and Price Schedule		
Specification and Compliance Sheet		
Bid Securing Declaration		
Evidence for Conformity of Goods		
All eligibility requirements as stipulated in the bidding document		

Disclaimer: *The list defined above is meant to assist the Bidder in submitting the relevant documents and shall not be a ground for the bidder to justify its non-submission of major documents for its quotation to be responsive. The onus remains on the Bidder to ascertain that it has submitted all the documents that have been requested and are needed for its submission to be complete and responsive.*

Submersible Motor Pump

Amarex N

50 Hz
DN 50 - DN 100

Type Series Booklet

KSB

Legal information/Copyright

Type Series Booklet Amarex N

Contents

Waste Water

Submersible Motor Pump

Amarex N

Main applications

- Waste water management
- Drainage systems
- Sewage treatment plants
- Sludge disposal
- Drainage of rooms and areas at risk of flooding on municipal, commercial and industrial premises

Fluids handled

- Service water
- Grey water
- Waste water with faeces
- Waste water containing long fibres and solid substances
- Fluids containing gas
- Activated sludge
- Digested sludge
- Raw sludge

Operating data

Operating properties

Characteristic		Value
Flow rate	Q	Up to 190 m^3/h (53 l/s)
Head	H	Up to 49 m
Fluid temperature	t	Up to +40 °C[1]

Characteristic		Value
Motor rating	P_2	0.8 kW to 4.2 kW
Enclosure		IP 68 to EN 60529 / IEC 529

Designation

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

Key to the designation

Code	Description	
Amarex N	Type series	
F	Impeller type	
	F	Free-flow impeller
	S	Cutter
	D	Open, diagonal single-channel impeller
80-220	Size of hydraulic system	
04	Motor size	
4	**Number of motor poles**	
	2	2-pole
	4	4-pole
YL	**Motor version**	
	UL	Without explosion protection, for fluid temperatures of up to 55 °C
	YL[2]	With explosion protection, for fluid temperatures of up to 40 °C
	WL	Without explosion protection, for fluid temperatures of up to 60 °C
G	**Material variant** (⇨ Page 10)	
	G	Pump casing: grey cast iron JL1040 Intermediate casing: grey cast iron JL 1040 Impeller: grey cast iron JL 1040
	G1	Pump casing: grey cast iron JL1040 Intermediate casing: grey cast iron JL 1040 Impeller: Noridur 1.4593 (duplex stainless steel)
	G2	Pump casing: grey cast iron JL1040 Intermediate casing: grey cast iron JL 1040 Impeller: Norihard 0.9635 (white cast iron)
	GH	Pump casing: grey cast iron JL1040 Intermediate casing: Norihard 0.9635 (white cast iron) Impeller: Norihard 0.9635 (white cast iron)
220	Nominal impeller diameter [mm]	

Design details

Design

- Fully floodable submersible motor pump
- Not self-priming
- Close-coupled pump set

Shaft seal

- Two bi-directional mechanical seals in tandem arrangement, with liquid reservoir

Impeller types

- Various, application-based impeller types

1) For short periods (3 to 5 minutes or until the temperature guards trip) UL and WL models can be operated at up to 80 °C.
2) In countries stipulating explosion-proof units for handling sewage with faeces, motor version YL must be used.

D impeller

	Open, diagonal single-vane impeller (impeller type D)	**Suitable for the following fluids:** fluids containing solid substances and long fibres

F impeller

	Free-flow impeller (impeller type F)	**Suitable for the following fluids:** fluids containing solids and stringy material as well as fluids with entrapped air or gas

D and F impellers are suitable for handling the following fluids:

- Activated sludge
- Digested sludge
- Heating sludge
- Mixed water
- Raw waste water
- Raw sludge
- Recirculated sludge

S impeller

	Impeller with cutter (impeller type S)	**Suitable for the following fluids:** faeces, domestic sewage and waste water containing long fibres

S impellers are suitable for handling the following fluids:

- Domestic waste water
- Grey water
- Waste water with faeces

Standard bearings

- Grease-lubricated bearings sealed for life
- Maintenance-free

Reinforced bearings (optional, only for S impeller)

The following hydraulic system/motor combinations can be equipped with reinforced bearings:

Reinforced bearings

Size of hydraulic system	Motor size and number of poles
Amarex N S 50-172 (motor version YL)	002, 012, 022
Amarex N S 50-222 (motor version YL)	032, 042

Pump-end bearings:

- Grease-lubricated bearing sealed for life

Drive

- Three-phase asynchronous squirrel-cage motor

Explosion-proof pump sets comply with Ex dc IIB type of protection.

Materials

Overview of available materials

Component	Material
Casing	JL 1040
Intermediate casing	JL 1040
Impeller	JL 1040[3)]
Cutter (only Amarex N S)	1.2080 (K100)
Shaft	1.4021
Mechanical seal (motor end)	Carbon/Al_2O_3
Mechanical seal (pump end)	SiC/SiC
Screws/bolts	A2
Sealing elements	NBR

Product benefits

- Easy and fast installation/removal with polarised, absolutely watertight cable and KSB plug connection ensuring correct installation
- Motor absolutely watertight, also in the event of damage to the cable sheath, with individually stripped, tinned and resin-sealed conductors
- Highest operating reliability with optimum motor selection for operating mode S1, thermal class F, explosion-proof variant in Ex d IIB T4 Gb
- Long service life with shaft made of corrosion-resistant stainless steel
- Zero maintenance, ideal for continuous duty, with long-life bearings sealed on both sides, grease-packed for life
- Environmentally friendly, non-toxic, food-approved oil
- Significant reduction of energy costs by optimised hydraulic system and high efficiency
- Absolutely reliable and non-clogging design with optimised cutter (S impeller).
- No risk of leakage with close-coupled pump design
- Stationary pump sets easy to install and remove with automatic, bolt-free connection; leakage prevented by elastic sealing elements
- Ease of service with wetted bolts made of stainless steel, which are easy to undo even after years of operation
- Two bi-directional mechanical seals with oil reservoir filled with ecologically acceptable oil provide double safety
- Well suited for mechanical seal with covered spring for abrasive and aggressive fluids
- Only one set of spare parts for all pump sizes thanks to modular system

Certifications

Label	Effective in:	Note
CE	Europe	Suitable for plants to Standard EN 12050-1
LGA Type-tested and monitored guaranteed with tested quality	Europe	Amarex N DN 50 - DN 100 BMW (test report) Nos.: 0420266-01 to 05

3) Amarex N F 50/65/80/100 in material variant G1 = 1.4593 (Noridur), G2 = 0.9635 (Norihard)

Product overview / selection tables

Table of fluids handled

The table below for your guidance is based on KSB's long-standing experience. The data are standard values and are not to be considered as generally binding recommendations. More detailed advice is available from our specialist department. Make use of our laboratory's wealth of experience when selecting materials.

Selection aid for materials and hydraulic systems per fluid

Fluid handled[4)]	Recommended material	Recommended impeller type[5)]	Comments, further recommendations
Grey water	JL 1040	F, D, S	Free passage > any solids contained, possibly pre-screened
River water	JL 1040	F, D	Free passage > any solids contained, possibly pre-screened
Contaminated surface water	JL 1040	F, D	Free passage > any solids contained, possibly pre-screened
Waste water			
▪ Untreated municipal waste water	JL 1040	F, D, S	ATV[6)] recommends a free passage of 100 mm; min. free passage: 76 mm
▪ Waste water containing air or gas	JL 1040	F	Up to 8 %, contact KSB for handling fluids with high outgassing rates
▪ Raw waste water	JL 1040	F, D	ATV[6)] recommends a free passage of 100 mm; min. free passage: 76 mm
▪ Mixed water	JL 1040	F	Free passage > any solids contained, possibly pre-screened
▪ Waste water or grey water containing long fibres	JL 1040	F, D, S	Free passage > any solids contained, possibly pre-screened
▪ Highly abrasive waste water causing wear (chemically neutral)	Norihard	F	For solids contents < 5 g/l material variants G2, GH
▪ Corrosive waste water	Noridur	F	Material variant G1 if required according to analysis of the fluid handled
Sludge			
▪ Raw sludge	JL 1040	D, F	Pumpable up to a dry substance content of: 13 % (D), 8 % (F)
▪ Digested sludge	JL 1040	D, F	Pumpable up to a dry substance content of: 13 % (D), 8 % (F)
▪ Activated sludge	JL 1040	D, F	Pumpable up to a dry substance content of: 13 % (D), 8 % (F)
Industrial waste water containing ...			
▪ Paint suspensions	JL 1040	F	Solvent-free, observe the operator's instructions!
▪ Lacquer/paint/varnish suspensions	JL 1040	F	Solvent-free, contact KSB for silicone-free version
▪ Fibres/pulp	JL 1040	F, D, S	
▪ Chips/swarf	Norihard	F	Material variant G2 or GH, special mechanical seal; solids content < 5 g/l
▪ Abrasive substances[7)]	Norihard	F	Material variant G2 or GH, special mechanical seal; solids content < 5 g/l
Mildly acidic industrial waste water	JL 1040	F	pH value ≥ 6.5: G1 variant and FPM (Viton) O-rings
Non-corrosive waste water			
▪ Ammonium hydroxide	JL 1040	F	
▪ Ammonium hydroxide 5 % NH_4OH	JL 1040	F	
▪ Urea 25 % $(NH_2)_2$-CO	JL 1040	F	
▪ Potassium hydroxide 10 % KOH	JL 1040	F	
▪ Calcium hydroxide 5 % $Ca(OH)_2$	JL 1040	F	
▪ Sodium hydroxide 5 % NaOH	JL 1040	F	
▪ Sodium carbonate 30 % Na_2CO_3	JL 1040	F	

4) For any fluids which are not listed in this table contact KSB.
5) The first impeller type listed should be given preference.
6) ATV = German regulatory body for waste water management
7) Severe hydroabrasive wear occurs if solids contents of approx. 0.5 g/l or higher are combined with circumferential speeds exceeding 20 m/s or low-flow conditions to the left of the duty point.

Fluid handled[4]	Recommended material	Recommended impeller type[5]	Comments, further recommendations
Non-corrosive waste water containing ...			
▪ Aliphatic hydrocarbons, e.g. oils, petrol, butane, methane	JL 1040	F	FPM (Viton) O-rings, TEHSITE cable, for high concentrations contact KSB.
▪ Aromatic hydrocarbons, e.g. benzene, styrene	JL 1040	F	FPM (Viton) O-rings, TEHSITE cable, for high concentrations contact KSB.
▪ Chlorinated hydrocarbons (e.g. tetrachloroethylene, ethylene chloride, chloroform, methylene chloride)	JL 1040	F	FPM (Viton) O-rings, TEHSITE cable, for high concentrations contact KSB.
Highly abrasive industrial waste water causing wear (chemically neutral)[8]			
▪ Lime water	Norihard	F	For sinter contents < 5 g/l, material variant GH
▪ Lime milk containing quartz and pigment suspension	Norihard	F	Lime milk of up to 15 %, material variant GH
▪ Water/sand mixture	Norihard	F	Up to 5 g/l solids content, material variant GH

4) For any fluids which are not listed in this table contact KSB.
5) The first impeller type listed should be given preference.
8) The material variants required highly depend on the operating hours, rotational speed and flow velocity.

Overview of product features

Standard designs

Size	S impeller	D impeller	F impeller
	Amarex N S 50-...	Amarex N D 80-... Amarex N D 100-...	Amarex N F 50-... Amarex N F 65-... Amarex N F 80-... Amarex N F 100-...
Material variant	G	G	G
Number of motor poles			
2-pole	50-172/... 50-222/...	-	50-170/... 50-220/... 65-170/...
4-pole	-	80-220/... 100-220/...	65-220/... 80-220/... 100-200/...
Explosion protection			
Motor version UL	Non-explosionproof		
Motor version YL[9]	⟨Ex⟩ Ex d IIB T4 Gb		
Motor version WL	Non-explosionproof		
Motor			
Starting method	DOL[10]		
Voltage	400 V		
Cooling	Cooled by surrounding fluid		
Mode of operation	S1: submerged (max. 25 m) (see [2] in outline drawing) S3: outside the fluid (see [1] in outline drawing)		
Power cable			
Type	Rubber-sheathed cable (H07RN8-F 7G1.5^2)		
Length	10 m		
Cable entry	Absolutely watertight		
Sealing elements			
Shaft seal	Mechanical seal		
Elastomer seals	NBR		
Monitoring equipment			
Winding temperature version YL	Temperature monitoring circuit (with automatic reset and start-up): bimetal switch directly connected with the control circuit of the motor contactor Limiting circuit (temperature limit for explosion protection without automatic reset): bimetal switch connected via a tripping unit with manual reset		
Winding temperature version UL, WL	Temperature monitoring circuit (with automatic reset and start-up): bimetal switch directly connected with the control circuit of the motor		
Coating	Environmentally-friendly KSB top coat (two-component epoxy paint), colour RAL 5002, film thickness = 80 µm		
Installation (⇨ Page 37)			
Stationary, with guide hoop	Installation depths 1.5 m/1.8 m/2.1 m		
Stationary, with single guide rail	Installation depth 4.5 m		
Stationary, with twin guide rail	Installation depth 4.5 m		
Stationary, with guide wire	Installation depth 4.5 m		
Transportable	Installation depth 4.5 m		
Maximum temperature of fluid handled			
Motor version UL	55 °C		
Motor version YL	40 °C		
Motor version WL	60 °C		

9) In countries stipulating explosion-proof units for handling sewage with faeces, motor version YL must be used.

10) Maximum switching frequency: 30 starts per hour

Standard variants

Size	S impeller	D impeller	F impeller		
	Amarex N S 50-172/... Amarex N S 50-222/...	Amarex N D 80-220/... Amarex N D 100-220/...	Amarex N F 50-... Amarex N F 65-... Amarex N F 80-... Amarex N F 100-...		
Material variants	G	G	G1	G2	GH
Number of motor poles					
2-pole	-	-	50-170/... 50-220/... 65-170/...		
4-pole	-	-	65-220/... 80-220/... 100-200/...		
Shaft material					
Material 1.4462 + C45 N	✗	✗	✗		
Motor					
Voltage	230 V, 415 V, 500 V, 690 V				
Monitoring equipment					
Leakage sensor in the motor space[11]	✗	✗	✗		
Suction flange					
Drilled to DIN/ISO PN16 or ASME 150 lb	-	-	✗		
Sealing elements					
Elastomers: O-rings and flange gaskets made of Viton, lower mechanical seal with Viton gaskets	✗	✗	✗		
Shaft seal: special mechanical seal (mechanical seal with covered spring HJ977)[12]	✗	✗	✗		
Power cables					
Standard rubber-sheathed cable (H07RN8-F 7G1.5^2); for versions ULG, YLG, WLG[13]	✗	✗	✗		
Standard rubber-sheathed cable (H07RN8-F 8x1.5^2) for pump with leakage sensor[13]	✗	✗	✗		
TEHSITE power cable (8G1.5) for pump with or without leakage sensor, for versions ULG, YLG, WLG[14]	✗	✗	✗		
Shielded rubber-sheathed cable (S07RC4N8-F-8G1.5) for pump with or without leakage sensor, for versions ULG, YLG, WLG operated with a frequency inverter[14]	✗	✗	✗		
Coating	Environmentally-friendly KSB standard coating (two-component epoxy paint), colour RAL 5002, film thickness = 300 µm				
Installation (⇨ Page 37)					
Stationary, with guide hoop	Installation depths 1.5 m/1.8 m/2.1 m				
Stationary, with single guide rail	Installation depth 6.0 m				
Stationary, with twin guide rail	Installation depth 6.0 m				
Stationary, with guide wire	Installation depth 9.5 m				
Transportable	Installation depth 4.5 m				

11) 8-core connection cable required
12) Silicon carbide/silicon carbide seal faces, Viton sealing elements, stainless steel spring and metal part, Viton (FPM) O-rings and flange gaskets
13) Total lengths available 15 m/20 m/30 m/40 m/50 m
14) Total lengths available 10 m/15 m/20 m/30 m/40 m/50 m

Material variants

Overview of material variants for standard models

Component		S impeller	D impeller	F impeller
		Amarex N S 50-172/... Amarex N S 50-222/...	Amarex N D 80-220/... Amarex N D 100-220/...	Amarex N F 50-... Amarex N F 65-... Amarex N F 80-... Amarex N F 100-...
		G	G	G
Casing		JL 1040	JL 1040	JL 1040
Intermediate casing		JL 1040	JL 1040	JL 1040
Impeller		JL 1040	JL 1040	JL 1040
Cutter		1.2080.02 (K100)	-	-
Shaft		1.4021	1.4021	1.4021
Mechanical seal	Drive end	Carbon/Al_2O_3	Carbon/Al_2O_3	Carbon/Al_2O_3
	Pump end	SiC/SiC	SiC/SiC	SiC/SiC
Screws/bolts		A2	A2	A2
Elastomer seals		NBR	NBR	NBR

Overview of material variants for standard models

Component		S impeller	D impeller	F impeller		
		Amarex N S 50-172/... Amarex N S 50-222/...	Amarex N D 80-220/... Amarex N D 100-220/...	Amarex N F 50-... Amarex N F 65-... Amarex N F 80-... Amarex N F 100-...		
		G	G	G1	G2	GH
Casing		-	-	JL 1040	JL 1040	JL 1040
Intermediate casing		-	-	JL 1040	JL 1040	0.9635[16)]
Impeller		-	-	1.4593[15)]	0.9635[16)]	0.9635[16)]
Cutter		-	-	-	-	-
Shaft		-	-	1.4021	1.4021	1.4021
Mechanical seal	Drive end	-	-	Carbon/Al_2O_3	Carbon/Al_2O_3	Carbon/Al_2O_3
	Pump end	-	-	SiC/SiC	SiC/SiC	SiC/SiC
Screws/bolts		-	-	A2	A2	A2
Elastomer seals		-	-	NBR[17)]	NBR[17)]	NBR[17)]

15) Noridur (= duplex stainless steel)
16) Norihard (= white cast iron)
17) Optional: FPM

Technical data

Impeller diameter	Size	Motor version	P_1	P_2	I_N	I_A	Fluid temperature	[kg]	Mat. No.
			[kW]	[kW]	[A]	[A]	[°C]		
120	S 50-172/002 LG-120	ULG	1,75	1,30	3,56	20	55	47	39100017
	S 50-172/002 LG-120	YLG	1,75	1,30	3,56	20	40	47	39100018
	S 50-172/002 LG-120	WLG	1,75	1,30	3,56	20	60	47	
140	S 50-172/002 LG-140	ULG	1,75	1,30	3,56	20	55	47	39100019
	S 50-172/002 LG-140	YLG	1,75	1,30	3,56	20	40	47	39100020
	S 50-172/002 LG-140	WLG	1,75	1,30	3,56	20	60	47	
160	S 50-172/012 LG-160	ULG	2,60	1,90	4,50	20	55	47	39100021
	S 50-172/012 LG-160	YLG	2,60	1,90	4,50	20	40	47	39100022
	S 50-172/002 LG-160	WLG	2,60	1,90	4,50	20	60	47	
175	S 50-222/032 LG-175	ULG	4,00	3,10	7,00	50	55	58	39100041
	S 50-222/032 LG-175	YLG	4,00	3,10	7,00	50	40	58	39100042
	S 50-222/032 LG-175	WLG	4,00	3,10	7,00	50	55	58	
190	S 50-222/042 LG-190	ULG	5,30	4,20	8,80	50	55	58	39100043
	S 50-222/042 LG-190	YLG	5,30	4,20	8,80	50	40	58	39100044
	S 50-222/042 LG-190	WLG	5,30	4,20	8,80	50	55	58	
90	F 50-170/002 LG-90	ULG	1,75	1,30	3,56	20	55	41	39100045
	F 50-170/002 LG-90	YLG	1,75	1,30	3,56	20	40	41	39100046
	F 50-170/002 LG-90	WLG	1,75	1,30	3,56	20	60	41	
107	F 50-170/002 LG-107	ULG	1,75	1,30	3,56	20	55	41	39100047
	F 50-170/002 LG-107	YLG	1,75	1,30	3,56	20	40	41	39100048
	F 50-170/002 LG-107	WLG	1,75	1,30	3,56	20	60	41	
120	F 50-170/012 LG-120	ULG	2,60	1,90	4,50	20	55	42	39100049
	F 50-170/012 LG-120	YLG	2,60	1,90	4,50	20	40	42	39100050
	F 50-170/012 LG-120	WLG	2,60	1,90	4,50	20	60	42	
130	F 50-170/022 LG-130	ULG	3,06	2,30	5,10	20	55	42	39100051
	F 50-170/022 LG-130	YLG	3,06	2,30	5,10	20	40	42	39100052
	F 50-170/022 LG-130	WLG	3,06	2,30	5,10	20	60	43	
140	F 50-170/022 LG-140	ULG	3,06	2,30	5,10	20	55	43	39100053
	F 50-170/022 LG-140	YLG	3,06	2,30	5,10	20	40	43	39100054
	F 50-170/022 LG-140	WLG	3,06	2,30	5,10	20	60	43	
130	F 50-220/032 LG-130	ULG	4,00	3,10	7,00	50	55	52	39100067
	F 50-220/032 LG-130	YLG	4,00	3,10	7,00	50	40	52	39100068
	F 50-220/032 LG-130	WLG	4,00	3,10	7,00	50	60	52	
140	F 50-220/032 LG-140	ULG	4,00	3,10	7,00	50	55	52	39100069
	F 50-220/032 LG-140	YLG	4,00	3,10	7,00	50	40	52	39100070
	F 50-220/032 LG-140	WLG	4,00	3,10	7,00	50	60	52	
150	F 50-220/042 LG-150	ULG	5,30	4,20	8,80	50	55	53	39100071
	F 50-220/042 LG-150	YLG	5,30	4,20	8,80	50	40	53	39100072
	F 50-220/042 LG-150	WLG	5,30	4,20	8,80	50	60	53	
160	F 50-220/042 LG-160	ULG	5,30	4,20	8,80	50	55	53	39100073
	F 50-220/042 LG-160	YLG	5,30	4,20	8,80	50	40	53	39100074
	F 50-220/042 LG-160	WLG	5,30	4,20	8,80	50	60	53	
170	F 50-220/042 LG-170	ULG	5,30	4,20	8,80	50	55	54	39100075
	F 50-220/042 LG-170	YLG	5,30	4,20	8,80	50	40	54	39100076
	F 50-220/042 LG-170	WLG	5,30	4,20	8,80	50	60	53	
180	F 50-220/042 LG-180	ULG	5,30	4,20	8,80	50	55	54	39100077
	F 50-220/042 LG-180	YLG	5,30	4,20	8,80	50	40	54	39100078
	F 50-220/042 LG-180	WLG	5,30	4,20	8,80	50	60	53	
120	F 65-170/032 LG-120	ULG	4,00	3,10	7,00	50	55	58	39100085
	F 65-170/032 LG-120	YLG	4,00	3,10	7,00	50	40	58	39100086
	F 65-170/032 LG-120	WLG	4,00	3,10	7,00	50	60	58	
128	F 65-170/032 LG-128	ULG	4,00	3,10	7,00	50	55	58	39100087
	F 65-170/032 LG-128	YLG	4,00	3,10	7,00	50	40	58	39100088
	F 65-170/032 LG-128	WLG	4,00	3,10	7,00	50	60	58	
136	F 65-170/032 LG-136	ULG	4,00	3,10	7,00	50	55	59	39100089
	F 65-170/032 LG-136	YLG	4,00	3,10	7,00	50	40	59	39100090
	F 65-170/032 LG-136	WLG	4,00	3,10	7,00	50	60	58	
146	F 65-170/042 LG-146	ULG	5,30	4,20	8,80	50	55	59	39100091

Impeller diameter	Size	Motor version	P_1	P_2	I_N	I_A	Fluid temperature	[kg]	Mat. No.
			[kW]	[kW]	[A]	[A]	[°C]		
	F 65-170/042 LG-146	YLG	5,30	4,20	8,80	50	40	59	39100092
	F 65-170/042 LG-146	WLG	5,30	4,20	8,80	50	60	59	
152	F 65-170/042 LG-152	ULG	5,30	4,20	8,80	50	55	60	39100093
	F 65-170/042 LG-152	YLG	5,30	4,20	8,80	50	40	60	39100094
	F 65-170/042 LG-152	WLG	5,30	4,20	8,80	50	60	59	
158	F 65-170/042 LG-158	ULG	5,30	4,20	8,80	50	55	60	39100095
	F 65-170/042 LG-158	YLG	5,30	4,20	8,80	50	40	60	39100096
	F 65-170/042 LG-158	WLG	5,30	4,20	8,80	50	60	59	
112	F 65-220/004 LG-112	ULG	1,23	0,80	2,75	17,4	55	49	39100097
	F 65-220/004 LG-112	YLG	1,23	0,80	2,75	17,4	40	49	39100098
	F 65-220/004 LG-112	WLG	1,23	0,80	2,75	17,4	60	49	
125	F 65-220/004 LG-125	ULG	1,23	0,80	2,75	17,4	55	49	39100099
	F 65-220/004 LG-125	YLG	1,23	0,80	2,75	17,4	40	49	39100100
	F 65-220/004 LG-125	WLG	1,23	0,80	2,75	17,4	60	49	
135	F 65-220/004 LG-135	ULG	1,23	0,80	2,75	17,4	55	49	39100101
	F 65-220/004 LG-135	YLG	1,23	0,80	2,75	17,4	40	49	39100102
	F 65-220/004 LG-135	WLG	1,23	0,80	2,75	17,4	60	49	
145	F 65-220/004 LG-145	ULG	1,23	0,80	2,75	17,4	55	49	39100103
	F 65-220/004 LG-145	YLG	1,23	0,80	2,75	17,4	40	49	39100104
	F 65-220/004 LG-145	WLG	1,23	0,80	2,75	17,4	60	49	
155	F 65-220/004 LG-155	ULG	1,23	0,80	2,75	17,4	55	49	39100105
	F 65-220/004 LG-155	YLG	1,23	0,80	2,75	17,4	40	49	39100106
	F 65-220/004 LG-155	WLG	1,23	0,80	2,75	17,4	60	49	
165	F 65-220/014 LG-165	ULG	1,94	1,30	3,54	17,4	55	50	39100107
	F 65-220/014 LG-165	YLG	1,94	1,30	3,54	17,4	40	50	39100108
	F 65-220/014 LG-165	WLG	1,94	1,30	3,54	17,4	60	50	
175	F 65-220/014 LG-175	ULG	1,94	1,30	3,54	17,4	55	50	39100109
	F 65-220/014 LG-175	YLG	1,94	1,30	3,54	17,4	40	50	39100110
	F 65-220/014 LG-175	WLG	1,94	1,30	3,54	17,4	60	50	
185	F 65-220/024 LG-185	ULG	2,56	1,80	4,25	17,4	55	51	39100111
	F 65-220/024 LG-185	YLG	2,56	1,80	4,25	17,4	40	51	39100112
	F 65-220/024 LG-185	WLG	2,56	1,80	4,25	17,4	60	51	
195	F 65-220/024 LG-195	ULG	2,56	1,80	4,25	17,4	55	51	39100113
	F 65-220/024 LG-195	YLG	2,56	1,80	4,25	17,4	40	51	39100114
	F 65-220/024 LG-195	WLG	2,56	1,80	4,25	17,4	60	51	
120	F 80-220/034 LG-120	ULG	2,60	1,90	5,87	37,5	55	63	39100123
	F 80-220/034 LG-120	YLG	2,60	1,90	5,87	37,5	40	63	39100124
	F 80-220/034 LG-120	WLG	2,60	1,90	5,87	37,5	60	63	
135	F 80-220/034 LG-135	ULG	2,60	1,90	5,87	37,5	55	63	39100137
	F 80-220/034 LG-135	YLG	2,60	1,90	5,87	37,5	40	63	39100138
	F 80-220/034 LG-135	WLG	2,60	1,90	5,87	37,5	60	63	
150	F 80-220/034 LG-150	ULG	2,60	1,90	5,87	37,5	55	63	39100139
	F 80-220/034 LG-150	YLG	2,60	1,90	5,87	37,5	40	63	39100140
	F 80-220/034 LG-150	WLG	2,60	1,90	5,87	37,5	60	63	
165	F 80-220/034 LG-165	ULG	3,50	2,60	6,50	37,5	55	63	39100129
	F 80-220/034 LG-165	YLG	3,50	2,60	6,50	37,5	40	63	39100130
	F 80-220/034 LG-165	WLG	3,50	2,60	6,50	37,5	60	64	
180	F 80-220/044 LG-180	ULG	5,13	3,70	8,40	37,5	55	65	39100131
	F 80-220/044 LG-180	YLG	5,13	3,70	8,40	37,5	40	65	39100132
	F 80-220/044 LG-180	WLG	5,13	3,70	8,40	37,5	60	66	
195	F 80-220/044 LG-195	ULG	5,13	3,70	8,40	37,5	55	65	39100133
	F 80-220/044 LG-195	YLG	5,13	3,70	8,40	37,5	40	65	39100134
	F 80-220/044 LG-195	WLG	5,13	3,70	8,40	37,5	60	66	
210	F 80-220/044 LG-210	ULG	5,13	3,70	8,40	37,5	55	65	39100135
	F 80-220/044 LG-210	YLG	5,13	3,70	8,40	37,5	40	65	39100136
	F 80-220/044 LG-210	WLG	5,13	3,70	8,40	37,5	60	66	
120	F 100-220/034 LG-120	ULG	2,60	1,90	5,87	37,5	55	64	39100145
	F 100-220/034 LG-120	YLG	2,60	1,90	5,87	37,5	40	64	39100146
	F 100-220/034 LG-120	WLG	2,60	1,90	5,87	37,5	60	64	

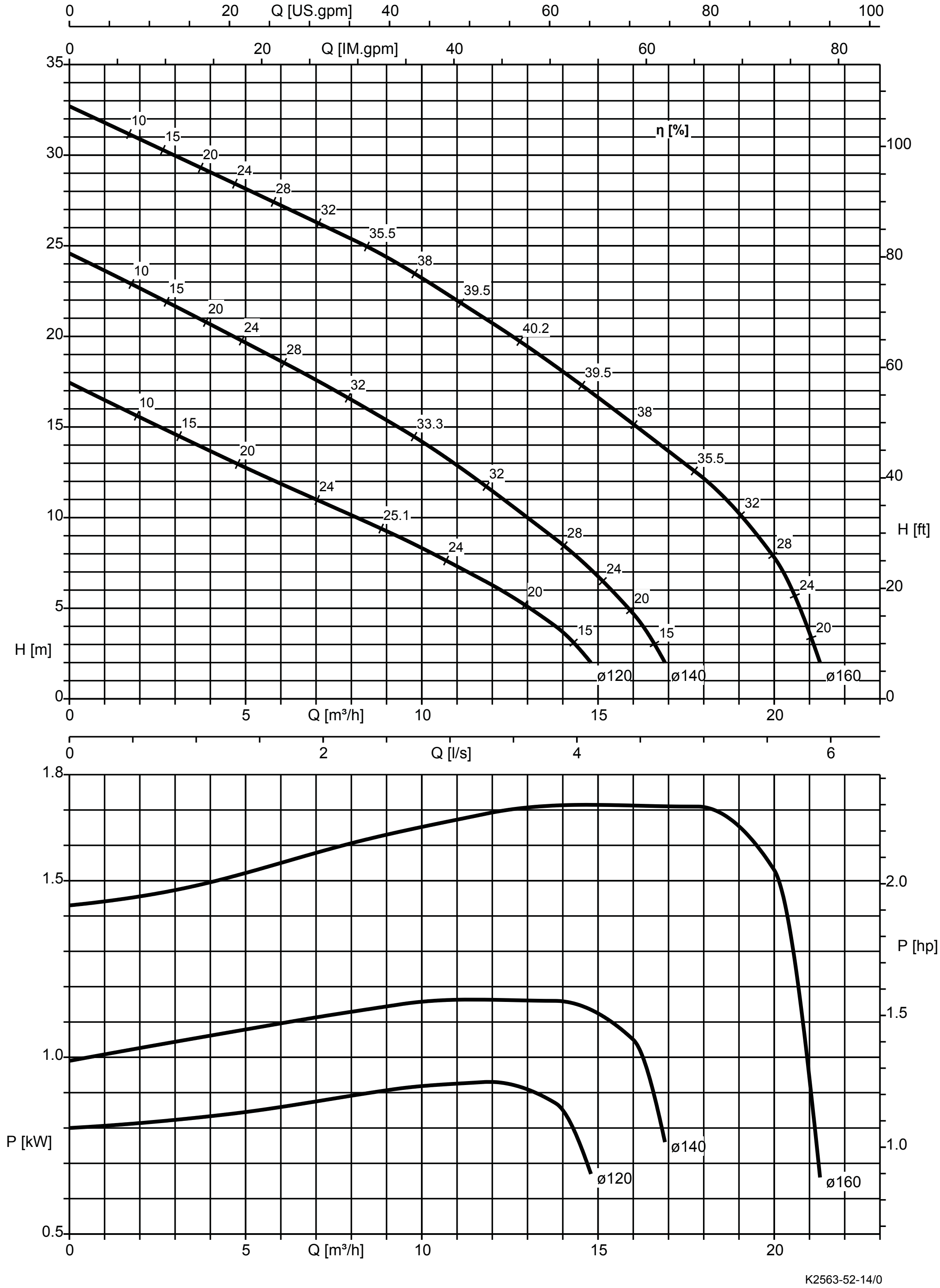
Impeller diameter	Size	Motor version	P_1	P_2	I_N	I_A	Fluid temperature	[kg]	Mat. No.
			[kW]	[kW]	[A]	[A]	[°C]		
135	F 100-220/034 LG-135	ULG	2,60	1,90	5,87	37,5	55	64	39100159
	F 100-220/034 LG-135	YLG	2,60	1,90	5,87	37,5	40	64	39100160
	F 100-220/034 LG-135	WLG	2,60	1,90	5,87	37,5	60	64	
150	F 100-220/034 LG-150	ULG	3,50	2,60	6,50	37,5	55	64	39100149
	F 100-220/034 LG-150	YLG	3,50	2,60	6,50	37,5	40	64	39100150
	F 100-220/034 LG-150	WLG	3,50	2,60	6,50	37,5	60	64	
165	F 100-220/044 LG-165	ULG	5,13	3,70	8,40	37,5	55	65	39100151
	F 100-220/044 LG-165	YLG	5,13	3,70	8,40	37,5	40	65	39100152
	F 100-220/044 LG-165	WLG	5,13	3,70	8,40	37,5	60	67	
180	F 100-220/044 LG-180	ULG	5,13	3,70	8,40	37,5	55	66	39100153
	F 100-220/044 LG-180	YLG	5,13	3,70	8,40	37,5	40	66	39100154
	F 100-220/044 LG-180	WLG	5,13	3,70	8,40	37,5	60	67	
195	F 100-220/044 LG-195	ULG	5,13	3,70	8,40	37,5	55	67	39100155
	F 100-220/044 LG-195	YLG	5,13	3,70	8,40	37,5	40	67	39100156
	F 100-220/044 LG-195	WLG	5,13	3,70	8,40	37,5	60	67	
210	F 100-220/044 LG-210	ULG	5,13	3,70	8,40	37,5	55	67	39100157
	F 100-220/044 LG-210	YLG	5,13	3,70	8,40	37,5	40	67	39100158
	F 100-220/044 LG-210	WLG	5,13	3,70	8,40	37,5	60	67	
154	D 80-220/034 LG-154	ULG	2,60	1,90	5,87	37,5	55	74	39100345
	D 80-220/034 LG-154	YLG	2,60	1,90	5,87	37,5	40	74	39100346
	D 80-220/034 LG-154	WLG	2,60	1,90	5,87	37,5	60	75	
168	D 80-220/034 LG-168	ULG	2,60	1,90	5,87	37,5	55	74	39100347
	D 80-220/034 LG-168	YLG	2,60	1,90	5,87	37,5	40	74	39100348
	D 80-220/034 LG-168	WLG	2,60	1,90	5,87	37,5	60	75	
180	D 80-220/034 LG-180	ULG	2,60	1,90	5,87	37,5	55	74	39100349
	D 80-220/034 LG-180	YLG	2,60	1,90	5,87	37,5	40	74	39100350
	D 80-220/034 LG-180	WLG	2,60	1,90	5,87	37,5	60	75	
190	D 80-220/034 LG-190	ULG	2,60	1,90	5,87	37,5	55	75	39100351
	D 80-220/034 LG-190	YLG	2,60	1,90	5,87	37,5	40	75	39100352
	D 80-220/034 LG-190	WLG	2,60	1,90	5,87	37,5	60	75	
195	D 100-220/034 LG-195	ULG	3,50	2,60	6,50	37,5	55	79	39100366
	D 100-220/034 LG-195	YLG	3,50	2,60	6,50	37,5	40	79	39100367
	D 100-220/034 LG-195	WLG	3,50	2,60	6,50	37,5	60	79	
209	D 100-220/044 LG-209	ULG	5,13	3,70	8,40	37,5	55	79	39100368
	D 100-220/044 LG-209	YLG	5,13	3,70	8,40	37,5	40	79	39100369
	D 100-220/044 LG-209	WLG	5,13	3,70	8,40	37,5	60	80	
220	D 100-220/044 LG-220	ULG	5,13	3,70	8,40	37,5	55	80	39100370
	D 100-220/044 LG-220	YLG	5,13	3,70	8,40	37,5	40	80	39100371
	D 100-220/044 LG-220	WLG	5,13	3,70	8,40	37,5	60	80	

Characteristic curves

n = 2900 rpm

Amarex N S 50-172, n = 2900 rpm

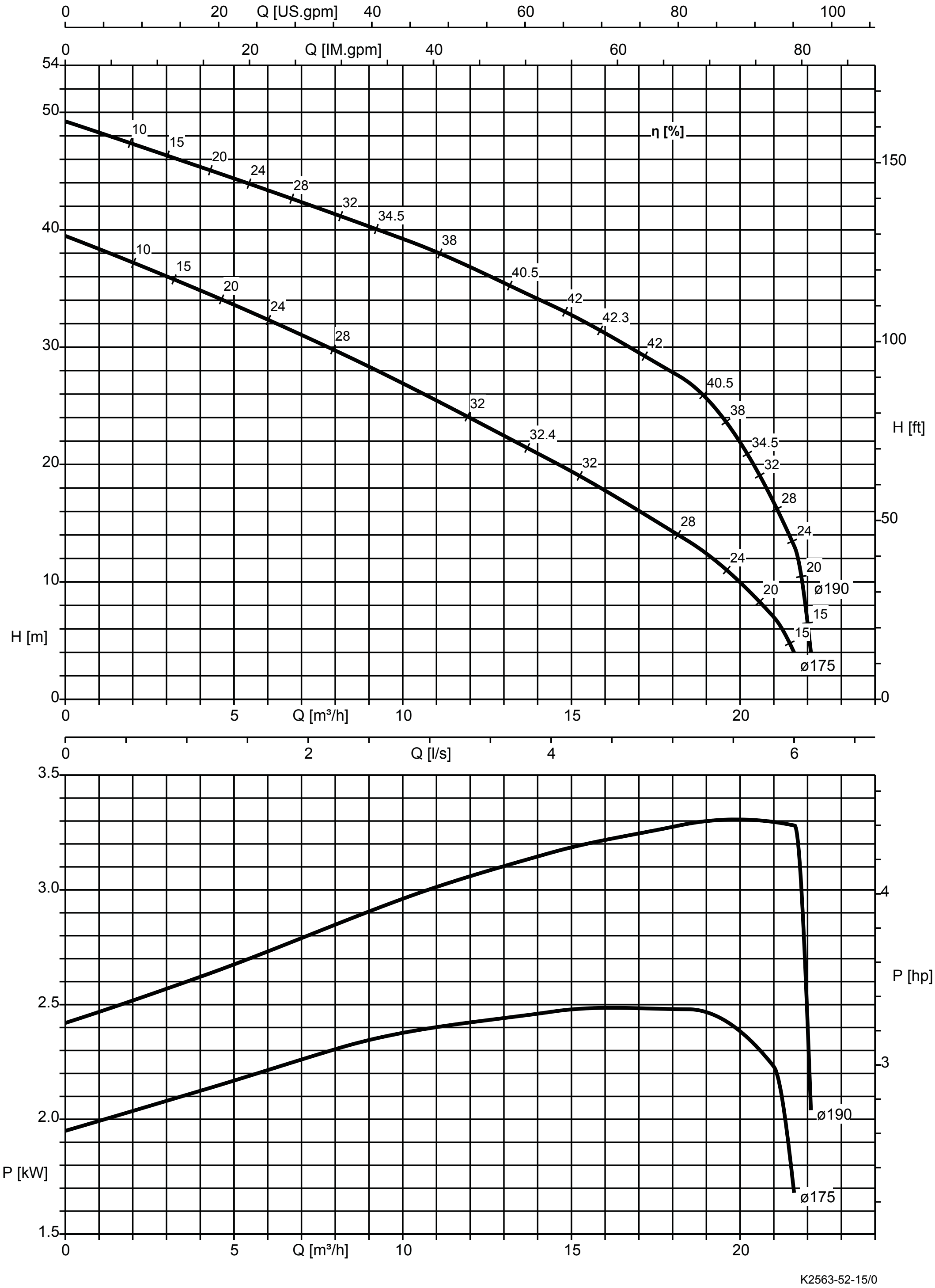
Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. The curves refer to the effective motor speed.



Free passage = 6 mm

Amarex N S 50-222, n = 2900 rpm

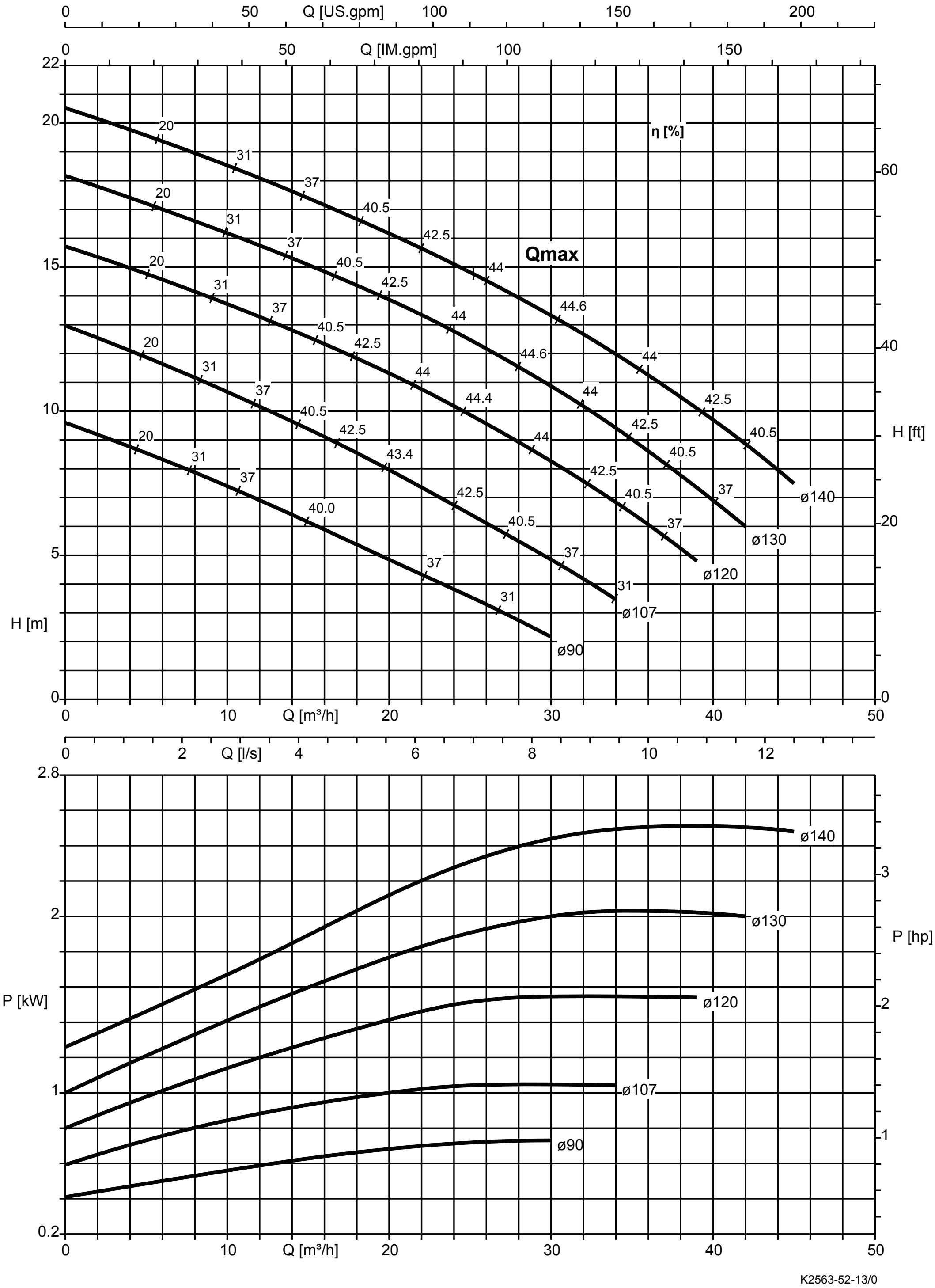
Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. The curves refer to the effective motor speed.



Free passage = 6 mm

Amarex N F 50-170, n = 2900 rpm

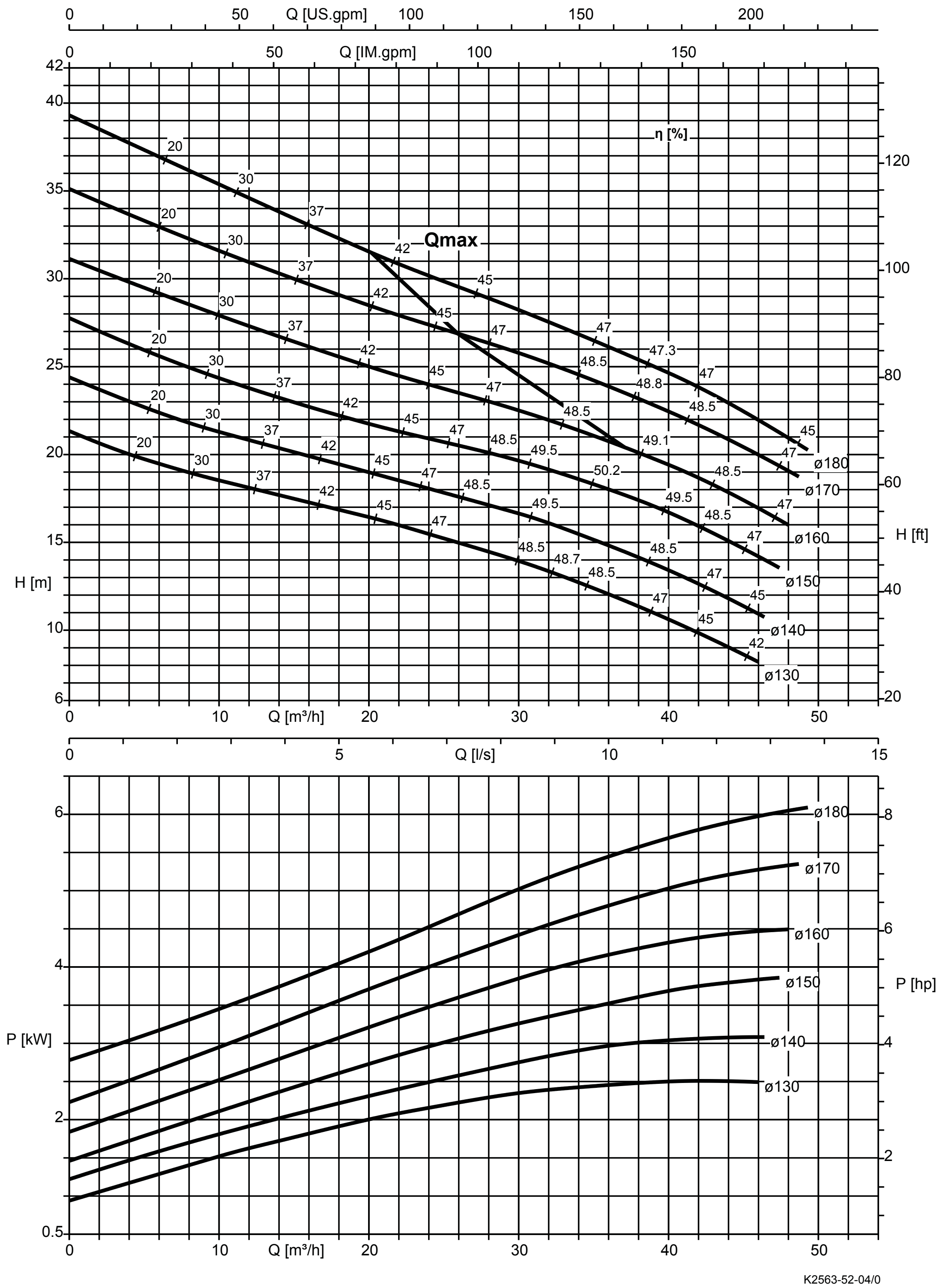
Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. The curves refer to the effective motor speed.



Free passage = 40 mm

Amarex N F 50-220, n = 2900 rpm

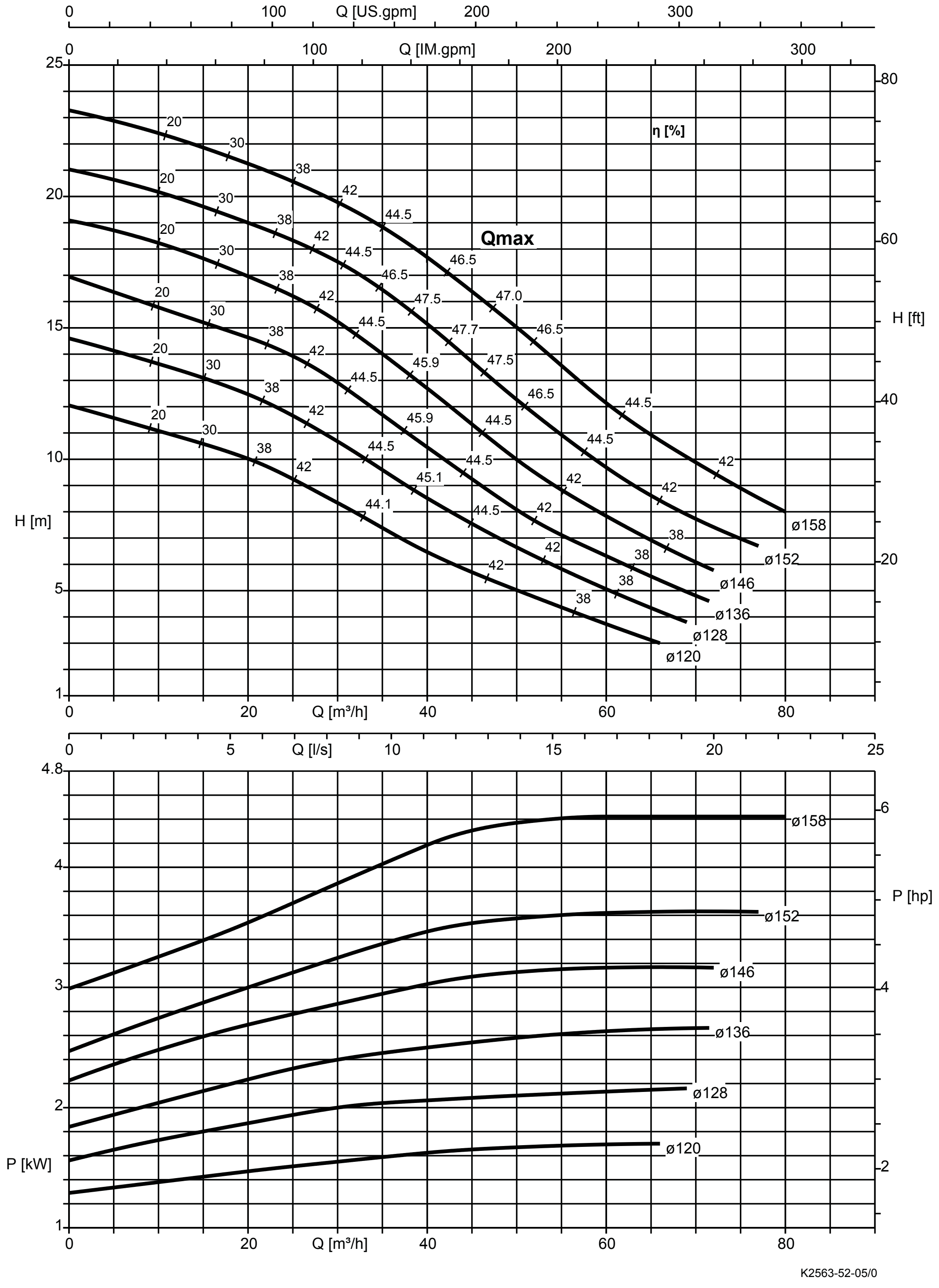
Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. The curves refer to the effective motor speed.



Free passage = 40 mm

Amarex N F 65-170, n = 2900 rpm

Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. The curves refer to the effective motor speed.

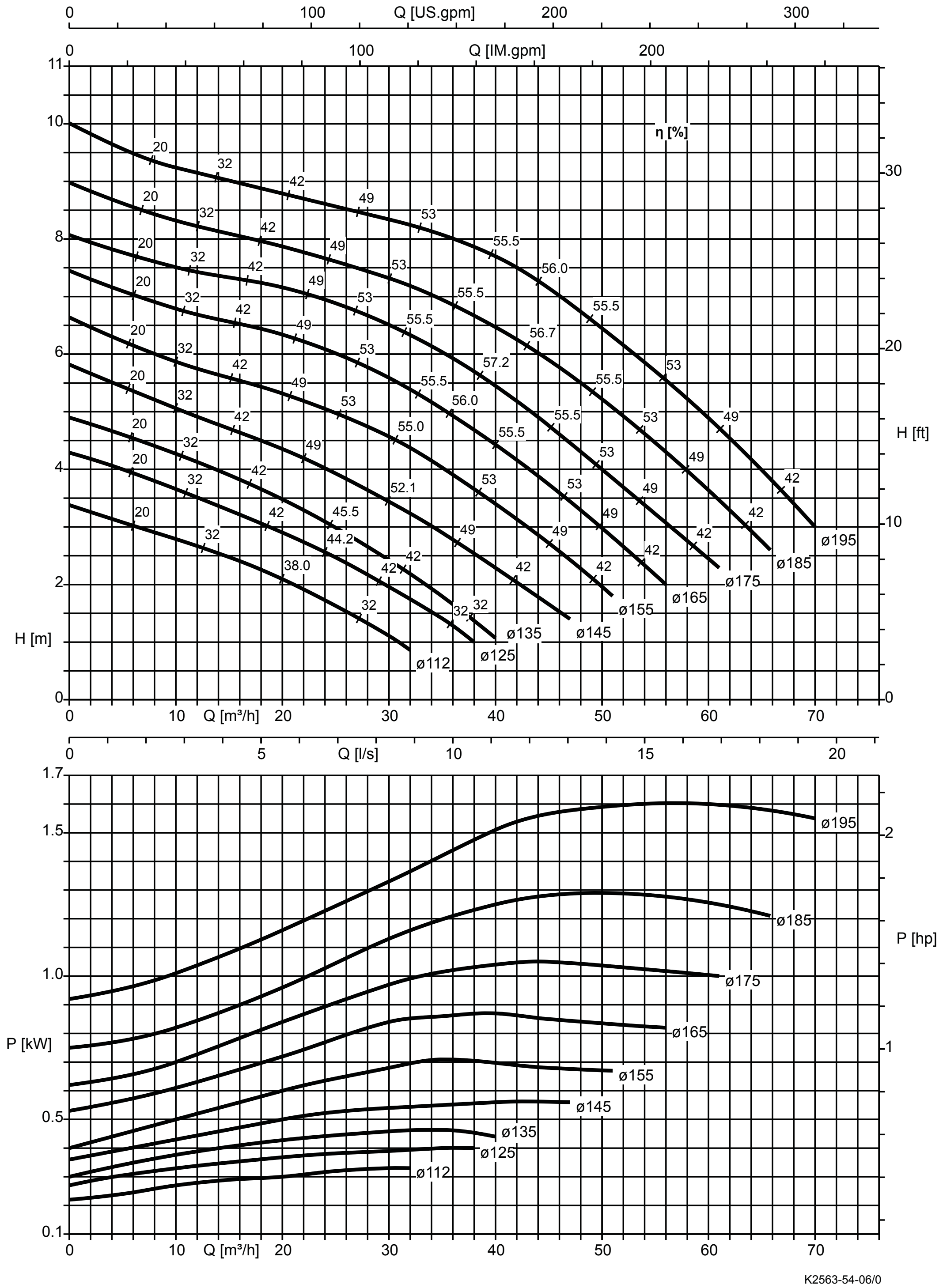


Free passage = 65 mm

n = 1450 rpm

Amarex N F 65-220, n = 1450 rpm

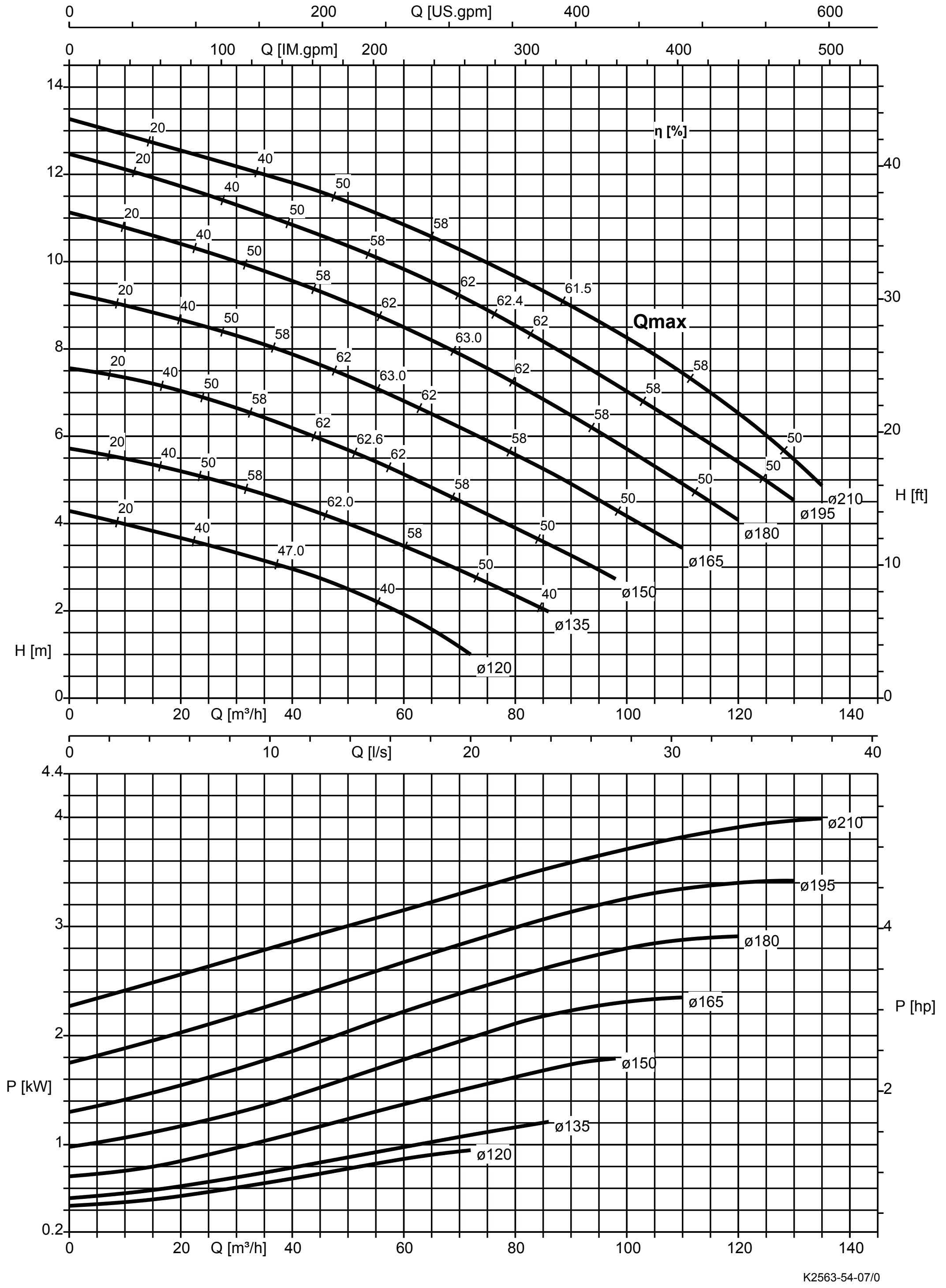
Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. The curves refer to the effective motor speed.



Free passage = 65 mm

Amarex N F 80-220, n = 1450 rpm

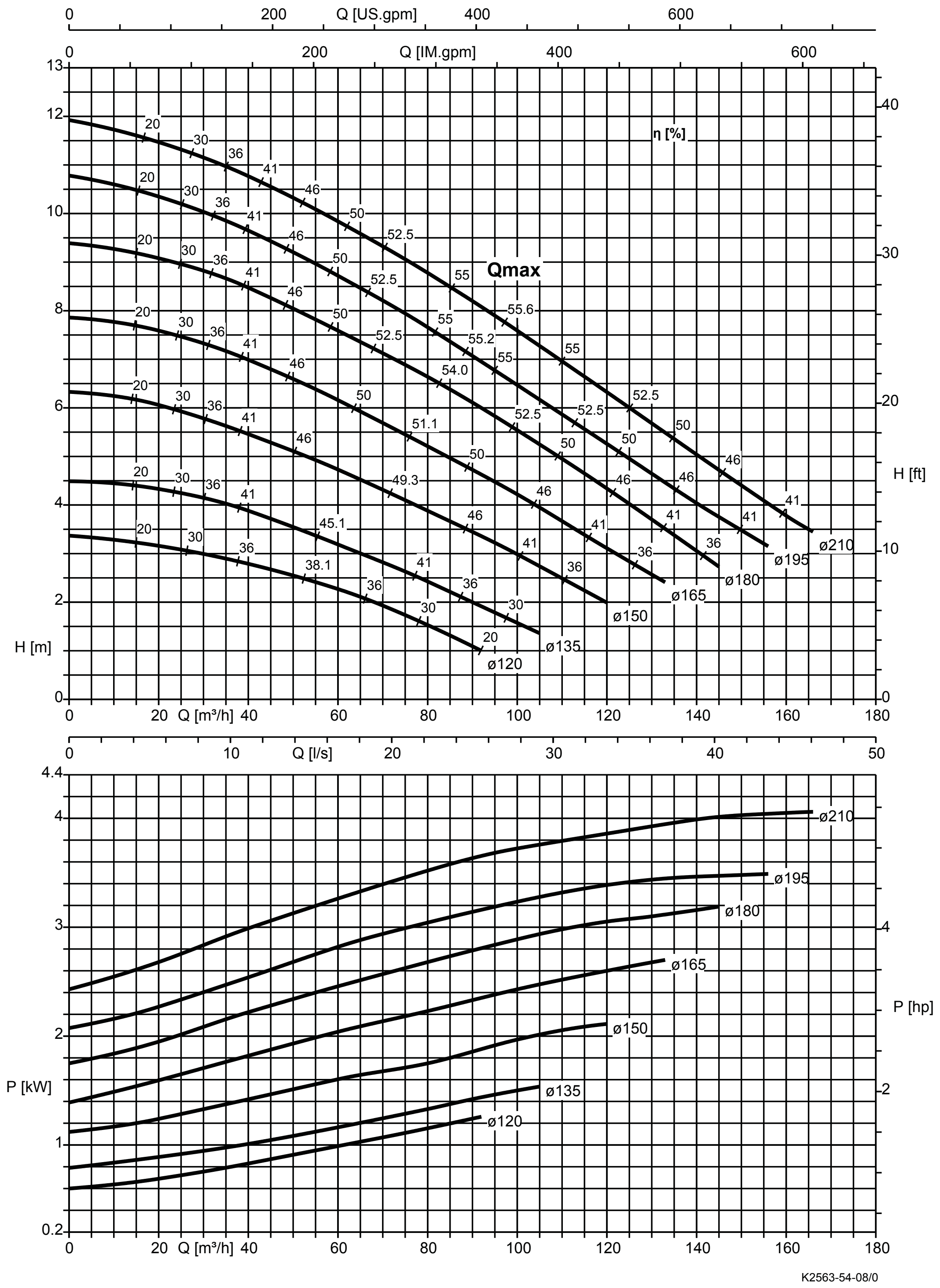
Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. The curves refer to the effective motor speed.



Free passage = 76 mm

Amarex N F 100-220, n = 1450 rpm

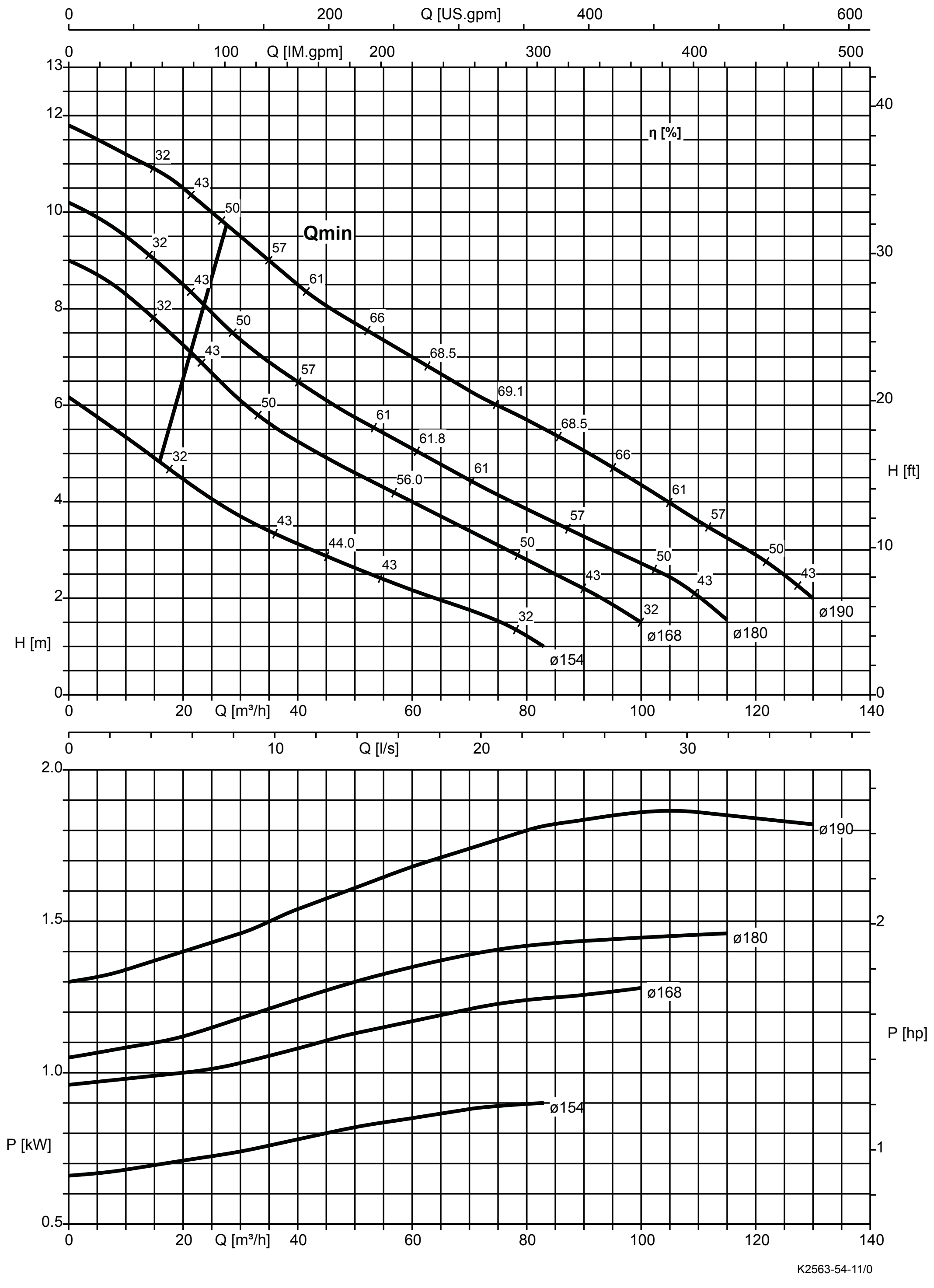
Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. The curves refer to the effective motor speed.



Free passage = 100 mm

Amarex N D 80-220, n = 1450 rpm

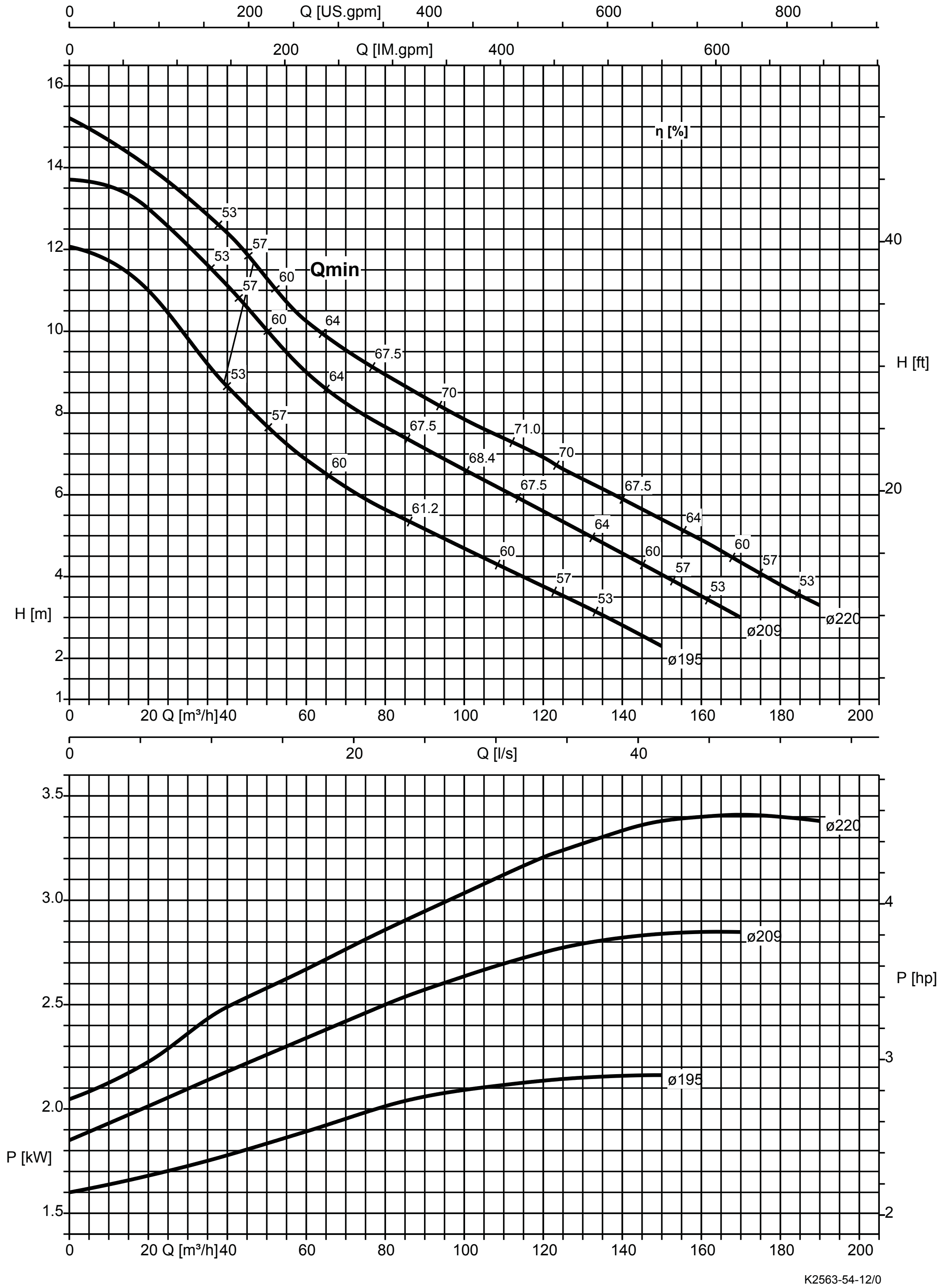
Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. The curves refer to the effective motor speed.



Free passage = 65 mm

Amarex N D 100-220, n = 1450 rpm

Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. The curves refer to the effective motor speed.

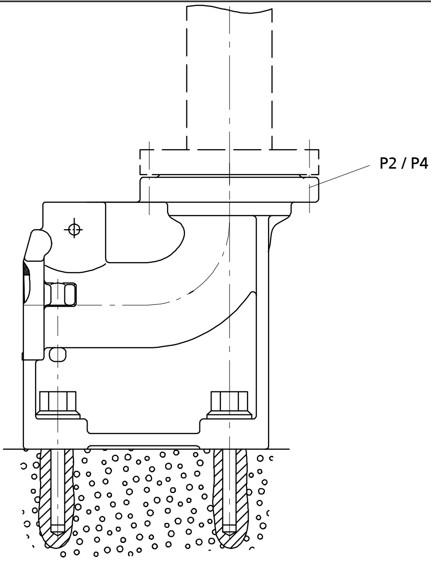
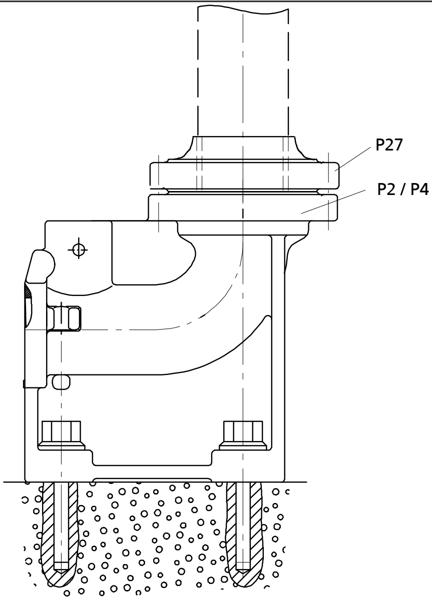
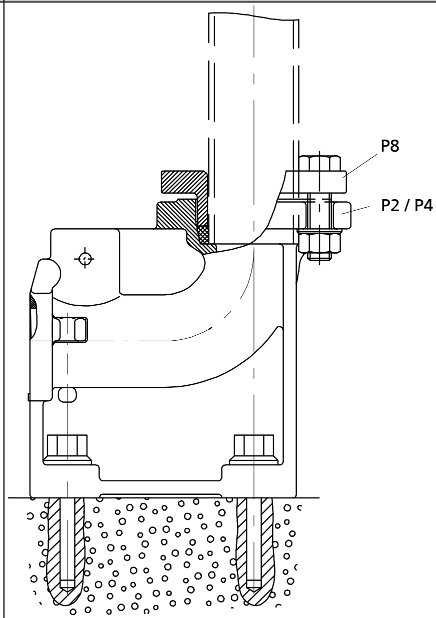


Free passage = 76 mm

Dimensions and connections

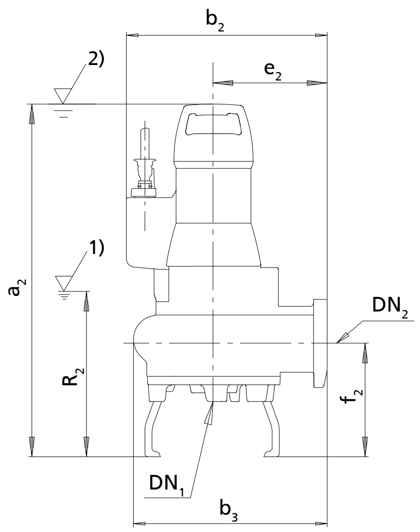
Connections

Discharge line connections at the duckfoot bend

<table>
<tr><th>Flanged connection (DN 50/DN 65)</th><th>Threaded connection in the flange (DN 50/DN 65)</th><th>Clamped connection (DN 50/DN 65)</th></tr>
<tr><td>
</td><td>
</td><td>
</td></tr>
<tr><td></td><td>For standard pipes to DIN 2440 / DIN 2441
▪ With outside diameter of 60.3 mm, steel for DN 50
▪ With outside diameter of 63 mm, PVC (ISO 3606) for DN 50
▪ With threaded flange DN 50 - G 2″
▪ With outside diameter of 76.1 mm, steel for DN 65
▪ With outside diameter of 75 mm, PVC (ISO 3606) for DN 65
▪ With threaded flange DN 65 - G 2 $^1/_2$″</td><td>For standard pipes to DIN 2440 / DIN 2441 / DIN 2448
▪ With outside diameter of 60.3 mm, steel for DN 50
▪ With outside diameter of 63 mm, PVC (ISO 3606) for DN 50
▪ With outside diameter of 76.1 mm, steel for DN 65
▪ With outside diameter of 75 mm, PVC (ISO 3606) for DN 65</td></tr>
</table>

Dimensions

Amarex N, transportable model

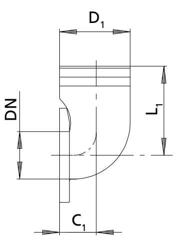


1)	Lowest switch-off point for automatic operation
2)	Minimum submergence for continuous operation

Pump dimensions [mm]

Size	Pump							
	DN_1	DN_2	a_2 18)	b_2	b_3	e_2	f_2 18)	R_2
50–172 S	-	50	547	322	293	180	152	207
50–170 F	50	50	547	322	293	180	152	207
50–222 S	-	50	609	336	307	180	155	203
50–220 F	50	50	609	336	307	180	155	203
65–170 F	65	65	653	367	338	210	164	248
65–220 F	65	65	593	353	347	210	163	253
80–220 F	80	80	672	386	392	230	187	249
80–220 D	-	80	672	386	392	230	187	249
100–220 F	100	100	698	383	390	230	207	277
100–220 D	-	100	698	383	390	230	207	277

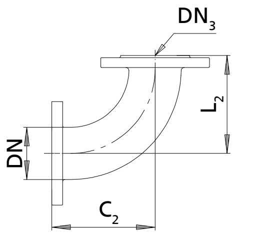
Connection elbow with flange/hose connection (P13)



Dimensions [mm]

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

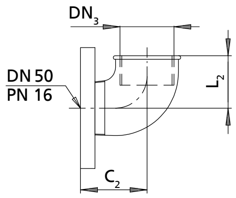
Connection elbow with flanges (P14)



Dimensions [mm]

DN	DN_3 19)	C_2	L_2
65	65	135	135
80	80	135	135
100	100	120	175

Connection elbow with internal and external thread (P14) and threaded flange (P27)

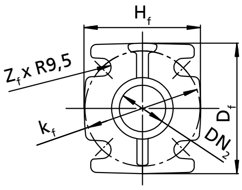


Dimensions [mm]

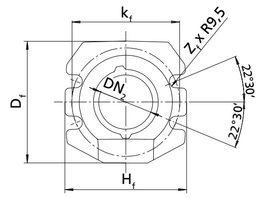
DN	DN_3	C_2	L_2
50	G 2″	78	58

Pump flange DN_2

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



DN 80 and 100
ISO 7005 PN16
DIN 2501 PN16



Dimensions of the pump flange in [mm]

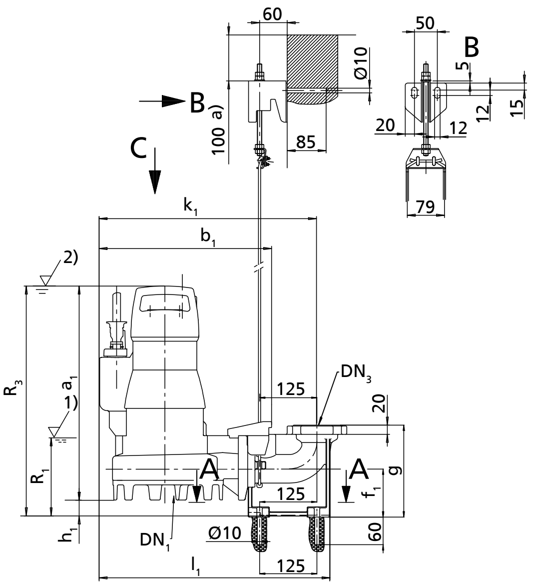
Pump size	Flange			
	H_f	k_f	D_f	Z_f
50–172 S	125	125	140	4
50–170 F	125	125	140	4
50–222 S	125	125	140	4
50–220 F	125	125	140	4
65–170 F	144	145	164	4
65–220 F	144	145	164	4
80–220 F	180	160	180	4
80–220 D	180	160	180	4
100–220 F	202	180	205	4
100–220 D	202	180	205	4

18) If a foot plate is fitted, a_2 + 10 mm
19) DN_3 to ISO 7005/DIN 2501

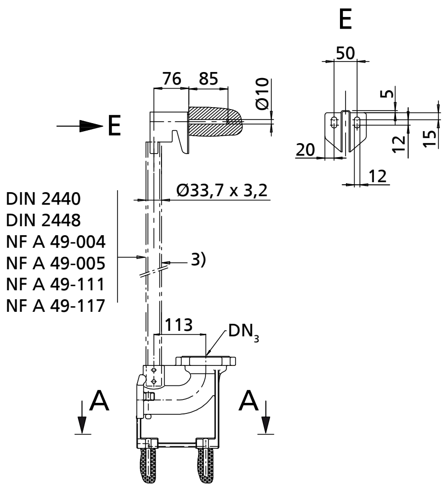
Amarex N 50, stationary model with guide wire, single-rail and guide hoop arrangement, straight claw

DN 3 = DN 50: DIN ISO ASME = standard

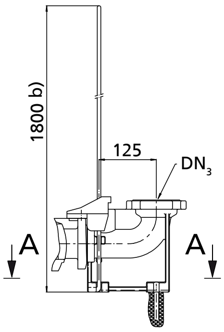
Guide wire arrangement



Single guide rail arrangement



Guide hoop arrangement



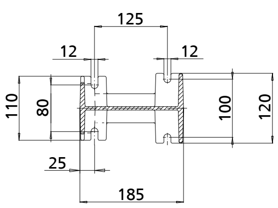
1)	Lowest switch-off point for automatic operation	2)	Minimum submergence for continuous operation
3)	Not included in KSB's scope of supply	a)	Minimum
b)	Maximum		

Dimensions of pump and foundation [mm]

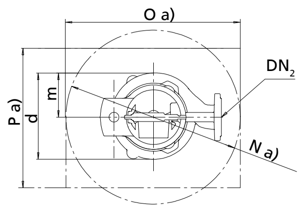
Size	Pump														Foundation			
	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	Z_f	DN_3	N	O	P
50–172 S	-	50	470	376	250	105	200	31	472	502	125	161	501	4	50	465	465	350
50–170 F	50	50	470	376	250	105	200	31	472	502	125	161	501	4	50	465	465	350
50–222 S	-	50	532	389	254	105	200	27	488	514	129	153	559	4	50	465	465	350
50–220 F	50	50	532	389	254	105	200	27	488	514	129	153	559	4	50	465	465	350

Installation in the sump

A - A

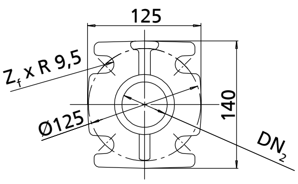


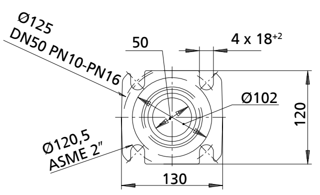
C



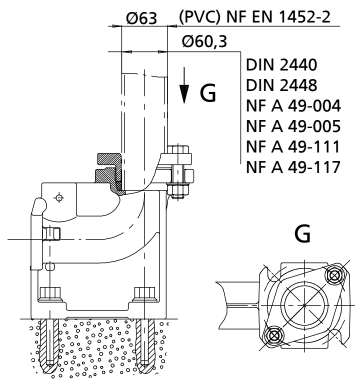
Pump flange DN₂
ISO 7005 PN10/16
DIN 2501 PN10/16

Flanged elbow DN₃
ISO 7005 PN 10 - PN16
DIN 2501 PN10 - PN16
ASME 2″
ASME B16.1 class 125





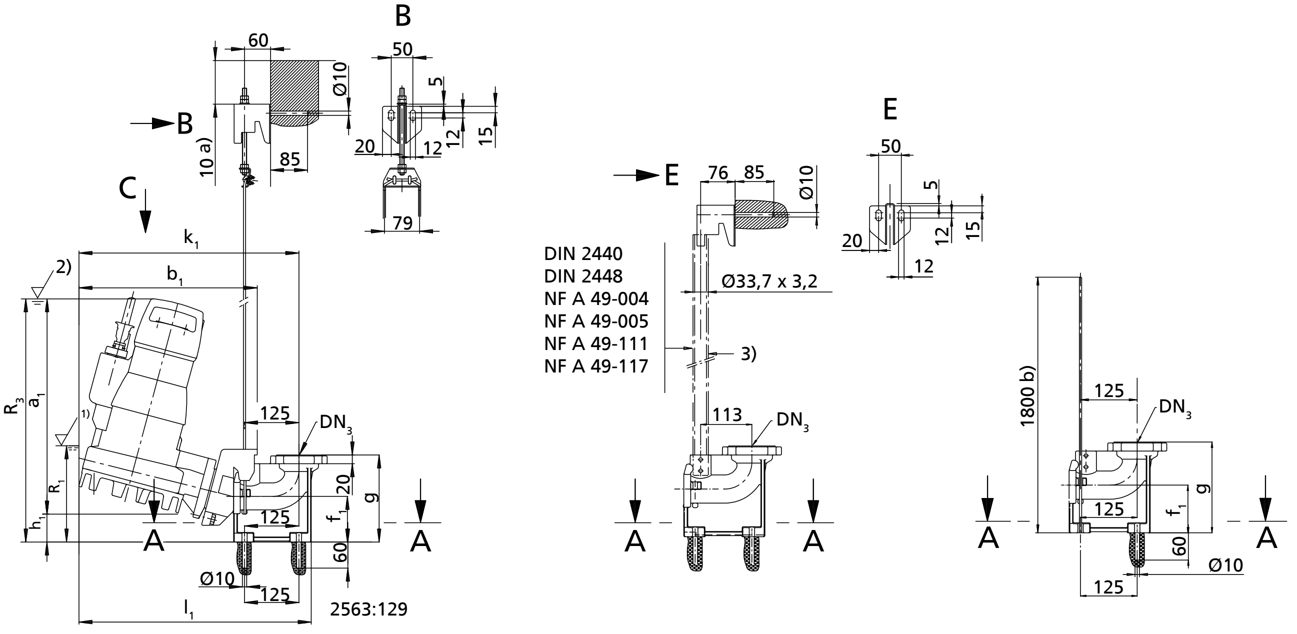
Clamped connection



Amarex N 50, stationary model with guide wire, single-rail and guide hoop arrangement, inclined claw

DN 3 = DN 50: DIN ISO ASME = standard

Guide wire arrangement **Single guide rail arrangement** **Guide hoop arrangement**



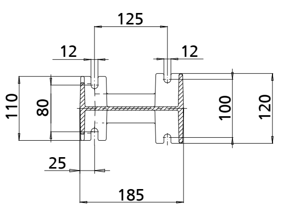
1)	Lowest switch-off point for automatic operation	2)	Minimum submergence for continuous operation
3)	Not included in KSB's scope of supply	a)	Minimum
b)	Maximum		

Dimensions of pump and foundation [mm]

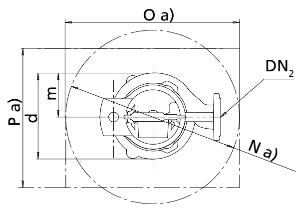
Size	Pump													Foundation			
	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	Z_f	DN_3	N	O	P
50–172 S	50	495	421	250	105	200	58	500	526	125	220	550	4	50	480	480	350
50–222 S	50	556	416	254	105	200	54	506	532	129	230	606	4	50	480	480	350

Installation in the sump

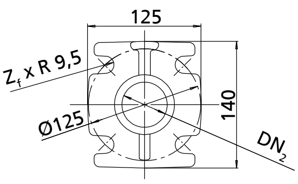
A - A



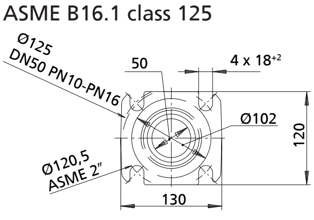
C



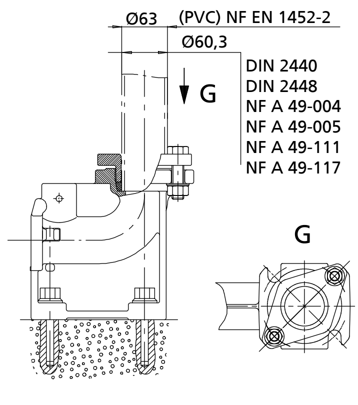
Pump flange DN₂
ISO 7005 PN10/16
DIN 2501 PN10/16



Flanged elbow DN₃
ISO 7005 PN16
DIN 2501 PN16
ASME 2″
ASME B16.1 class 125



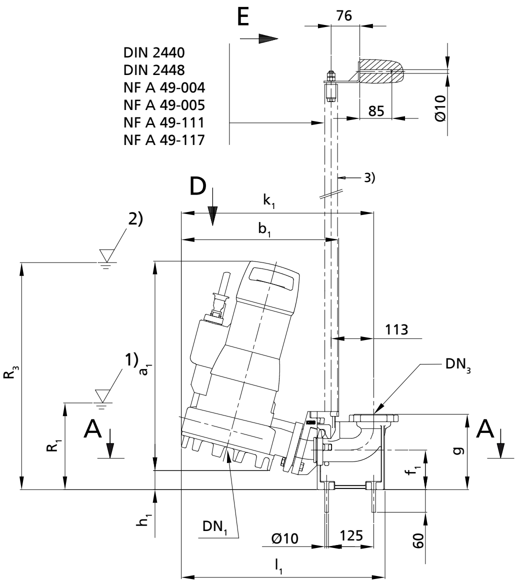
Clamped connection

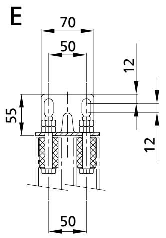


Amarex N 50, stationary installation with twin guide rail arrangement, inclined claw

DN 3 = DN 50: DIN ISO ASME = standard

Twin guide rail arrangement



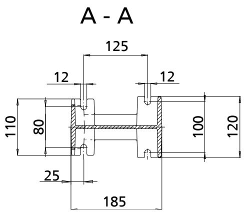


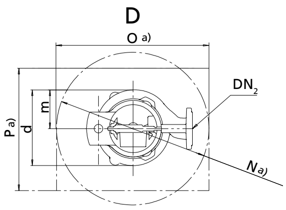
1)	Lowest switch-off point for automatic operation	2)	Minimum submergence for continuous operation
3)	Not included in KSB's scope of supply	a)	Minimum

Dimensions of pump and foundation [mm]

Size	Pump														Foundation			
	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	Z_f	DN_3	N	O	P
50–172 S	-	50	494	422	250	105	200	54	499	528	125	220	550	4	50	480	480	350
50–170 F	50	50	494	422	250	105	200	54	499	528	125	220	550	4	50	480	480	350
50–222 S	-	50	549	426	254	105	200	53	506	535	129	230	606	4	50	480	480	350
50–220 F	50	50	549	426	254	105	200	53	506	535	129	230	606	4	50	480	480	350

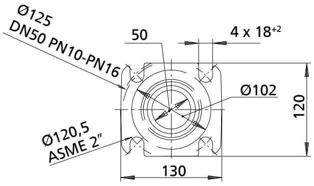
Installation in the sump



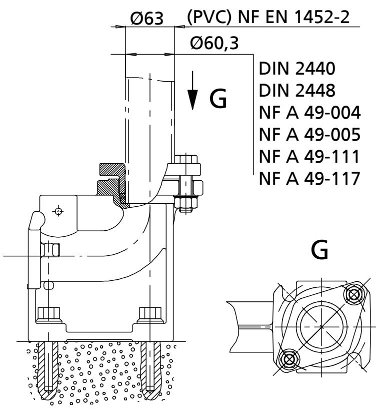


Flanged elbow DN₃

ISO 7005 PN16
DIN 2501 PN16
ASME 2″
ASME B16.1 class 125



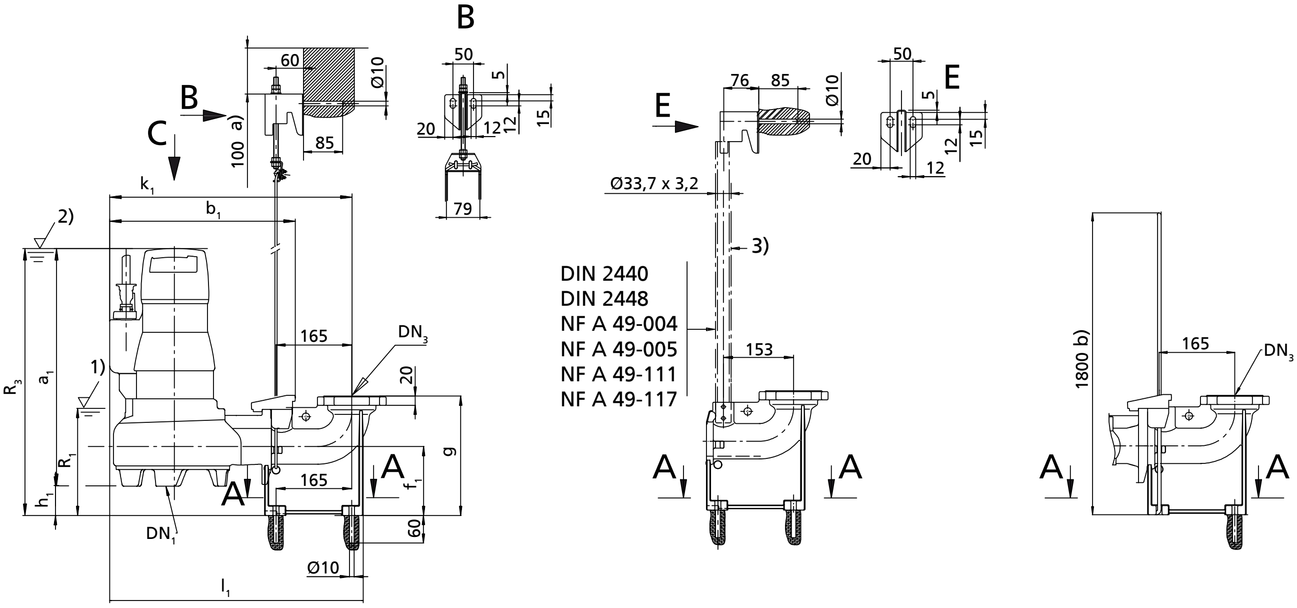
Clamped connection



Amarex N 65, stationary model with guide wire, single-rail and guide hoop arrangement

DN 3 = 65/65: DIN ISO ASME = standard - DN 3 = 65/80: DIN ISO = standard, ASME = variant

Guide wire arrangement **Single guide rail arrangement** **Guide hoop arrangement**

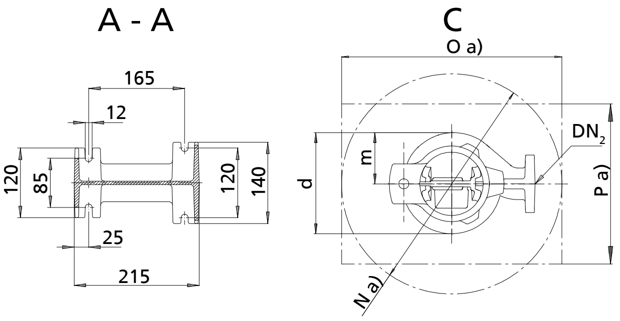


1)	Lowest switch-off point for automatic operation	2)	Minimum submergence for continuous operation
3)	Not included in KSB's scope of supply	a)	Minimum
b)	Maximum		

Dimensions of pump and foundation [mm]

Size	Pump														Foundation			
	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	Z_f	DN_3	N	O	P
65–170 F	65	65	578	422	251	150	260	61	558	583	127	234	639	4	65	500	500	400
65–220 F	65	65	518	407	265	150	260	63	544	569	142	241	581	4	65	500	500	400

Installation in the sump

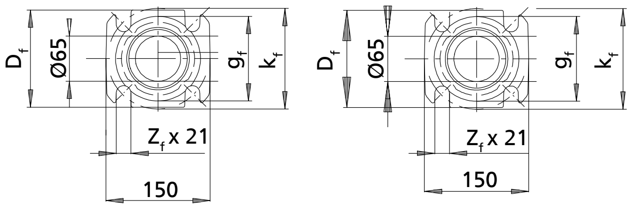


Flanged elbow DN

DN 65/65

ISO 7005 PN16
DIN 2501 PN16

ASME B 16.1 class 125
2 1/2 ″



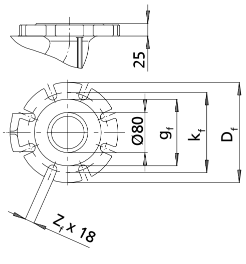
Dimensions of the flanged elbow DN_3 [mm]

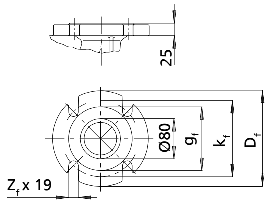
Flange design	DN_3	g_f	k_f	D_f	Z_f
ISO 7005 PN16 DIN 2501 PN16	65	122	145	140	4
	80	133	160	200	8
ASME B16.1 class 125	65	122	140	140	4
	80	127	152,5	191	4

Extension elbow DN_3

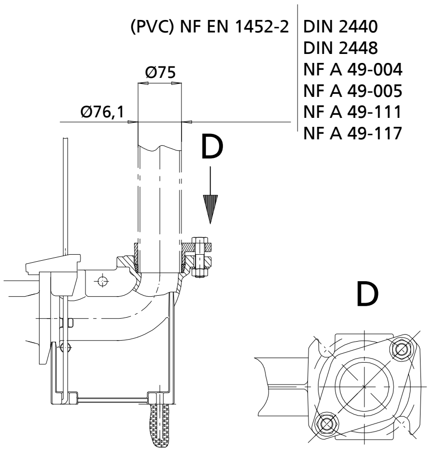
DN 65/80

ISO 7005 PN16 DIN 2501 PN16	ASME B 16.1 class 125 3″





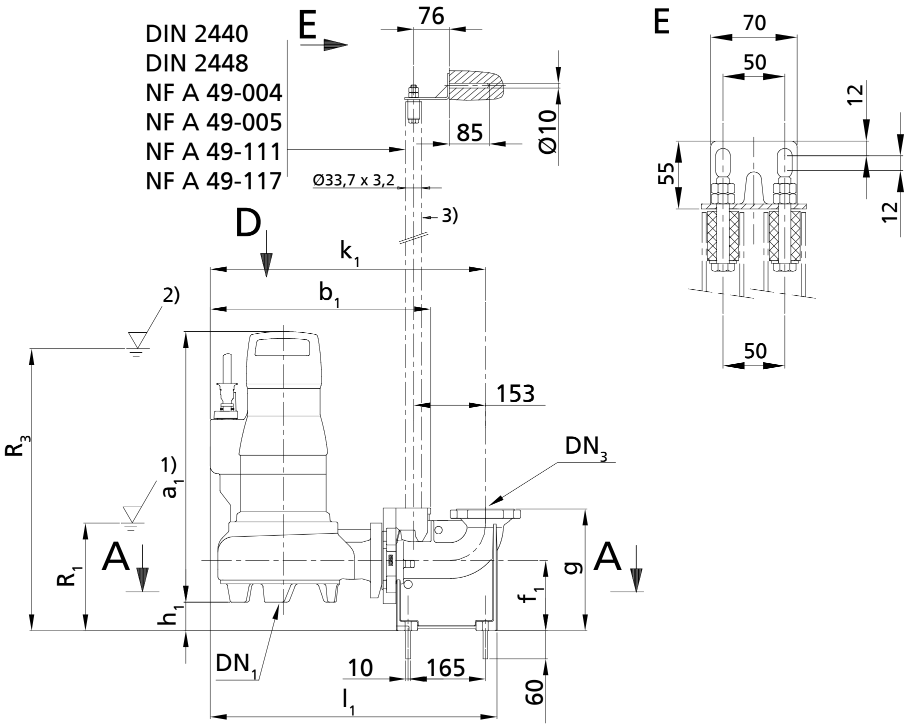
Clamped connection



Amarex N 65, stationary installation with twin guide rail arrangement

DN 3 = 65/65: DIN ISO ASME = standard - DN 3 = 65/80: DIN ISO = standard, ASME = variant

Twin guide rail arrangement

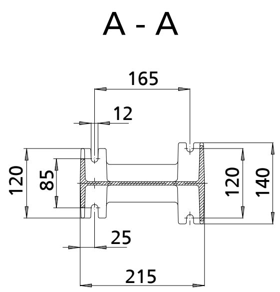


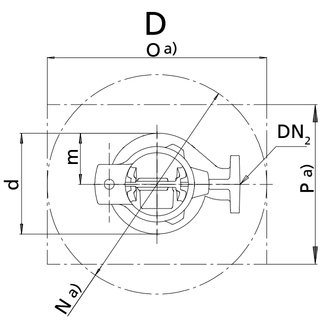
1)	Lowest switch-off point for automatic operation	2)	Minimum submergence for continuous operation
3)	Not included in KSB's scope of supply	a)	Minimum

Dimensions of pump and foundation [mm]

Size	Pump														Foundation		
	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	Z_f	N	O	P
65–170 F	65	65	578	468	251	150	260	61	588	613	127	234	639	4	550	550	400
65–220 F	65	65	518	454	265	150	260	63	574	599	142	241	581	4	550	550	400

Installation in the sump

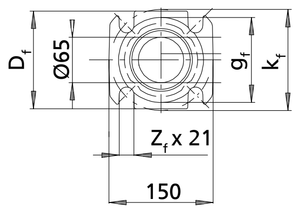




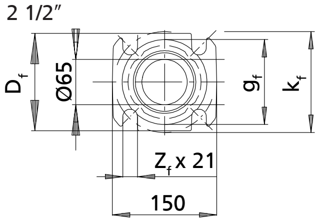
Flanged elbow DN

DN 65/65

ISO 7005 PN16
DIN 2501 PN16



ASME B16.1 class 125
2 1/2″



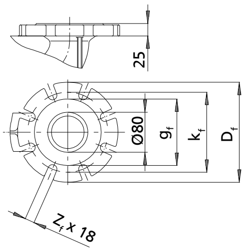
Dimensions of the flanged elbow DN_3 [mm]

Flange design	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
ASME B16.1 class 125	65	122	140	140	4
	80	127	152,5	191	4

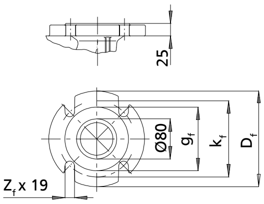
Extension elbow DN_3

DN 65/80

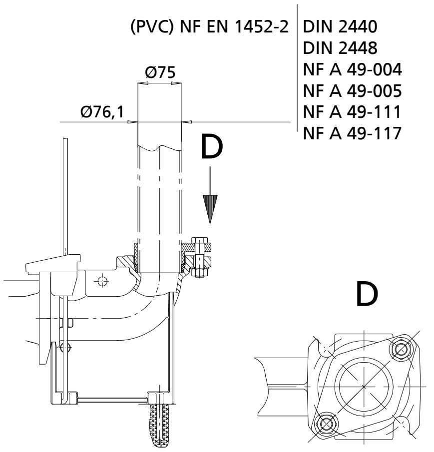
ISO 7005 PN16
DIN 2501 PN16



ASME B16.1 class 125
3″



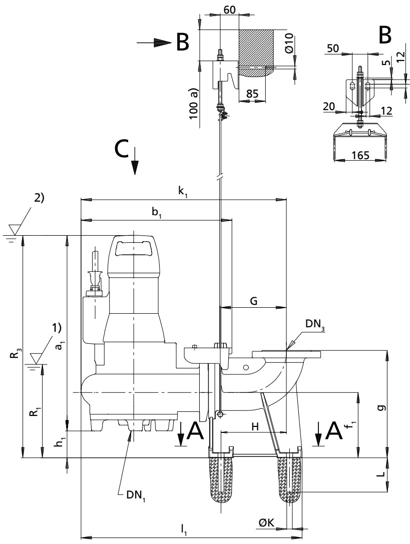
Clamped connection



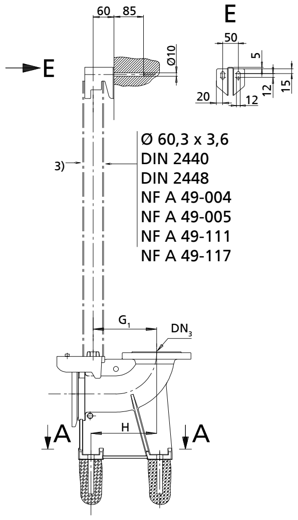
Amarex N 80 and 100, stationary installation with guide wire and single guide rail arrangement

DN 3 = 80/80: DIN ISO = standard, ASME = variant - DN 3 = 80/100 or 100/100: DIN ISO ASME = standard

Guide wire arrangement



Single guide rail arrangement



1)	Lowest switch-off point for automatic operation	2)	Minimum submergence for continuous operation
3)	Not included in KSB's scope of supply	a)	Minimum

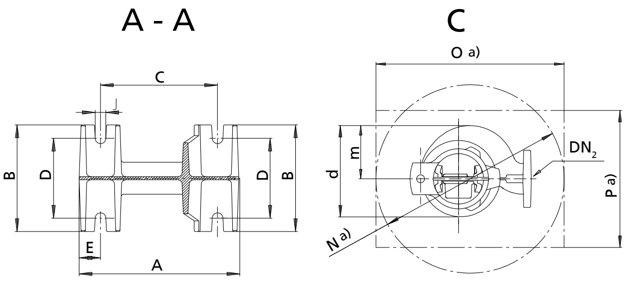
Pump dimensions [mm]

Size	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

Dimensions of the foundation in [mm]

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

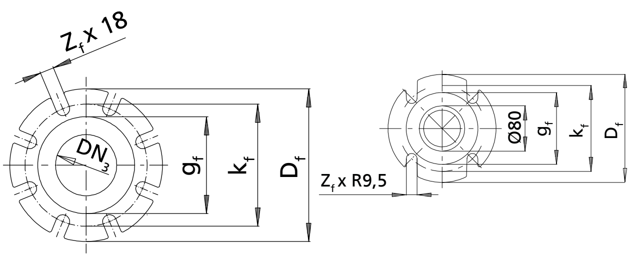
Installation in the sump



Flanged elbow DN

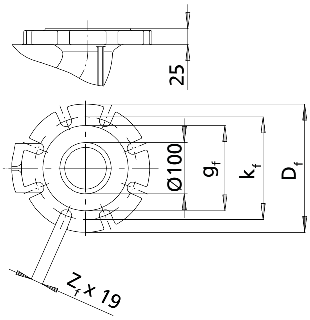
DN 80/80
ISO 7005 PN16
DIN 2501 PN16
DN 100/100
ISO 7005 PN16
DIN 2501 PN16
ASME B16.1 class 125
4″

DN 80/80
ASME B16.1 class 125
3″

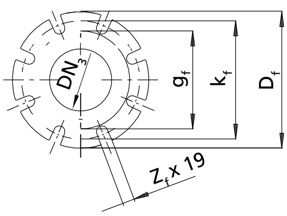


Extension elbow DN_3

DN 80/100
ISO 7005 PN16
DIN 2501 PN16



DN 80/100
ASME B16.1 class 125
4″



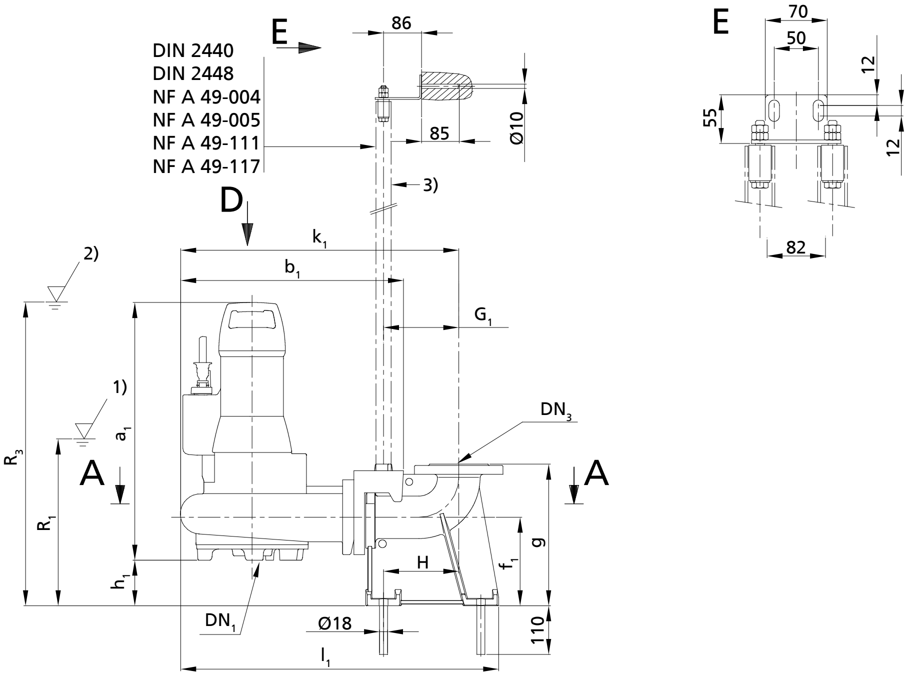
Dimensions of the flanged elbow DN_3 [mm]

Flange design	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	8
ASME B16.1 class 125	80	127	152,5	191	4
	100	156	190,5	220	8

Amarex N 80 and 100, stationary installation with twin guide rail arrangement

DN 3 = 80/80: DIN ISO = standard, ASME = variant - DN 3 = 80/100 or 100/100: DIN ISO ASME = standard

Twin guide rail arrangement

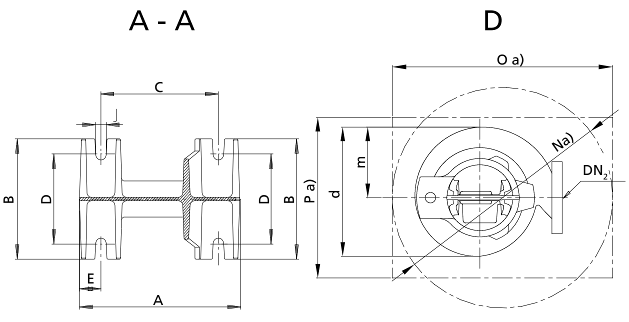


1)	Lowest switch-off point for automatic operation	2)	Minimum submergence for continuous operation
3)	Not included in KSB's scope of supply	a)	Minimum
b)	Maximum		

Pump dimensions [mm]

Size	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	506	322	200	320	103	630	720	176	262	685
80–220 D	-	80	602	506	322	200	320	86	630	720	176	262	688
100–220 F	100	100	603	529	318	210	345	98	674	724	169	280	701
100–220 D	-	100	628	529	318	210	345	76	674	724	169	280	704

Installation in the sump

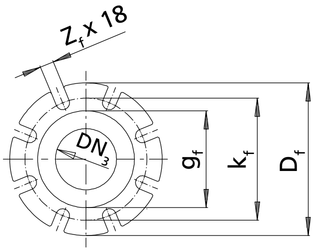


Dimensions of the foundation in [mm]

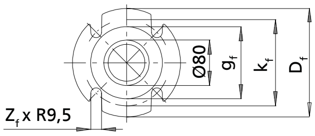
Size	Foundation										
	DN_3	A	B	C	D	E	G_1	H	J	N	O	P
80–220 F	80	300	200	220	150	40	170	170	20	580	580	400
80–220 D	100	300	200	220	150	40	170	170	20	580	580	400
100–220 F	100	300	200	220	150	40	210	210	20	600	600	400
100–220 D	100	300	200	220	150	40	210	210	20	600	600	400

Flanged elbow DN

DN 80/80
ISO 7005 PN16
DIN 2501 PN16
DN 100/100
ISO 7005 PN16
DIN 2501 PN16
ASME B16.1 class 125
4″

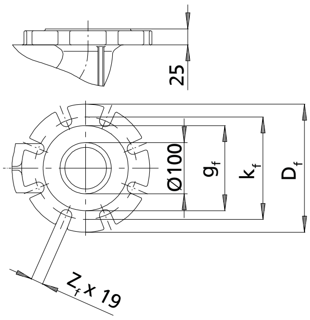


DN 80/80
ASME B16.1 class 125
3″

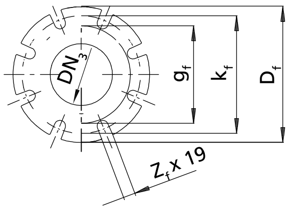


Extension elbow DN_3

DN 80/80
ISO 7005 PN16
DIN 2501 PN16



DN 80/100
ASME B16.1 class 125
4″



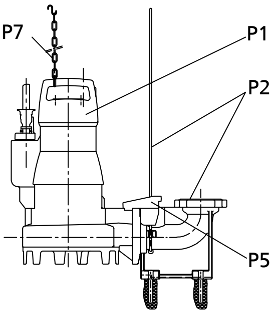
Dimensions of the flanged elbow DN_3 [mm]

Flange design	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	8
ASME B16.1 150 lbs	80	127	152,5	191	4
	100	156	190,5	220	8

Installation types

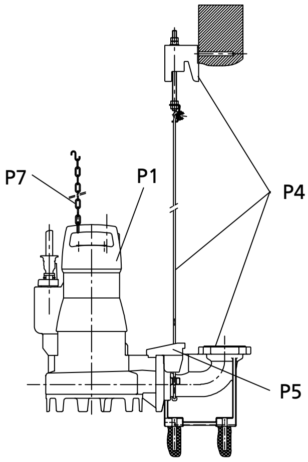
Overview of installation types

Installation type S - stationary wet installation



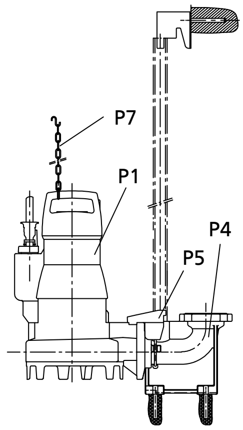
Guide hoop arrangement

P1: pump
P2: installation parts for guide hoop arrangement (Amarex N 50 and 65 only), installation depth = 1.5 m / 1.8 m / 2.1 m
P5: claw
P7: chain and shackle, length = 2 m



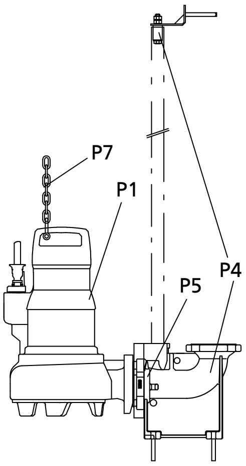
Guide wire arrangement

P1: pump
P4: installation parts for guide wire arrangement, installation depth = 4.5 m
P5: claw
P7: chain and shackle, length = 5 m



Single guide rail arrangement

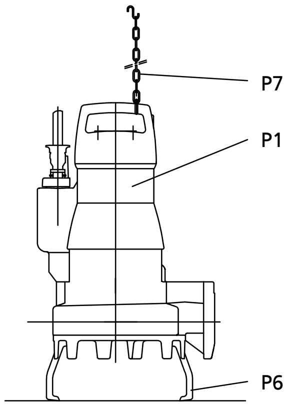
P1: pump
P4: installation parts for single guide rail arrangement
P5: claw
P7: chain and shackle, length = 5 m



Twin guide rail arrangement

P1: pump
P4: installation parts for twin guide rail arrangement
P5: claw and adapter
P7: chain and shackle, length = 5 m

Installation type P - transportable wet installation

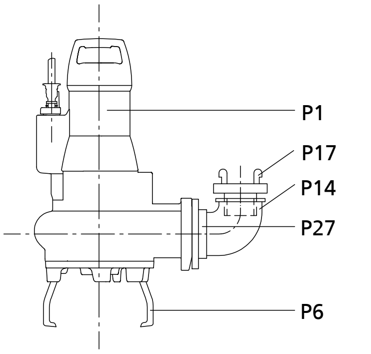


P1: pump
P6: foot
P7: chain and shackle, length = 5 m

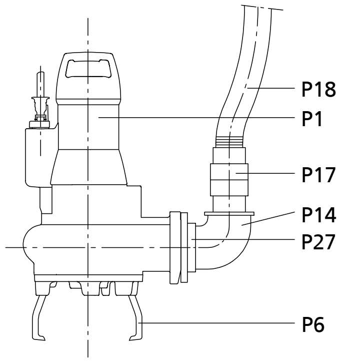
Notes on installation

Suggested installation layouts for transportable pump sets

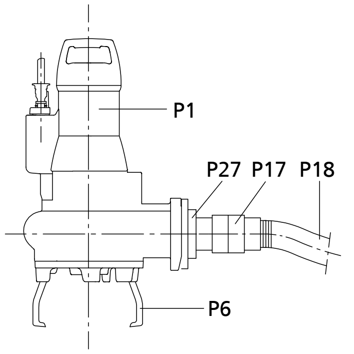
Size 50



Suggestion 1
Vertical hose connection with elbow (P14) and Storz rigid coupling (P17) (quick connection)

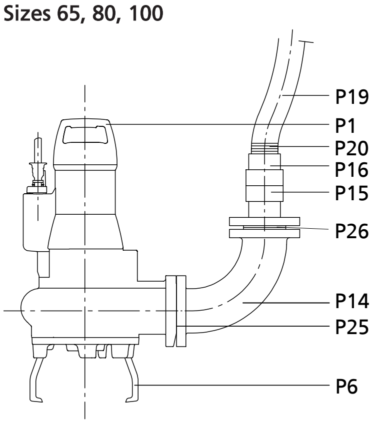


Suggestion 2
Vertical hose connection with plastic hose (P18)

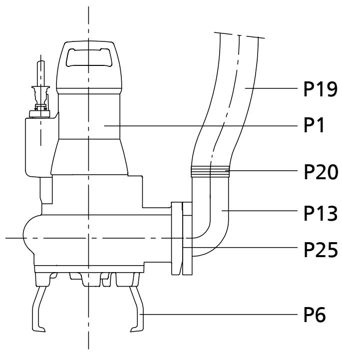


Suggestion 3
Horizontal hose connection (quick connection) with plastic hose (P18)

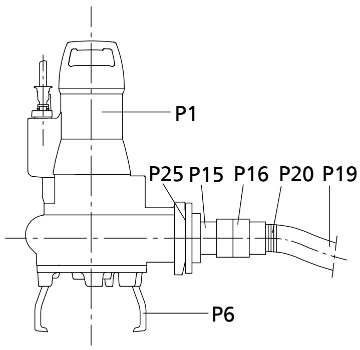
Sizes 65, 80, 100



Suggestion 1
Vertical hose connection (quick connection) with plastic hose (P19) and hose clip (P20)



Suggestion 2
Vertical hose connection with plastic hose (P19), hose clip (P20) and connection elbow (P13)



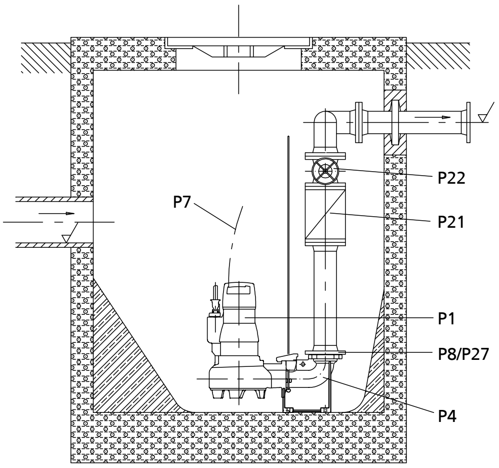
Suggestion 3
Horizontal hose connection (quick connection) with plastic hose (P19), hose clip (P20), Storz hose coupling (P16), Storz rigid coupling (P15)

P1 to P27 (⇨ Page 42)

Suggested installation layouts for stationary pump sets

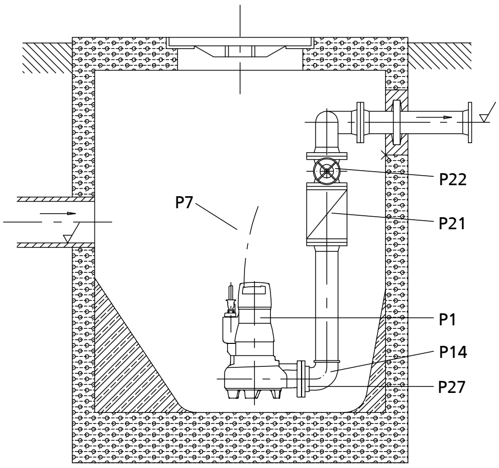
Sizes 50, 65, 80, 100

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



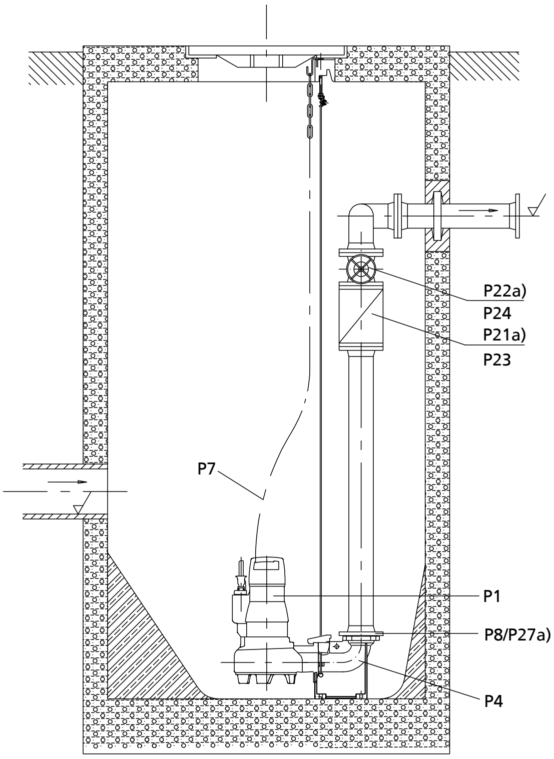
Suggestion 1
Single-pump station
Flanged duckfoot bend

Suspended installation
Amarex N S 50-172/F 50-170, S 50-222/F 50-220, F 65-170/65-220

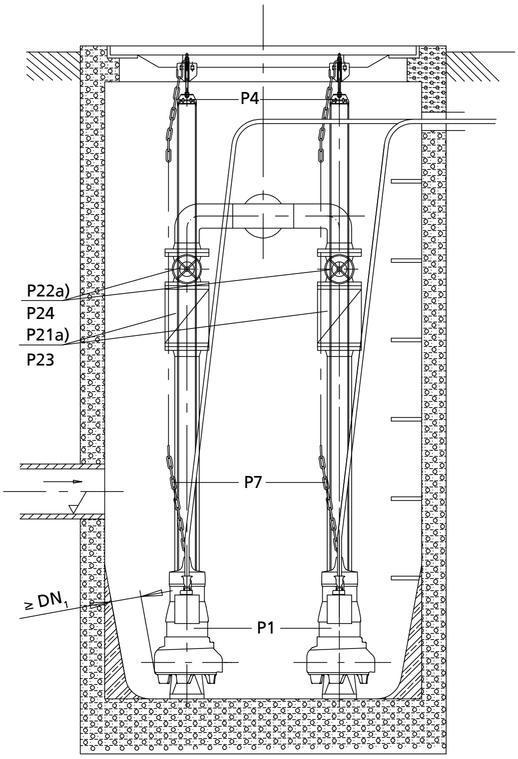


Suggestion 2
Single-pump station for 1.5 m installation depth
Direct connection to discharge pipe (suspended installation)

Guide wire, single guide rail or twin guide rail arrangement
Amarex N 50, 65, 80, 100



Suggestion 3
Either with guide wire, single guide rail or twin guide rail arrangement
Single-pump station for 4.5 m installation depth
Flanged duckfoot bend

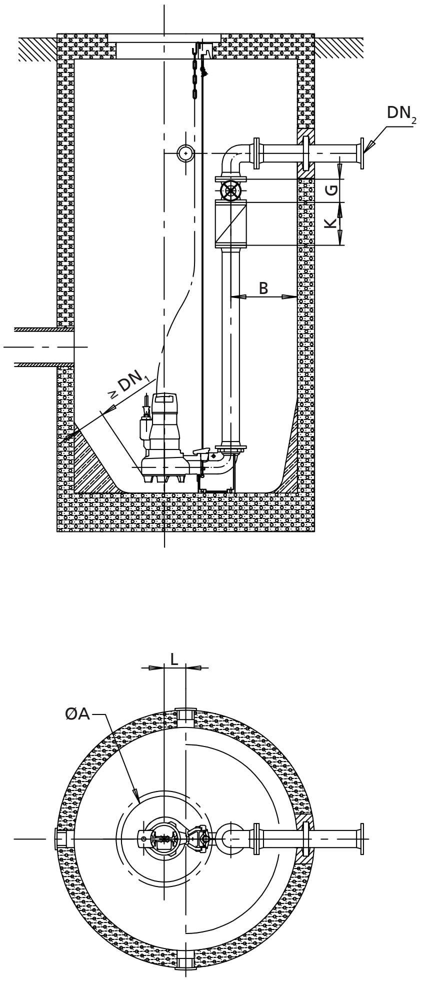


Suggestion 4
Either with guide wire, single guide rail or twin guide rail arrangement
Dual-pump station for 4.5 m installation depth
Flanged duckfoot bend

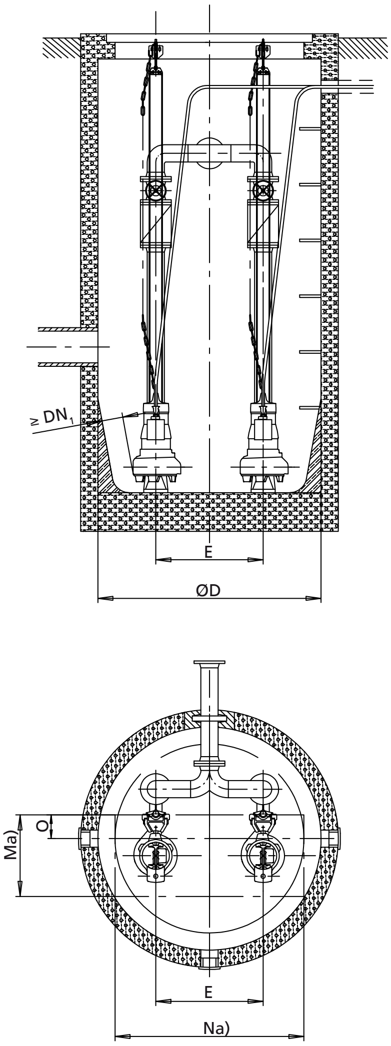
a)	DN 50 only

Dimensions

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



Single-pump station for 4.5 m installation depth
Flanged duckfoot bend



Dual-pump station for 4.5 m installation depth
Flanged duckfoot bend

a)	minimum

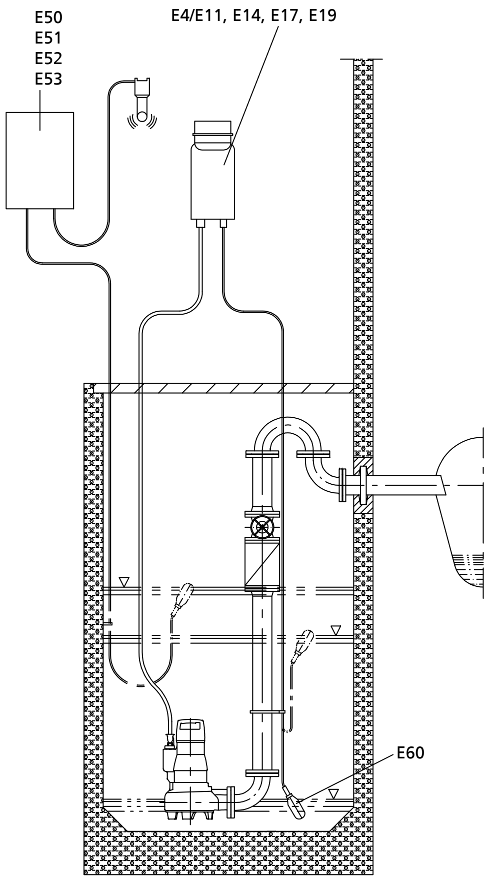
Dimensions [mm]

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

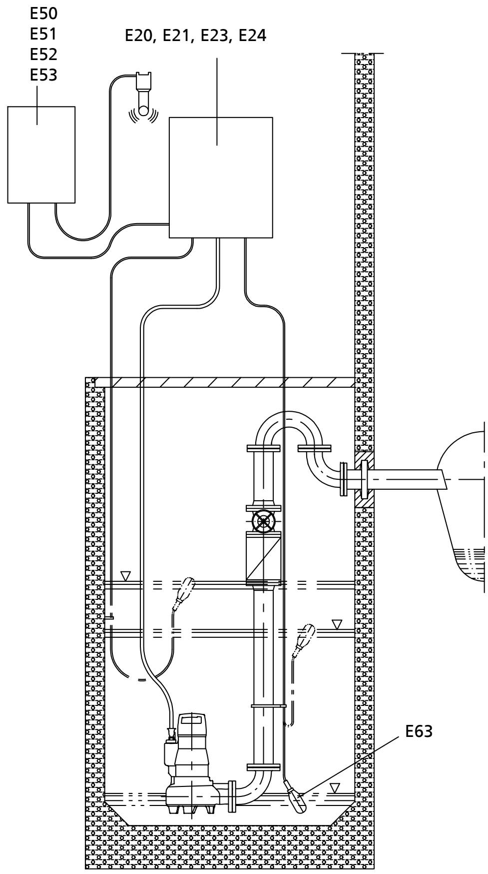
Suggested electrical installation layouts

Amarex N is available in explosion-proof and non-explosionproof design.

CEE motor protection switch (up to 4.0 kW)



Suggested installation layout No. 1
Non-explosionproof



Suggested installation layout No. 2
Explosion-proof

Scope of supply

Wet-installed stationary pump sets

- Pump set complete with power cables
- Claw with sealing element (O-ring) and mounting elements
- Lifting rope/lifting chain[20]
- Mounting bracket with mounting elements
- Duckfoot bend with mounting elements
- Guiding accessories
  (guide rails are not included in KSB's scope of supply)

Wet-installed transportable pump sets

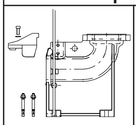
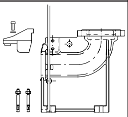
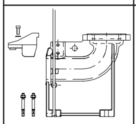
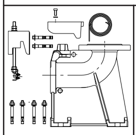
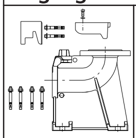
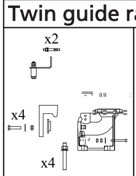
- Pump set complete with power cables
- Feet (and foot plate, if applicable)
- Lifting rope/lifting chain[21]

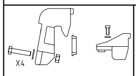
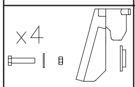
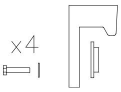
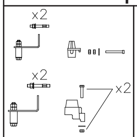
20) Optional
21) Optional

Accessories

Installation parts for stationary pump sets

Overview of installation parts for stationary installation

	Item	Description	Sizes	Connection/ installation depth	Mat. No.	[kg]
Guide hoop arrangement						
	P2 + P5	Installation parts for stationary wet installation (guide hoop arrangement) Consisting of: DN 50 flanged duck foot bend, stainless steel anchor bolts, guide rail, claw with stainless steel screws/bolts, NOW WITHOUT CHAIN	Amarex DN 50, DN 3: DIN ISO ASME straight claw	Inst. depth 1.5 m	39022210	9
				Inst. depth 1.8 m	39022211	10
				Inst. depth 2.1 m	39022212	11
			Amarex N DN 50, DN 3: DIN ISO ASME inclined claw	Inst. depth 1.5 m	39022213	14
				Inst. depth 1.8 m	39022214	15
				Inst. depth 2.1 m	39022215	14
	P2 + P5	Installation parts for stationary wet installation (guide hoop arrangement) Consisting of: DN 65 flanged duck foot bend, stainless steel anchor bolts, guide rail, claw with stainless steel screws/bolts, NOW WITHOUT CHAIN	Amarex N DN 65, DN 3: DIN ISO ASME	Inst. depth 1.5 m	39020827	14.5
				Inst. depth 1.8 m	39020828	15.5
				Inst. depth 2.1 m	39020829	17
	P2 + P5	Installation parts for stationary wet installation (guide hoop arrangement) Consisting of: DN 65/80 flanged duck foot bend, stainless steel anchor bolts, guide rail, claw with stainless steel screws/bolts, NOW WITHOUT CHAIN	Amarex N DN 65/80, DN 3: DIN/ISO	Inst. depth 1.5 m	39020848	16
				Inst. depth 1.8 m	39020849	17
				Inst. depth 2.1 m	39020850	18.5
			Amarex N DN 65/80, DN 3: ASME	Inst. depth 1.5 m	39022255	16
				Inst. depth 1.8 m	39022256	17
				Inst. depth 2.1 m	39022257	16
Guide wire arrangement						
	P4 + P5	Installation parts for stationary wet installation, installation depth 4.5 m (guide wire installation) Consisting of: flanged duck foot bend, stainless steel anchor bolts, suspension bracket, mounting bracket, 10 m guide wire, claw with stainless steel screws/bolts, NOW WITHOUT CHAIN	Amarex N straight claw	DN 50, DN 3: DIN ISO ASME	39022196	13
			Amarex N inclined claw	DN 50, DN 3: DIN ISO ASME	39022200	18
			Amarex N	DN 65, DN 3: DIN ISO ASME	39020820	15
			Amarex N	DN 65/80, DN 3: DIN/ISO	39020834	19.1
			Amarex N	DN 65/80, DN 3: ASME	39020838	19.1
			Amarex N	DN 80, DN 3: DIN/ISO	39020988	35
			Amarex N	DN 80, DN 3: ASME	39020992	41
			Amarex N	DN 80/100, DIN ISO ASME	39021002	31.5
			Amarex N	DN 100, DIN ISO ASME	39021009	41
Single guide rail arrangement						
	P4 + P5	Installation parts for wet-installed stationary pump sets (single guide rail arrangement) for installation depth = 4.5 m Consisting of: flanged duckfoot bend, stainless steel anchor bolts, mounting bracket, claw with stainless steel screws/bolts, NOW WITHOUT CHAIN (guide rail not included in KSB's scope of supply)	Amarex N straight claw	DN 50, DN 3: DIN ISO ASME	39022204	12.5
			Amarex N inclined claw	DN 50, DN 3: DIN ISO ASME	39022207	18.5
			Amarex N	DN 65, DN 3: DIN ISO ASME	39021191	14.8
			Amarex N	DN 65/80, DN 3: DIN/ISO	39021194	18.7
			Amarex N	DN 65/80, DN 3: ASME	39021197	19.2
			Amarex N	DN 80, DN 3: DIN/ISO	39021200	26
			Amarex N	DN 80, DN 3: ASME	39021203	29.6
			Amarex N	DN 80/DN 100, DN 3: DIN ISO ASME	39021206	31
			Amarex N	DN 100, DN 3: DIN ISO ASME	39021209	26.8
Twin guide rail arrangement						
	P4 + P5	Installation parts for wet-installed stationary pump sets (twin guide rail arrangement) for installation depth = 4.5 m Consisting of: flanged duckfoot bend, stainless steel anchor bolts, mounting bracket, adapter, claw with stainless steel screws/bolts, NOW WITHOUT CHAIN (guide rails not included in KSB's scope of supply)	Amarex N inclined claw	DN 50, DN 3: DIN ISO ASME	39023002	14
			Amarex N straight claw	DN 65, DN 3: DIN ISO ASME	39023006	19.5
				DN 65/80, DN 3: DIN/ISO	39023009	22.8
				DN 65/80, DN 3: ASME	39023012	24.5
				DN 80, DN 3: DIN/ISO	39023018	32
				DN 80, DN 3: ASME	39023021	32
				DN 80/100, DN 3: DIN ISO ASME	39023024	34
				DN 100, DN 3: DIN ISO ASME	39023027	34

	Item	Description	Sizes	Connection/ installation depth	Mat. No.	[kg]
Claw						
	P5	Claw Amarex N JL 1040 with stainless steel bolts Guide hoop arrangement for DN 50 and DN 65; guide wire and single guide rail arrangement for all DN	Amarex N straight claw	DN 50	39022248	1.1
			Amarex N inclined claw	DN 50	39022252	7
			Amarex N	DN 65	39021018	1.9
			Amarex N	DN 80/DN 100	39021020	3.1
	P5	Claw for Amarex N JL 1040 with stainless steel screws/bolts Twin guide rails	Amarex N inclined claw	DN 50	39022990	6
			Amarex N straight claw	DN 65	39022993	7.3
				DN 80/DN 100	39022996	9.7
				DN 100	39022999	14.7
		Claw for Amarex JL1040 with stainless steel screws/bolts Guide wire, single guide rail, guide hoop arrangement	Amarex straight claw	DN 50	39021016	1.1
			Amarex inclined claw	DN 50	19551046	5
			Amarex	DN 65	39021018	1.9
				DN 80/DN 100	39021020	3.1
Lifting bail						
		Lifting bail made of stainless steel 1.4306 with A4-70 bolts, for lowering the pump set at an angle	Amarex N	DN 50	39022395	0.6
				DN 65/DN 80/DN 100	39018004	1
Conversion parts						
		Parts for conversion to twin guide rail arrangement, consisting of: mounting bracket, stainless steel screws/bolts, adapter, anchor bolts Note: required for conversion of guide hoop, guide wire or single guide rail arrangement to twin guide rail arrangement Note: for twin guide rail arrangements a claw is mandatory.		DN 50/DN 65	39022984	1.4
				DN 80/DN 100	39022987	2.5

Off-standard designs on request.

Installation parts for transportable pump sets

Overview of installation parts for transportable pump sets

	Item	Description	Sizes	Mat. No.	[kg]
	P6	3 feet	Amarex N DN 50, 65, 80, 100	39022260	0.4
		Footplate incl. bolts (only for uneven mounting surfaces and in combination with feet)	Amarex N DN 50, 65, 80, 100	39022262	0.9

Chain for stationary and transportable pump sets

Overview of chains for stationary and transportable pump sets

Item	Description		Sizes	Mat. No.	[kg]
P7	Chain (1.4404) short-linked, tested and duly labelled to Directive 2006/42/EC (Machinery Directive), hook (1.4307), shackle (1.4401) Maximum load: 160 kg	2 m	Amarex N DN 50, 65	39023811	1.2
		3 m	Amarex N DN 50, 65, 80, 100	39023812	1.6
		5 m	Amarex N DN 50, 65, 80, 100	39023813	2.4
		10 m	Amarex N DN 50, 65, 80, 100	39023814	4.4

Item	Description		Sizes	Mat. No.	[kg]
	Polypropylene lifting rope with shackle 1.4401 and hook 1.4571[22)]	5 m	Amarex N DN 50, 65, 80, 100	39021975	2.5
	Shackle 1.4401, straight type, with stainless steel screw bolt		Amarex N	01019282	0.1

Accessories for stationary and transportable pump sets

Overview of accessories for stationary and transportable pump sets

	Item	Description		Connection	Amarex N 50	Amarex N 65	Amarex N 80	Amarex N 100	Mat. No.	[kg]
	P8	Flange for pipe coupling PN 10, at the flanged elbow, mating dimensions to PN 16		DN 50/R2" pipe	✗	-	-	-	19551111	1.2
				DN 65/R2½" pipe	-	✗	-	-	39020184	1.2
	P9	PVC adapter for hose connection, with 1 hose clip, plastic hose of inner diameter 63 item 19		R2"	✗	-	-	-	11191498	0.3
	P13	Connection elbow with flange/hose connection made of JL 1040, grey cast iron PN 16, DIN 2501, including joint ring and hose clip; for DN 100 also with fixing bolts To be used for flange connections item 25 / item 26 (not for DN 100).		DN 65/B 75	-	✗	-	-	19135655	6
				DN 80/B 75	-	-	✗	-	19131746	6.6
				DN 100/A 110	-	-	-	✗	19139718	10
	P14	Elbow with external/internal thread (to be used for flange connections item 27 /item 30), galvanised grey cast iron		R2"	✗	-	-	-	00241966	0.3
		Connection elbow with flanges PN 16, DIN 2501 (to be used for flange connections item 25 / item 26), grey cast iron		DN 65/65	-	✗	-	-	00265480	11
				DN 65/80	-	✗	-	-	25198402	8
				DN 80/80	-	-	✗	-	11150856	10
				DN 100/100	-	-	-	✗	25145802	14.4
	P15	Storz rigid coupling with flange, to DIN 2501, drilled to PN 16 (to be used for flange connections item 25 / item 26), aluminium/steel		DN 65/B 75	-	✗	-	-	18040148	3.5
				DN 80/B 75	-	-	✗	-	18072642	3.5
				DN 100/A 110	-	-	-	✗	18060162	5
	P16	Storz hose coupling, aluminium alloy 2 hose clips, item 20, are required for hose mounting (for plastic hoses B 75 and A 110, item 19)		C 52 (DIN 14321)	✗	-	-	-	00524551	0.3
				B 75 (DIN 14322)	-	✗	✗	-	00520454	0.7
				A 110 (DIN 14323)	-	-	-	✗	00522313	1.5
	P17	Storz rigid coupling with external thread, DIN ISO 228/1		C 52/G 2 A	✗	-	-	-	00524370	0.2
				B 75 - G 2½	-	✗	-	-	00524371	0.4
	P18	Plastic hose DN 50, DIN 14811, with integrated C couplings		C 52-5 m	✗	-	-	-	00522262	2.3
				C 52-10 m	✗	-	-	-	00522263	4.2
				C 52-20 m	✗	-	-	-	00522264	5.7
	P19	Plastic hose Without coupling, DIN 14 811	Inside diameter 63	5 m	✗	-	-	-	39018688	1.7
				10 m	✗	-	-	-	39018689	3.4
				20 m	✗	-	-	-	39018690	6.8
			B 75	5 m	-	✗	✗	-	39019064	2
				20 m	-	✗	✗	-	39019066	8
				30 m	-	✗	✗	-	39019071	12
			Inside diameter 80	5 m	-	-	✗	-	39018691	2.2
				10 m	-	-	✗	-	39019062	4.3
			A 110	5 m	-	-	-	✗	39019067	4.7
				10 m	-	-	-	✗	39019068	9.3
				30 m	-	-	-	✗	39019070	27.9

22) Increase quantity for larger installation depths.

	Item	Description	Connection	Amarex N 50	65	80	100	Mat. No.	[kg]
	P20	Hose clip DIN 3017, chrome steel	B 50[23]	✗	-	-	-	39000515	0.025
			B 75	-	✗	✗	-	00109515	0.04
			AL 110 - 120 B[24]	-	-	-	✗	00520853	0.1
	P21	RK swing check valve Plastic, EN 12 050-4, with internal thread ISO 7/1, full port and drain plug; cannot be used for pumped drainage	Rp 2	✗	-	-	-	01009773	0.5
	P22	Socket gate valve CuZn PN 10-12 DIN 3352	Rp 2	✗	-	-	-	00411503	1.1
			Rp 2½	-	✗	-	-	39000507	1.7
	P23	KSB swing check valve, grey cast iron With full port, backwash device, flanges drilled to DIN 2501, PN 16 (not for lifting units)	DN 65	-	✗	-	-	48829253	16.2
			DN 80	-	-	✗	-	48829254	21.5
			DN 100	-	-	-	✗	48829255	29
	P24	ECOLINE GTR-16P gate valve, grey cast iron, PN 16, flanges drilled to ISO 7005/DIN 2501	DN 65	-	✗	-	-	49709579	15
			DN 80	-	-	✗	-	49709580	22
			DN 100	-	-	-	✗	49709581	26.5
	P25	Set of installation accessories for a flange connection, discharge nozzle; item 13, 14 or 15 Consisting of: 4 hexagon head bolts with nuts and 1 sealing element		✗	-	-	-	39021944	0.8
				-	✗	-	-	19551115	0.8
				-	-	✗	-	19551100	0.8
				-	-	-	✗	19551113	0.8
	P26	Set of installation accessories for a flange connection, Consisting of: 8 hexagon head bolts with nuts and 1 sealing element		-	-	✗	-	19551114	0.8
				-	-	-	✗	19551116	0.8
	P27	Threaded flange for guide hoop arrangement (P2) and guide wire arrangement (P4) Consisting of: flange, 4 hexagon head bolts with nuts and discs, and 1 sealing element	DN 50/Rp 2	✗	-	-	-	19551353	2
			DN 65/Rp 2½	-	✗	-	-	39021943	2.9
	P28	Hand pump, wall mounting, grey cast iron, suction-side connection Rp 1½		✗	✗	✗	✗	00520485	12
	P30	Adapter with reduced external thread M4 EN 1042K	2 x 1¼	-	-	-	-	01135663	0.4

23) For plastic hose Ø 63 item 19
24) 2 units required

Electrical accessories

Control units for Amarex N without ATEX

Valid for all countries except France.
Control units for Amarex N without ATEX

Item	Description	Power min [A]	Power max [A]	Type	Mat. No.	[kg]
E 4	Multi-functional plug, type Hyper, with motor protection relay CEE plug	2,6	3,7	Hyper 37.1	19071492	1
		3,7	5,5	Hyper 55.1	19071493	1
		5,5	8,0	Hyper 80.1	19071494	1
		8,0	11,5	Hyper 115.1	19071495	1
	LevelControl Basic 2 control unit for single-pump station					
E 11	For float switch or 4...20 mA sensor, optional with master switch, 400 x 278 x 120 mm	2,5	4,0	BC1 400 DFNO 040	19073763	4.5
		4,0	6,3	BC1 400 DFNO 063	19073764	4.5
		6,3	10,0	BC1 400 DFNO 100	19073765	4.5
E 14	Pneumatic, optional master switch, 400 x 278 x 120 mm	2,5	4,0	BC1 400 DPNO 040	19073768	4.5
		4,0	6,3	BC1 400 DPNO 063	19073769	4.5
		6,3	10,0	BC1 400 DPNO 100	19073770	4.5
E 17	Bubbler control, with master switch, 400 x 300 x 155 mm	2,5	4,0	BS1 400 DLNO 040	19073818	12
		4,0	6,3	BS1 400 DLNO 063	19073819	12
		6,3	10,0	BS1 400 DLNO 100	19073820	12
E 19	Bubbler control in BC variant, 400 x 278 x 120 mm Only to be used for connections with neutral conductor! Installation option O1 (master switch) not possible! 400 x 278 x 120 mm	2,5	4,0	BC1 400 DLNO 040	19075148	4.5
		4,0	6,3	BC1 400 DLNO 063	19075149	4.5
		6,3	10,0	BC1 400 DLNO 100	19075150	4.5
	LevelControl Basic 2 control unit for dual-pump stations					
E 31	For float switch or 4...20 mA sensor, optional master switch, 400 x 278 x 120 mm	2,5	4,0	BC2 400 DFNO 040	19073777	4.7
		4,0	6,3	BC2 400 DFNO 063	19073778	4.7
		6,3	10,0	BC2 400 DFNO 100	19073779	4.7
E 34	Pneumatic, optional master switch, 400 x 278 x 120 mm	2,5	4,0	BC2 400 DPNO 040	19073782	4.7
		4,0	6,3	BC2 400 DPNO 063	19073783	4.7
		6,3	10,0	BC2 400 DPNO 100	19073784	4.7
E 37	Bubbler control, with master switch, 400 x 300 x 155 mm	2,5	4,0	BS2 400 DLNO 040	19073860	13
		4,0	6,3	BS2 400 DLNO 063	19073861	13
		6,3	10,0	BS2 400 DLNO 100	19073862	13
E 39	Bubbler control for BC version Only to be used for connections with neutral conductor! Installation option O1 (master switch) not possible! 400 x 278 x 120 mm	2,5	4,0	BC2 400 DLNO 040	19075151	4.7
		4,0	6,3	BC2 400 DLNO 063	19075152	4.7
		6,3	10,0	BC2 400 DLNO 100	19075153	4.7

Only valid for France!
Control units for Amarex N without ATEX

Item	Description	Power min [A]	Power max [A]	Type	Mat. No.	[kg]
E 4	Multi-functional plug, type Hyper, with motor protection relay CEE plug	2,6	3,7	Hyper 37.1	19071492	1
		3,7	5,5	Hyper 55.1	19071493	1
		5,5	8,0	Hyper 80.1	19071494	1
		8,0	11,5	Hyper 115.1	19071495	1
	LevelControl Basic 2 control unit for single-pump stations					
E11	For float switch or 4...20 mA sensor, with master switch, 400 x 278 x 120 mm	2,5	4,0	BC1 400 DFNO 040 02	19073878	4.5
		4,0	6,0	BC1 400 DFNO 063 02	19073879	4.5
		6,0	10,0	BC1 400 DFNO 100 02	19073880	4.5
E14	Pneumatic, with master switch, 400 x 278 x 120 mm	2,5	4,0	BC1 400 DPNO 040 02	[25]	[25]
		4,0	6,3	BC1 400 DPNO 063 02	[25]	[25]
		6,3	10,0	BC1 400 DPNO 100 02	[25]	[25]
E17	Bubbler control, with master switch, 400 x 300 x 155 mm	2,5	4,0	BS1 400 DLNO 040 02	[25]	[25]

25) See KSB Easy Select

Item	Description	Power min [A]	Power max [A]	Type	Mat. No.	[kg]
		4,0	6,3	BS1 400 $^{\text{DLNO}}$ 063 02	[25]	[25]
		6,3	10,0	BS1 400 $^{\text{DLNO}}$ 100 02	[25]	[25]
	LevelControl Basic 2 control unit for dual-pump stations					
E11	For float switch or 4...20 mA sensor, with master switch, 400 x 278 x 120 mm	2,5	4,0	BC2 400 $^{\text{DFNO}}$ 040 02	19073888	4.7
		4,0	6,3	BC2 400 $^{\text{DFNO}}$ 063 02	19073889	4.7
		6,0	10,0	BC2 400 $^{\text{DFNO}}$ 100 02	19073890	4.7
E14	Pneumatic, with master switch, 400 x 278 x 120 mm	2,5	4,0	BC2 400 $^{\text{DPNO}}$ 040 02	[25]	[25]
		4,0	6,3	BC2 400 $^{\text{DPNO}}$ 063 02	[25]	[25]
		6,3	10,0	BC2 400 $^{\text{DPNO}}$ 100 02	[25]	[25]
E17	Bubbler control, with master switch, 400 x 300 x 155 mm	2,5	4,0	BS2 400 $^{\text{DLNO}}$ 040 02	[25]	[25]
		4,0	6,3	BS2 400 $^{\text{DLNO}}$ 063 02	[25]	[25]
		6,3	10,0	BS2 400 $^{\text{DLNO}}$ 100 02	[25]	[25]

Alarm switchgears for Amarex N without ATEX

Overview of alarm switchgears for Amarex N without ATEX

Item	Description	Mat. No.	[kg]
E 50	AS 0Buzzer/switching input	29128401	0.5
E 51	AS 2Buzzer/switching input, mains-dependent with volt-free signalling contact	29128422	0.5
E 52	AS 4Buzzer/switching input, mains-independent (battery-backed) with volt-free signalling contact and self-charging power supply unit (for 5 hours' operation in the event of power failure)	29128442	0.5
E 53	AS 5Alarm equipment (e.g. horn), volt-free contact/battery buffer	00530561	1.7
E 55	AS 1Buzzer/moisture sensor	00533740	0.9

Control unit accessories for Amarex N without ATEX

Overview of control unit accessories for Amarex N without ATEX

	Item	Description		Mat. No.	[kg]
	E 60	Float switch with free cable end (NO contact)	3 m	11037742	0.5
		Switch housing made of polypropylene (max. fluid temperature 70 °C), circuit closed in upper float position, connection cable (H 07 RN-F3G1)	5 m	11037743	0.8
			10 m	11037744	1.3
			15 m	11037745	1.8
			20 m	11037746	2.4
			25 m	11037747	2.9
			30 m	11037748	3.4
	E 62	Float switch with free cable end (NC contact), circuit open in upper float position,connection cable (H 07 RN-F3G1)	5 m	11037756	0.8
			10 m	11037757	1.4
			20 m	11037758	2.6
	E 64	Leakage sensor F 1	3 m	19072366	0.2
	E65	Open pressure bell set - pneumatic and bubbler control with polyamide tube 8 x 1 mm	Tube length 10 m	19071721	1.2
			Tube length 20 m	19071837	2
			Tube length 50 m	19074200	2.5
	E66	Closed pressure bell set - pneumatic with polyamide tube 8 x 3 mm	Tube length 10 m	19071722	3.5
			Tube length > 10 m		
	E70	Horn, 12 V DC, 105 dB(A), 1.2 W		01086547	0.1
	E71	Alarm combination, 12 V DC		01139930	0.1
	E72	Alarm strobe light, 12 V DC		01056355	0.3
	E73	PC service tool		47121210	0.2
	E90	Rechargeable battery retrofit kit for LevelControl Basic 2, for powering the electronics, the float switches or internal pressure sensor and the alarm equipment (buzzer, horn, alarm combination), for single-pump and dual-pump stations	For type BC, consisting of 2 rechargeable batteries 6 V, 1.3 Ah and charging unit	19074194	0.8
	E91		For type BS, consisting of 1 rechargeable battery 12 V, 1.2 Ah and charging unit	19074199	1

Control units for Amarex N with ATEX

The control units are not explosion-proof, which means that they must not be operated in potentially explosive atmospheres.

For ATEX-compliant variants, intrinsic safety barriers and an ATEX level switch (float switch) must be fitted. Selection via KSB EasySelect.

Valid for all countries except France.
Control unit accessories for Amarex N with ATEX

Item	Description	Power min [A]	Power max [A]	Type	Mat. No.	[kg]
	LevelControl Basic 2 control unit for single-pump stations					
E 20	Float switch, with master switch, 600 x 400 x 200 mm	2,5	4,0	BS1 400 DFEO 040	19073800	12
		4,0	6,3	BS1 400 DFEO 063	19073801	12
		6,3	10,0	BS1 400 DFEO 100	19073802	12
E 21	Pneumatic, optional master switch, 400 x 278 x 120 mm	2,5	4,0	BC1 400 DPEO 040	19073771	4.5
		4,0	6,3	BC1 400 DPEO 063	19073772	4.5
		6,3	10,0	BC1 400 DPEO 100	19073773	4.5
E 23	Bubbler control, with master switch, 400 x 300 x 155 mm	2,5	4,0	BS1 400 DLEO 040	19073821	12
		4,0	6,3	BS1 400 DLEO 063	19073822	12
		6,3	10,0	BS1 400 DLEO 100	19073823	12
E 24	Bubbler control for BC version Only to be used for connections with neutral conductor! Installation option O1 (master switch) not possible! 400 x 278 x 120 mm	2,5	4,0	BC1 400 DLEO 040	19075154	4.5
		4,0	6,3	BC1 400 DLEO 063	19075155	4.5
		6,3	10,0	BC1 400 DLEO 100	19075156	4.5
	LevelControl Basic 2 control unit for dual-pump stations					
E 40	Float switch, with master switch, 600 x 400 x 200 mm	2,5	4,0	BS2 400 DFEO 040	19073842	13
		4,0	6,3	BS2 400 DFEO 063	19073843	13
		6,3	10,0	BS2 400 DFEO 100	19073844	13
E 41	Pneumatic, optional master switch, 400 x 278 x 120 mm	2,5	4,0	BC2 400 DPEO 040	19073785	4.7
		4,0	6,3	BC2 400 DPEO 063	19073786	4.7
		6,3	10,0	BC2 400 DPEO 100	19073787	4.7
E 43	Bubbler control, with master switch, 400 x 300 x 155 mm	2,5	4,0	BS2 400 DLEO 040	19073863	13
		4,0	6,3	BS2 400 DLEO 063	19073864	13
		6,3	10,0	BS2 400 DLEO 100	19073865	13
E 44	Bubbler control for BC version Only to be used for connections with neutral conductor! Installation option O1 (master switch) not possible! 400 x 278 x 120 mm	2,5	4,0	BC2 400 DLEO 040	19075157	4.7
		4,0	6,3	BC2 400 DLEO 063	19075158	4.7
		6,3	10,0	BC2 400 DLEO 100	19075159	4.7

Only valid for France!
Control unit accessories for Amarex N with ATEX

Item	Description	Power min [A]	Power max [A]	Type	Mat. No.	[kg]
	LevelControl Basic 2 control unit for single-pump stations					
E20	Float switch, with master switch, 600 x 400 x 200 mm	2,5	4,0	BS1 400 DFEO 040 02	26)	26)
		4,0	6,3	BS1 400 DFEO 063 02	26)	26)
		6,3	10,0	BS1 400 DFEO 100 02	26)	26)
E21	Pneumatic, with master switch, 400 x 278 x 120 mm	2,5	4,0	BC1 400 DPEO 040 02	26)	26)
		4,0	6,3	BC1 400 DPEO 063 02	26)	26)
		6,3	10,0	BC1 400 DPEO 100 02	26)	26)
E23	Bubbler control, with master switch, 400 x 300 x 155 mm	2,5	4,0	BS1 400 DLEO 040 02	26)	26)
		4,0	6,3	BS1 400 DLEO 063 02	26)	26)
		6,3	10,0	BS1 400 DLEO 100 02	26)	26)
	LevelControl Basic 2 control unit for dual-pump stations					
E40	Float switch, with master switch, 600 x 400 x 200 mm	2,5	4,0	BS2 400 DFEO 040 02	26)	26)
		4,0	6,3	BS2 400 DFEO 063 02	26)	26)

26) See KSB Easy Select

Item	Description	Power min [A]	Power max [A]	Type	Mat. No.	[kg]
		6,3	10,0	BS2 400 DFEO 100 02	26)	26)
41	Pneumatic, with master switch, 400 x 278 x 120 mm	2,5	4,0	BC2 400 DPEO 040 02	26)	26)
		4,0	6,3	BC2 400 DPEO 063 02	26)	26)
		6,3	10,0	BC2 400 DPEO 100 02	26)	26)
E43	Bubbler control, with master switch, 400 x 300 x 155 mm	2,5	4,0	BS2 400 DLEO 040 02	26)	26)
		4,0	6,3	BS2 400 DLEO 063 02	26)	26)
		6,3	10,0	BS2 400 DLEO 100 02	26)	26)

Control unit accessories for Amarex N with ATEX

Overview of accessories for Amarex N with ATEX

	Item	Description		Mat. No.	[kg]
	E 63	Float switch with free cable end (NO contact) With declaration of compliance with explosion protection standards Power cable (H 07 RN-F3G1)	5 m	01148226	0.7
			10 m	01148247	1
			20 m	01148248	2
	E65	Open pressure bell set - pneumatic and bubbler control with polyamide tube 8 x 1 mm	Tube length 10 m	19071721	1.2
			Tube length 20 m	19071837	2
			Tube length 50 m	19074200	2.5
	E66	Closed pressure bell set - pneumatic with polyamide tube 8 x 3 mm	Tube length 10 m	19071722	3.5
			Tube length > 10 m		
	E70	Horn, 12 V DC, 105 dB(A), 1.2 W, not explosion-proof		01086547	0.1
	E71	Alarm combination, 12 V DC, not explosion-proof		01139930	0.1
	E72	Alarm strobe light, 12 V DC, not explosion-proof		01056355	0.3
	E73	PC service tool		47121210	0.2
	E90	Rechargeable battery retrofit kit for LevelControl Basic 2, for powering the electronics, the float switches or internal pressure sensor and the alarm equipment (buzzer, horn, alarm combination), for single-pump and dual-pump stations	For type BC, consisting of 2 rechargeable batteries 6 V, 1.3 Ah and charging unit	19074194	0.8
	E91		For type BS, consisting of 1 rechargeable battery 12 V, 1.2 Ah and charging unit	19074199	1

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