Submersible Motor Pump

Amarex N

60 Hz
DN 2" - DN 4" [DN 50 - DN 100]

Type Series Booklet

Legal information/Copyright

Type Series Booklet Amarex N

Contents

Waste Water

Submersible Motor Pump

Amarex N

Main applications

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

Fluids handled

- Service water
- Gray water
- Sewage containing feces
- Waste water containing long fibers and solid substances
- Fluids containing gas
- Activated sludge
- Digested sludge
- Raw sludge

Operating data

Operating properties

Characteristic		Value
Flow rate	Q [US.gpm]	≤ 660
	Q [m³/h]	≤ 150
Head	H [ft]	≤ 154
	H [m]	≤ 47
Fluid temperature	T [°F]	≤ +104
		≤ +176[1)]
	T [°C]	≤ +40
		≤ +80[1)]
Motor rating	P_2 [hp]	1,1 - 5

Designation

Example: Amarex N F 80-220 / 04 4 YL G-180

Designation key

Code	Description	
Amarex N	Type series	
F	Impeller type	
	F	Free-flow impeller
	S	Cutter
80-220	Size of hydraulic system	
04	Motor size	
4	Number of motor poles	
	2	2 poles
	4	4 poles
YL	Motor version	
	YL[2)]	Explosion-proof, for fluid temperatures of up to 104 °F [40 °C]
	WL	Non-explosion-proof, for fluid temperatures of up to 140 °F [60 °C]

1) Version WL: for short periods (3 - 5 minutes or until the temperature sensors trip)
2) In countries stipulating explosion-proof units for handling waste water with feces, motor version YL must be used.

Code	Description	
G	Material variant	
	G	Pump casing: gray cast iron A48 Class 40B Intermediate casing: gray cast iron A48 Class 40B Impeller: gray cast iron A48 Class 40B
	G1	Pump casing: gray cast iron A48 Class 40B Intermediate casing: gray cast iron A48 Class 40B Impeller: Noridur (duplex stainless steel): A743 CD4 MCU
	G2	Pump casing: gray cast iron A48 Class 40B Intermediate casing: gray cast iron A48 Class 40B Impeller: Norihard (white cast iron): A532 II C15% CrMo-Hc
	GH	Pump casing: gray cast iron A48 Class 40B Intermediate casing: Norihard (white cast iron): A532 II C15% CrMo-Hc Impeller: Norihard (white cast iron): A532 II C15% CrMo-Hc
180	Nominal impeller diameter [mm]	

Design details

Design

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

Drive

- Three-phase asynchronous squirrel-cage motor
- Motors integrated in explosion-proof pump sets are supplied in Explosionproof Class I Division 1, Groups C&D, T3.

Shaft seal

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

Impeller type

- Various application-oriented impeller types (⇨ Page 8)

Bearings

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

Materials

Overview for material variant G

Component		S impeller	F impeller
		Amarex N S 50-170/... Amarex N S 50-220/...	**Amarex N F 50-220 Amarex N F 65-170 Amarex N F 65-220 Amarex N F 80-220 Amarex N F 100-220**
		G	**G**
Casing		A48 Class 40B	A48 Class 40B
Intermediate casing		A48 Class 40B	A48 Class 40B
Impeller		A48 Class 40B	A48 Class 40B
Cutter		D3 (X210 Cr12)[3]	-
Shaft		A 276 Type 420	A 276 Type 420
Mechanical seal	Drive end	Carbon/Al_2O_3	Carbon/Al_2O_3
	Pump end	SiC/SiC	SiC/SiC
Screws/bolts		A 276 Type 304	A 276 Type 304
Elastomer seals		NBR	NBR

3) High-alloy tool steel
4) Noridur (duplex stainless steel)
5) Norihard (white cast iron)
6) Optional: FPM

Overview for material variants G1, G2, GH

Component		F impeller		
		Amarex N F 50-220 Amarex N F 65-170 Amarex N F 65-220 Amarex N F 80-220 Amarex N F 100-220		
		G1	G2	GH
Casing		A48 Class 40B	A48 Class 40B	A48 Class 40B
Intermediate casing		A48 Class 40B	A48 Class 40B	A532 II C15% CrMo-Hc
Impeller		A743 CD4 MCU[4)]	A532 II C15% CrMo-Hc[5)]	A532 II C15% CrMo-Hc[5)]
Shaft		A 276 Type 420	A 276 Type 420	A 276 Type 420
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		A 276 Type 304	A 276 Type 304	A 276 Type 304
Elastomer seals		NBR[6)]	NBR[6)]	NBR[6)]

Product benefits

- Easy and fast to connect with polarized, absolutely watertight cable entry and KSB plug-type connection for correct installation
- Motor tightly sealed by an absolutely watertight cable entry with individually stripped, tinned and resin-sealed conductors offering multiple protection even in the event of damage to the cable sheath and insulation
- High operating reliability thanks to optimum motor rating for duty cycle S1, thermal class F, explosion-proof version in FM/CSA Explosion-proof Class I, Division 1, Groups C & D, T4
- Long service life with shaft made of corrosion-resistant stainless steel
- Maintenance-free, ideal continuous-duty pumps with long-life bearings sealed on both sides, lubricated for life
- Environmentally friendly, non-toxic, food-approved oil fill for mechanical seal lubrication (liquid reservoir)
- Energy savings by optimized hydraulic system and high efficiency
- Reliable and non-clogging thanks to optimized cutter (S impeller)
- Close-coupled pump design prevents risk of leakage (pump volute casing and motor housing cast in one single piece)
- Easy installation and removal of pumps for stationary installation with automatic, bolt-free connection; leakage prevented by flexible sealing elements
- Ease of service as the wetted hexagon socket head cap screws made of stainless steel are easy to remove, even after years of operation.
- Double safety by two bi-directional mechanical seals with oil chamber filled with environmentally friendly oil
- Installation of a mechanical seal with covered spring for abrasive and aggressive fluids possible without any problems
- One spare parts set fits all sizes thanks to modular design system.

Overview of product features / selection tables

Product overview

Material variant G

Size	S impeller	F impeller
	Amarex N S 50-...	Amarex N F 50-... Amarex N F 65-... Amarex N F 80-... Amarex N F 100-...
Number of motor poles		
2-pole	50-170/... 50-220/...	50-170/... 50-220/... 65-170/...
4-pole	-	65-220/... 80-220/... 100-220/...
Explosion protection		
Motor version YL[7)]	FM APPROVED or Explosion-proof Class I, Division 1, Groups C & D	
Motor version WL	Not explosion-proof	

7) In countries stipulating explosion-proof units for handling sewage with feces, use motor version YL.

Size	S impeller	F impeller
	Amarex N S 50-...	**Amarex N F 50-...** **Amarex N F 65-...** **Amarex N F 80-...** **Amarex N F 100-...**
Motor[8]		
Starting method	DOL[9]	
Electrical voltage	208 V[10], 230 V[10], 380 V[10], 460 V[10], 575 V[11]	
Cooling	Cooled by surrounding fluid	
Duty cycle	S1 – submerged (max. 85 ft [25 m]) (see [2] in outline drawing) S3 – outside the fluid (see [1] and RS in the outline drawing))	
Power cable[12]		
Type	Rubber-sheathed cable AWG 15-8 (8 x 1.5 mm^2)	
Length	Canada: 30 ft [10 m], USA: 50 ft [15 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) and limiting circuit (temperature limit for explosion protection without automatic reset): bimetal switch to be connected directly to a KSB PumpSafe Relay or a similar device.	
Winding temperature version WL	Temperature monitoring circuit (with automatic reset and start-up): bimetal switch to be connected directly to a KSB PumpSafe Relay or a similar device.	
Leakage sensor	Leakage sensor in the motor space[13]	
Coating	Environmentally friendly KSB top coat (two-component epoxy paint), color RAL 5002, film thickness = 3.15 mils [80 µm]	
Installation	(⇨ Page 26)	
Maximum fluid temperature		
Motor version YL	104 °F [40 °C]	
Motor version WL	140 °F [60 °C]	

Material variants G, G1, G2 and GH

Size	S impeller	F impeller		
	Amarex N S 50-170/... **Amarex N S 50-220/...**	**Amarex N F 50-...** **Amarex N F 65-...** **Amarex N F 80-...** **Amarex N F 100-...**		
Material variant	**G**	**G1**	**G2**	**GH**
Number of motor poles				
2-pole	-	50-170/... 50-220/... 65-170/...		
4-pole	-	65-220/... 80-220/... 100-220/...		
Suction flange				
Drilled to ASME 150 lb (ANSI B16.5)	-	✗		
Sealing elements				
Elastomer seals: O-rings and gaskets made of Viton, lower mechanical seal with Viton joint rings	✗	✗		

8) All motors have a service factor of 1.15. All motors are suitable for frequency inverter operation. Rated supply voltage +/- 10 % to NEMA standards.
9) Maximum switching frequency: 30 starts per hour
10) FM approved
11) CSA
12) Class F insulation system. Cables selected to NEC standards.
13) 8-core power cable required

Size	S impeller	F impeller		
	Amarex N S 50-170/... Amarex N S 50-220/...	Amarex N F 50-... Amarex N F 65-... Amarex N F 80-... Amarex N F 100-...		
Material variant	**G**	**G1**	**G2**	**GH**
Shaft seal: special mechanical seal (mechanical seal with covered spring – HJ977)[14]	✗		✗	
Power cables				
Standard rubber-sheathed cable AWG 15-8 (S1BN8-F 8G1.5); for pumps with leakage sensor; for version YLG, WLG[15]	✗		✗	
Shielded rubber-sheathed cable AWG 15-8 (S07RC4N8-F 8G1.5)[16] for a pump with or without leakage sensor, for versions YLG and WLG operated on a frequency inverter[17]	✗		✗	
Coating	Environmentally friendly KSB standard coating (two-component epoxy paint), color RAL 5002, film thickness = 11.81 mils [300 µm]			
Installation	(⇨ Page 26)			

Impellers

	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 entrapped gas

F impellers are suitable for handling the following fluids:

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

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

S impellers are suitable for handling the following fluids:

- Domestic waste water
- Gray water
- Sewage containing feces

14) Seal faces made of silicon carbide/silicon carbide, sealing elements made of Viton, springs and metal parts made of stainless steel, O-rings and gaskets made of Viton (FPM)
15) Available total lengths 50 ft [15 m]/65 ft [20 m]/98 ft [30 m]/ 130 ft [40 m]/164 ft [50 m]
16) Available total lengths 30 ft [10 m]/50 ft [15 m]/65 ft [20 m]/98 ft [30 m]/ 130 ft [40 m]/164 ft [50 m]
17) The percentage of submersible motor pumps operated on frequency inverters is on the increase. If pump set is operated on a frequency inverter, high frequency interference signals occur in the area of the motor power cables. The electric cables between the motor and frequency inverter can act like a transmitting antenna. In accordance with European Directive 2014/30/EU these electromagnetic interferences must be limited. The frequency inverter must therefore be equipped with a suitable output filter and/or the electric cables between frequency inverter and motor have to be shielded. Therefore the use of shielded electric cables is often demanded for submersible motor pumps operated on frequency inverters.

Overview 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 expertise when selecting materials.

Selection aid for materials and hydraulic systems per fluid

Fluid handled[18]	Recommended material	Recommended impeller type[19]	Comments, further recommendations
Gray water	A48 Class 40B	F, S	Free passage > any solids contained, possibly pre-screened
River water	A48 Class 40B	F	Free passage > any solids contained, possibly pre-screened
Contaminated surface water	A48 Class 40B	F	Free passage > any solids contained, possibly pre-screened
Waste water			
▪ Untreated municipal waste water	A48 Class 40B	F, S	ATV[20] recommends a free passage of 4" [100 mm], min. free passage of 3" [76 mm]
▪ Waste water containing air or gas	A48 Class 40B	F	Up to 8 %, contact KSB for fluids with high outgassing rates
▪ Raw waste water	A48 Class 40B	F	ATV[20] recommends a free passage of 4" [100 mm], min. free passage of 3" [76 mm]
▪ Mixed water	A48 Class 40B	F	Free passage > any solids contained, possibly pre-screened
▪ Waste water or gray water containing long fibers	A48 Class 40B	F, S	Free passage > any solids contained, possibly pre-screened
▪ Highly abrasive waste water causing wear (chemically neutral)	Norihard (white cast iron): A532 II C15 % CrMo-Hc	F	For a solids content < 5 g/l: G2, GH variant
▪ Corrosive waste water	Noridur (duplex stainless steel): A743 CD4 MCU	F	G1 variant, depending on fluid analysis
Sludge			
▪ Raw sludge	A48 Class 40B	F	Pumpable up to a dry substance content of: 8 % (F)
▪ Digested sludge	A48 Class 40B	F	Pumpable up to a dry substance content of: 8 % (F)
▪ Activated sludge	A48 Class 40B	F	Pumpable up to a dry substance content of: 8 % (F)
Industrial waste water containing ...			
▪ Paint suspensions	A48 Class 40B	F	Solvent-free, observe the operator's instructions.
▪ Lacquer/paint/varnish suspensions	A48 Class 40B	F	Solvent-free, contact KSB to handle silicone-free fluids.
▪ Fibers/pulp	A48 Class 40B	F, S	
▪ Chips/swarf	Norihard (white cast iron): A532 II C15 % CrMo-Hc	F	G2 or GH variant, special mechanical seal, solids content < 5 g/l
▪ Abrasive substances[21]	Norihard (white cast iron): A532 II C15 % CrMo-Hc	F	G2 or GH variant, special mechanical seal, solids content < 5 g/l
Mildly acidic industrial waste water	A48 Class 40B	F	pH ≥ 6.5: material variant G1 and FPM (Viton) O-rings
Neutral non-corrosive waste water			
▪ Ammonium hydroxide	A48 Class 40B	F	
▪ Ammonium hydroxide 5 % NH_4OH	A48 Class 40B	F	

19) The first impeller type listed should be given preference.
18) For any fluids which are not listed in this table contact KSB.
20) ATV = German regulatory body for waste water management
21) Severe hydroabrasive wear occurs if solids contents of 0.5 g/l or higher are combined with circumferential speeds exceeding > 66 ft/s [20 m/s] or low flow conditions to the left of the operating point.

Fluid handled[19]	Recommended material	Recommended impeller type[19]	Comments, further recommendations
▪ Urea 25 % $(NH_2)_2$-CO	A48 Class 40B	F	
▪ Potassium hydroxide 10 % KOH	A48 Class 40B	F	
▪ Calcium hydroxide 5 % $Ca(OH)_2$	A48 Class 40B	F	
▪ Sodium hydroxide 5 % NaOH	A48 Class 40B	F	
▪ Sodium carbonate 30 % Na_2CO_3	A48 Class 40B	F	
Neutral, non-corrosive waste water containing ...			
▪ Aliphatic hydrocarbons (e.g. oils, petrol, butane, methane)	A48 Class 40B	F	FPM (Viton) O-rings, TEHSITE cable; for high concentrations contact KSB.
▪ Aromatic hydrocarbons (e.g. benzene, styrene)	A48 Class 40B	F	FPM (Viton) O-rings, TEHSITE cable; for high concentrations contact KSB.
▪ Chlorinated hydrocarbons (e.g. tetrachloroethylene, ethylene chloride, chloroform, methylene chloride)	A48 Class 40B	F	FPM (Viton) O-rings, TEHSITE cable; for high concentrations contact KSB.
Highly abrasive industrial waste water causing wear (chemically neutral)[22]			
▪ Water containing iron ore sinter	Norihard (white cast iron): A532 II C15 % CrMo-Hc	F	For sinter contents < 5 g/l, material variant GH
▪ Lime milk containing quartz and pigment suspensions	Norihard (white cast iron): A532 II C15 % CrMo-Hc	F	Lime milk of up to 15 %, material variant GH
▪ Water/sand mixture	Norihard (white cast iron): A532 II C15 % CrMo-Hc	F	Up to 5 g/l solids content, material variant GH

22) The required materials highly depend on the operating hours, speed and flow velocity.

Technical data

Technical data 3~ 575 V. material variant G

Size	Impeller diameter	Motor version	P_1	P_N	I_N	I_A	T[23)]	[lbs]	Mat. No.
			[hp]	[hp]	[A]	[A]	[°F]		
S 50-170/012	100	YL	3.6	2.55	3.6	25	104	86	-
S 50-170/012	100	WL	3.6	2.55	3.6	25	140	86	-
S 50-170/012	110	YL	3.6	2.55	3.6	25	104	86	-
S 50-170/012	110	WL	3.6	2.55	3.6	25	140	86	-
S 50-170/022	120	YL	4.3	3.10	4.0	25	104	86	-
S 50-170/022	120	WL	4.3	3.10	4.0	25	140	86	-
S 50-170/022	130	YL	4.3	3.10	4.0	25	104	86	-
S 50-170/022	130	WL	4.3	3.10	4.0	25	140	86	-
S 50-220/042	130	YL	6.4	5.00	5.5	72	104	119	-
S 50-220/042	130	WL	6.4	5.00	5.5	72	140	119	-
S 50-220/042	140	YL	6.4	5.00	5.5	72	104	119	-
S 50-220/042	140	WL	6.4	5.00	5.5	72	140	119	-
S 50-220/042	150	YL	6.4	5.00	5.5	72	104	119	-
S 50-220/042	150	WL	6.4	5.00	5.5	72	140	119	-
S 50-220/042	158	YL	6.4	5.00	5.5	72	104	119	-
S 50-220/042	158	WL	6.4	5.00	5.5	72	140	119	-
F 50-170/002	90	YL	2.6	1.70	2.9	25	104	90	-
F 50-170/002	90	WL	2.6	1.70	2.9	25	140	90	-
F 50-170/022	107	YL	4.3	3.10	4.0	25	104	90	-
F 50-170/022	107	WL	4.3	3.10	4.0	25	140	90	-
F 50-220/032	110	YL	4.7	3.70	4.4	72	104	112	-
F 50-220/032	110	WL	4.7	3.70	4.4	72	140	112	-
F 50-220/042	120	YL	6.4	5.00	5.5	72	104	112	-
F 50-220/042	120	WL	6.4	5.00	5.5	72	140	112	-
F 50-220/042	130	YL	6.4	5.00	5.5	72	104	114	-
F 50-220/042	130	WL	6.4	5.00	5.5	72	140	114	-
F 50-220/042	140	YL	6.4	5.00	5.5	72	104	114	-
F 50-220/042	140	WL	6.4	5.00	5.5	72	140	114	-
F 65-170/032	112	YL	4.7	3.70	4.4	72	104	128	-
F 65-170/032	112	WL	4.7	3.70	4.4	72	140	128	-
F 65-170/042	120	YL	6.4	5.00	5.5	72	104	128	-
F 65-170/042	120	WL	6.4	5.00	5.5	72	140	128	-
F 65-170/042	128	YL	6.4	5.00	5.5	72	104	128	-
F 65-170/042	128	WL	6.4	5.00	5.5	72	140	128	-
F 65-220/004	135	YL	1.9	1.10	2.5	16	104	108	-
F 65-220/004	135	WL	1.9	1.10	2.5	16	140	108	-
F 65-220/014	145	YL	2.7	1.70	2.8	16	104	108	-
F 65-220/014	145	WL	2.7	1.70	2.8	16	140	108	-
F 65-220/014	155	YL	2.7	1.70	2.8	16	104	108	-
F 65-220/014	155	WL	2.7	1.70	2.8	16	140	108	-
F 65-220/024	165	YL	3.7	2.40	3.4	16	104	110	-
F 65-220/024	165	WL	3.7	2.40	3.4	16	140	110	-
F 65-220/024	175	YL	3.7	2.40	3.4	16	104	110	-
F 65-220/024	175	WL	3.7	2.40	3.4	16	140	110	-
F 80-220/034	120	YL	4.1	3.00	4.3	38	104	139	-
F 80-220/034	120	WL	4.1	3.00	4.3	38	140	139	-
F 80-220/034	135	YL	4.1	3.00	4.3	38	104	139	-
F 80-220/034	135	WL	4.1	3.00	4.3	38	140	139	-
F 80-220/044	150	YL	6.9	5.00	6.0	38	104	139	-

23) Fluid temperature

Size	Impeller diameter	Motor version	P_1	P_N	I_N	I_A	$T^{23)}$	[lbs]	Mat. No.
			[hp]	[hp]	[A]	[A]	[°F]		
F 80-220/044	150	WL	6.9	5.00	6.0	38	140	139	-
F 80-220/044	165	YL	6.9	5.00	6.0	38	104	141	-
F 80-220/044	165	WL	6.9	5.00	6.0	38	140	141	-
F 80-220/044	180	YL	6.9	5.00	6.0	38	104	145	-
F 80-220/044	180	WL	6.9	5.00	6.0	38	140	145	-
F 100-220/034	120	YL	4.1	3.00	4.3	38	104	139	-
F 100-220/034	120	WL	4.1	3.00	4.3	38	140	139	-
F 100-220/044	135	YL	6.9	5.00	6.0	38	104	139	-
F 100-220/044	135	WL	6.9	5.00	6.0	38	140	139	-
F 100-220/044	150	YL	6.9	5.00	6.0	38	104	139	-
F 100-220/044	150	WL	6.9	5.00	6.0	38	140	139	-
F 100-220/044	165	YL	6.9	5.00	6.0	38	104	143	-
F 100-220/044	165	WL	6.9	5.00	6.0	38	140	143	-
F 100-220/044	180	YL	6.9	5.00	6.0	38	104	146	-
F 100-220/044	180	WL	6.9	5.00	6.0	38	140	146	-

Technical data 3~ 460 V. material variant G

Size	Impeller diameter	Motor version	P_1	P_2	I_N	I_A	$T^{23)}$	[lbs]	Mat. No.
			[hp]	[hp]	[A]	[A]	[°F]		
S 50-170/012	100	YL	3.7	2.55	4.2	33	104	86	39190447
S 50-170/012	100	WL	3.7	2.55	4.2	33	140	86	-
S 50-170/012	110	YL	3.7	2.55	4.2	33	104	86	39190449
S 50-170/012	110	WL	3.7	2.55	4.2	33	140	86	-
S 50-170/022	120	YL	4.4	3.10	4.8	33	104	86	39190451
S 50-170/022	120	WL	4.4	3.10	4.8	33	140	86	-
S 50-170/022	130	YL	4.4	3.10	4.8	33	104	86	39190453
S 50-170/022	130	WL	4.4	3.10	4.8	33	140	86	-
S 50-220/042	130	YL	6.9	5.00	7.6	55	104	119	39190455
S 50-220/042	130	WL	6.9	5.00	7.6	55	140	119	-
S 50-220/042	140	YL	6.9	5.00	7.6	55	104	119	39190457
S 50-220/042	140	WL	6.9	5.00	7.6	55	140	119	-
S 50-220/042	150	YL	6.9	5.00	7.6	55	104	119	39190459
S 50-220/042	150	WL	6.9	5.00	7.6	55	140	119	-
S 50-220/042	158	YL	6.9	5.00	7.6	55	104	119	39190461
S 50-220/042	158	WL	6.9	5.00	7.6	55	140	119	-
F 50-170/002	90	YL	2.6	1.70	3.4	33	104	90	39190401
F 50-170/002	90	WL	2.6	1.70	3.4	33	140	90	-
F 50-170/022	107	YL	4.4	3.10	4.8	33	104	90	39190403
F 50-170/022	107	WL	4.4	3.10	4.8	33	140	90	-
F 50-220/032	110	YL	5.2	3.70	6.2	55	104	112	39190405
F 50-220/032	110	WL	5.2	3.70	6.2	55	140	112	-
F 50-220/042	120	YL	6.9	5.00	7.6	55	104	112	39190407
F 50-220/042	120	WL	6.9	5.00	7.6	55	140	112	-
F 50-220/042	130	YL	6.9	5.00	7.6	55	104	114	39190409
F 50-220/042	130	WL	6.9	5.00	7.6	55	140	114	-
F 50-220/042	140	YL	6.9	5.00	7.6	55	104	114	39190411
F 50-220/042	140	WL	6.9	5.00	7.6	55	140	114	-
F 65-170/032	112	YL	5.2	3.70	6.2	55	104	128	39190413
F 65-170/032	112	WL	5.2	3.70	6.2	55	140	128	-
F 65-170/042	120	YL	6.9	5.00	7.6	55	104	128	39190415
F 65-170/042	120	WL	6.9	5.00	7.6	55	140	128	-
F 65-170/042	128	YL	6.9	5.00	7.6	55	104	128	39190417
F 65-170/042	128	WL	6.9	5.00	7.6	55	140	128	-
F 65-220/004	135	YL	1.9	1.10	2.8	21	104	108	39190419

Size	Impeller diameter	Motor version	P_1	P_2	I_N	I_A	T[23]	[lbs]	Mat. No.
			[hp]	[hp]	[A]	[A]	[°F]		
F 65-220/004	135	WL	1.9	1.10	2.8	21	140	108	-
F 65-220/014	145	YL	2.7	1.70	3.3	21	104	108	39190421
F 65-220/014	145	WL	2.7	1.70	3.3	21	140	108	-
F 65-220/014	155	YL	2.7	1.70	3.3	21	104	108	39190423
F 65-220/014	155	WL	2.7	1.70	3.3	21	140	108	-
F 65-220/024	165	YL	3.6	2.40	4.0	21	104	110	39190425
F 65-220/024	165	WL	3.6	2.40	4.0	21	140	110	-
F 65-220/024	175	YL	3.6	2.40	4.0	21	104	110	39190427
F 65-220/024	175	WL	3.6	2.40	4.0	21	140	110	-
F 80-220/034	120	YL	4.1	3.00	5.9	49	104	139	39190429
F 80-220/034	120	WL	4.1	3.00	5.9	49	140	139	-
F 80-220/034	135	YL	4.1	3.00	5.9	49	104	139	39190431
F 80-220/034	135	WL	4.1	3.00	5.9	49	140	139	-
F 80-220/044	150	YL	6.9	5.00	8.0	49	104	139	39190433
F 80-220/044	150	WL	6.9	5.00	8.0	49	140	139	-
F 80-220/044	165	YL	6.9	5.00	8.0	49	104	141	39190435
F 80-220/044	165	WL	6.9	5.00	8.0	49	140	141	-
F 80-220/044	180	YL	6.9	5.00	8.0	49	104	145	39190437
F 80-220/044	180	WL	6.9	5.00	8.0	49	140	145	-
F 100-220/034	120	YL	4.1	3.00	5.9	49	104	139	39190439
F 100-220/034	120	WL	4.1	3.00	5.9	49	140	139	-
F 100-220/044	135	YL	6.9	5.00	8.0	49	104	139	39190441
F 100-220/044	135	WL	6.9	5.00	8.0	49	140	139	-
F 100-220/044	150	YL	6.9	5.00	8.0	49	104	139	39190443
F 100-220/044	150	WL	6.9	5.00	8.0	49	140	139	-
F 100-220/044	165	YL	6.9	5.00	8.0	49	104	143	39190445
F 100-220/044	165	WL	6.9	5.00	8.0	49	140	143	-
F 100-220/044	180	YL	6.9	5.00	8.0	49	104	146	39190483
F 100-220/044	180	WL	6.9	5.00	8.0	49	140	146	-

Technical data 3~ 380 V. material variant G

Size	Impeller diameter	Motor version	P_1	P_2	I_N	I_A	T[23]	[lbs]	Mat. No.
			[hp]	[hp]	[A]	[A]	[°F]		
S 50-170/012	100	YL	3.8	2.55	4.8	27	104	86	-
S 50-170/012	100	WL	3.8	2.55	4.8	27	140	86	-
S 50-170/012	110	YL	3.8	2.55	4.8	27	104	86	-
S 50-170/012	110	WL	3.8	2.55	4.8	27	140	86	-
S 50-170/022	120	YL	4.7	3.10	5.9	27	104	86	-
S 50-170/022	120	WL	4.7	3.10	5.9	27	140	86	-
S 50-170/022	130	YL	4.7	3.10	5.9	27	104	86	-
S 50-170/022	130	WL	4.7	3.10	5.9	27	140	86	-
S 50-220/042	130	YL	6.6	5.00	8.2	58	104	119	-
S 50-220/042	130	WL	6.6	5.00	8.2	58	140	119	-
S 50-220/042	140	YL	6.6	5.00	8.2	58	104	119	-
S 50-220/042	140	WL	6.6	5.00	8.2	58	140	119	-
S 50-220/042	150	YL	6.6	5.00	8.2	58	104	119	-
S 50-220/042	150	WL	6.6	5.00	8.2	58	140	119	-
S 50-220/042	158	YL	6.6	5.00	8.2	58	104	119	-
S 50-220/042	158	WL	6.6	5.00	8.2	58	140	119	-
F 50-170/002	90	YL	2.6	1.70	3.4	27	104	90	-
F 50-170/002	90	WL	2.6	1.70	3.4	27	140	90	-
F 50-170/022	107	YL	4.7	3.10	5.9	27	104	90	-
F 50-170/022	107	WL	4.7	3.10	5.9	27	140	90	-
F 50-220/032	110	YL	4.8	3.70	6.1	58	104	112	-

Size	Impeller diameter	Motor version	P_1 [hp]	P_2 [hp]	I_N [A]	I_A [A]	T[23] [°F]	[lbs]	Mat. No.
F 50-220/032	110	WL	4.8	3.70	6.1	58	140	112	-
F 50-220/042	120	YL	6.6	5.00	8.2	58	104	112	-
F 50-220/042	120	WL	6.6	5.00	8.2	58	140	112	-
F 50-220/042	130	YL	6.6	5.00	8.2	58	104	114	-
F 50-220/042	130	WL	6.6	5.00	8.2	58	140	114	-
F 50-220/042	140	YL	6.6	5.00	8.2	58	104	114	-
F 50-220/042	140	WL	6.6	5.00	8.2	58	140	114	-
F 65-170/032	112	YL	4.8	3.70	6.1	58	104	128	-
F 65-170/032	112	WL	4.8	3.70	6.1	58	140	128	-
F 65-170/042	120	YL	6.6	5.00	8.2	58	104	128	-
F 65-170/042	120	WL	6.6	5.00	8.2	58	140	128	-
F 65-170/042	128	YL	6.6	5.00	8.2	58	104	128	-
F 65-170/042	128	WL	6.6	5.00	8.2	58	140	128	-
F 65-220/004	135	YL	1.7	1.10	2.5	19	104	108	-
F 65-220/004	135	WL	1.7	1.10	2.5	19	140	108	-
F 65-220/014	145	YL	2.6	1.70	3.4	19	104	108	-
F 65-220/014	145	WL	2.6	1.70	3.4	19	140	108	-
F 65-220/014	155	YL	2.6	1.70	3.4	19	104	108	-
F 65-220/014	155	WL	2.6	1.70	3.4	19	140	108	-
F 65-220/024	165	YL	3.8	2.40	4.7	19	104	110	-
F 65-220/024	165	WL	3.8	2.40	4.7	19	140	110	-
F 65-220/024	175	YL	3.8	2.40	4.7	19	104	110	-
F 65-220/024	175	WL	3.8	2.40	4.7	19	140	110	-
F 80-220/034	120	YL	4.1	3.00	5.5	42	104	139	-
F 80-220/034	120	WL	4.1	3.00	5.5	42	140	139	-
F 80-220/034	135	YL	4.1	3.00	5.5	42	104	139	-
F 80-220/034	135	WL	4.1	3.00	5.5	42	140	139	-
F 80-220/044	150	YL	8.0	5.00	9.8	42	104	139	-
F 80-220/044	150	WL	8.0	5.00	9.8	42	140	139	-
F 80-220/044	165	YL	8.0	5.00	9.8	42	104	141	-
F 80-220/044	165	WL	8.0	5.00	9.8	42	140	141	-
F 80-220/044	180	YL	8.0	5.00	9.8	42	104	145	-
F 80-220/044	180	WL	8.0	5.00	9.8	42	140	145	-
F 100-220/034	120	YL	4.1	3.00	5.5	42	104	139	-
F 100-220/034	120	WL	4.1	3.00	5.5	42	140	139	-
F 100-220/044	135	YL	8.0	5.00	9.8	42	104	139	-
F 100-220/044	135	WL	8.0	5.00	9.8	42	140	139	-
F 100-220/044	150	YL	8.0	5.00	9.8	42	104	139	-
F 100-220/044	150	WL	8.0	5.00	9.8	42	140	139	-
F 100-220/044	165	YL	8.0	5.00	9.8	42	104	143	-
F 100-220/044	165	WL	8.0	5.00	9.8	42	140	143	-
F 100-220/044	180	YL	8.0	5.00	9.8	42	104	146	-
F 100-220/044	180	WL	8.0	5.00	9.8	42	140	146	-

Technical data 3~ 230 V. material variant G

Size	Impeller diameter	Motor version	P_1 [hp]	P_2 [hp]	I_N [A]	I_A [A]	T[23] [°F]	[lbs]	Mat. No.
S 50-170/012	100	YL	3.7	2.55	8.4	66	104	86	39190446
S 50-170/012	100	WL	3.7	2.55	8.4	66	140	86	-
S 50-170/012	110	YL	3.7	2.55	8.4	66	104	86	39190448
S 50-170/012	110	WL	3.7	2.55	8.4	66	140	86	-
S 50-170/022	120	YL	4.4	3.10	9.7	66	104	86	39190450
S 50-170/022	120	WL	4.4	3.10	9.7	66	140	86	-
S 50-170/022	130	YL	4.4	3.10	9.7	66	104	86	39190452

Size	Impeller diameter	Motor version	P_1	P_2	I_N	I_A	T[23)]	[lbs]	Mat. No.
			[hp]	[hp]	[A]	[A]	[°F]		
S 50-170/022	130	WL	4.4	3.10	9.7	66	140	86	-
S 50-220/042	130	YL	6.9	5.00	15.1	110	104	119	39190454
S 50-220/042	130	WL	6.9	5.00	15.1	110	140	119	-
S 50-220/042	140	YL	6.9	5.00	15.1	110	104	119	39190456
S 50-220/042	140	WL	6.9	5.00	15.1	110	140	119	-
S 50-220/042	150	YL	6.9	5.00	15.1	110	104	119	39190458
S 50-220/042	150	WL	6.9	5.00	15.1	110	140	119	-
S 50-220/042	158	YL	6.9	5.00	15.1	110	104	119	39190460
S 50-220/042	158	WL	6.9	5.00	15.1	110	140	119	-
F 50-170/002	90	YL	2.6	1.70	6.7	66	104	90	39190400
F 50-170/002	90	WL	2.6	1.70	6.7	66	140	90	-
F 50-170/022	107	YL	4.4	3.10	9.7	66	104	90	39190402
F 50-170/022	107	WL	4.4	3.10	9.7	66	140	90	-
F 50-220/032	110	YL	5.2	3.70	12.5	110	104	112	39190404
F 50-220/032	110	WL	5.2	3.70	12.5	110	140	112	-
F 50-220/042	120	YL	6.9	5.00	15.1	110	104	112	39190406
F 50-220/042	120	WL	6.9	5.00	15.1	110	140	112	-
F 50-220/042	130	YL	6.9	5.00	15.1	110	104	114	39190408
F 50-220/042	130	WL	6.9	5.00	15.1	110	140	114	-
F 50-220/042	140	YL	6.9	5.00	15.1	110	104	114	39190410
F 50-220/042	140	WL	6.9	5.00	15.1	110	140	114	-
F 65-170/032	112	YL	5.2	3.70	12.5	110	104	128	39190412
F 65-170/032	112	WL	5.2	3.70	12.5	110	140	128	-
F 65-170/042	120	YL	6.9	5.00	15.1	110	104	128	39190414
F 65-170/042	120	WL	6.9	5.00	15.1	110	140	128	-
F 65-170/042	128	YL	6.9	5.00	15.1	110	104	128	39190416
F 65-170/042	128	WL	6.9	5.00	15.1	110	140	128	-
F 65-220/004	135	YL	1.9	1.10	5.6	42	104	108	39190418
F 65-220/004	135	WL	1.9	1.10	5.6	42	140	108	-
F 65-220/014	145	YL	2.7	1.70	6.5	42	104	108	39190420
F 65-220/014	145	WL	2.7	1.70	6.5	42	140	108	-
F 65-220/014	155	YL	2.7	1.70	6.5	42	104	108	39190422
F 65-220/014	155	WL	2.7	1.70	6.5	42	140	108	-
F 65-220/024	165	YL	3.6	2.40	8.1	42	104	110	39190424
F 65-220/024	165	WL	3.6	2.40	8.1	42	140	110	-
F 65-220/024	175	YL	3.6	2.40	8.1	42	104	110	39190426
F 65-220/024	175	WL	3.6	2.40	8.1	42	140	110	-
F 80-220/034	120	YL	4.1	3.00	11.8	98	104	139	39190428
F 80-220/034	120	WL	4.1	3.00	11.8	98	140	139	-
F 80-220/034	135	YL	4.1	3.00	11.8	98	104	139	39190430
F 80-220/034	135	WL	4.1	3.00	11.8	98	140	139	-
F 80-220/044	150	YL	6.9	5.00	15.9	98	104	139	39190432
F 80-220/044	150	WL	6.9	5.00	15.9	98	140	139	-
F 80-220/044	165	YL	6.9	5.00	15.9	98	104	141	39190434
F 80-220/044	165	WL	6.9	5.00	15.9	98	140	141	-
F 80-220/044	180	YL	6.9	5.00	15.9	98	104	145	39190436
F 80-220/044	180	WL	6.9	5.00	15.9	98	140	145	-
F 100-220/034	120	YL	4.1	3.00	11.8	98	104	139	39190438
F 100-220/034	120	WL	4.1	3.00	11.8	98	140	139	-
F 100-220/044	135	YL	6.9	5.00	15.9	98	104	139	39190440
F 100-220/044	135	WL	6.9	5.00	15.9	98	140	139	-
F 100-220/044	150	YL	6.9	5.00	15.9	98	104	139	39190442
F 100-220/044	150	WL	6.9	5.00	15.9	98	140	139	-

Size	Impeller diameter	Motor version	P_1	P_2	I_N	I_A	T[23)]	[lbs]	Mat. No.
			[hp]	[hp]	[A]	[A]	[°F]		
F 100-220/044	165	YL	6.9	5.00	15.9	98	104	143	39190444
F 100-220/044	165	WL	6.9	5.00	15.9	98	140	143	-
F 100-220/044	180	YL	6.9	5.00	15.9	98	104	146	39190482
F 100-220/044	180	WL	6.9	5.00	15.9	98	140	146	-

Technical data 3~ 208 V. material variant G

Size	Impeller diameter	Motor version	P_1	P_N	I_N	I_A	T[23)]	[lbs]	Mat. No.
			[hp]	[hp]	[A]	[A]	[°F]		
S 50-170/012	100	YL	3.53	2.55	8.9	50	104	86	-
S 50-170/012	100	WL	3.53	2.55	8.9	50	140	86	-
S 50-170/012	110	YL	3.53	2.55	8.9	50	104	86	-
S 50-170/012	110	WL	3.53	2.55	8.9	50	140	86	-
S 50-170/022	120	YL	4.26	3.10	10.3	50	104	86	-
S 50-170/022	120	WL	4.26	3.10	10.3	50	140	86	-
S 50-170/022	130	YL	4.26	3.10	10.3	50	104	86	-
S 50-170/022	130	WL	4.26	3.10	10.3	50	140	86	-
S 50-220/042	130	YL	6.26	5.00	14.8	106	104	119	-
S 50-220/042	130	WL	6.26	5.00	14.8	106	140	119	-
S 50-220/042	140	YL	6.26	5.00	14.8	106	104	119	-
S 50-220/042	140	WL	6.26	5.00	14.8	106	140	119	-
S 50-220/042	150	YL	6.26	5.00	14.8	106	104	119	-
S 50-220/042	150	WL	6.26	5.00	14.8	106	140	119	-
S 50-220/042	158	YL	6.26	5.00	14.8	106	104	119	-
S 50-220/042	158	WL	6.26	5.00	14.8	106	140	119	-
F 50-170/002	90	YL	2.48	1.70	7.2	50	104	90	-
F 50-170/002	90	WL	2.48	1.70	7.2	50	140	90	-
F 50-170/022	107	YL	4.26	3.10	10.3	50	104	90	-
F 50-170/022	107	WL	4.26	3.10	10.3	50	140	90	-
F 50-220/032	110	YL	4.66	3.70	11.7	106	104	112	-
F 50-220/032	110	WL	4.66	3.70	11.7	106	140	112	-
F 50-220/042	120	YL	6.26	5.00	14.8	106	104	112	-
F 50-220/042	120	WL	6.26	5.00	14.8	106	140	112	-
F 50-220/042	130	YL	6.26	5.00	14.8	106	104	114	-
F 50-220/042	130	WL	6.26	5.00	14.8	106	140	114	-
F 50-220/042	140	YL	6.26	5.00	14.8	106	104	114	-
F 50-220/042	140	WL	6.26	5.00	14.8	106	140	114	-
F 65-170/032	112	YL	4.66	3.70	11.7	106	104	128	-
F 65-170/032	112	WL	4.66	3.70	11.7	106	140	128	-
F 65-170/042	120	YL	6.26	5.00	14.8	106	104	128	-
F 65-170/042	120	WL	6.26	5.00	14.8	106	140	128	-
F 65-170/042	128	YL	6.26	5.00	14.8	106	104	128	-
F 65-170/042	128	WL	6.26	5.00	14.8	106	140	128	-
F 65-220/004	135	YL	1.69	1.10	5.7	35	104	108	-
F 65-220/004	135	WL	1.69	1.10	5.7	35	140	108	-
F 65-220/014	145	YL	2.45	1.70	6.7	35	104	108	-
F 65-220/014	145	WL	2.45	1.70	6.7	35	140	108	-
F 65-220/014	155	YL	2.45	1.70	6.7	35	104	108	-
F 65-220/014	155	WL	2.45	1.70	6.7	35	140	108	-
F 65-220/024	165	YL	3.46	2.40	8.5	35	104	110	-
F 65-220/024	165	WL	3.46	2.40	8.5	35	140	110	-
F 65-220/024	175	YL	3.46	2.40	8.5	35	104	110	-
F 65-220/024	175	WL	3.46	2.40	8.5	35	140	110	-
F 80-220/034	120	YL	4.10	3.00	12.3	77	104	139	-
F 80-220/034	120	WL	4.10	3.00	12.3	77	140	139	-

Size	Impeller diameter	Motor version	P_1	P_N	I_N	I_A	T[23]	[lbs]	Mat. No.
			[hp]	[hp]	[A]	[A]	[°F]		
F 80-220/034	135	YL	4.10	3.00	12.3	77	104	139	-
F 80-220/034	135	WL	4.10	3.00	12.3	77	140	139	-
F 80-220/044	150	YL	6.81	5.00	16.0	77	104	139	-
F 80-220/044	150	WL	6.81	5.00	16.0	77	140	139	-
F 80-220/044	165	YL	6.81	5.00	16.0	77	104	141	-
F 80-220/044	165	WL	6.81	5.00	16.0	77	140	141	-
F 80-220/044	180	YL	6.81	5.00	16.0	77	104	145	-
F 80-220/044	180	WL	6.81	5.00	16.0	77	140	145	-
F 100-220/034	120	YL	4.10	3.00	12.3	77	104	139	-
F 100-220/034	120	WL	4.10	3.00	12.3	77	140	139	-
F 100-220/044	135	YL	6.81	5.00	16.0	77	104	139	-
F 100-220/044	135	WL	6.81	5.00	16.0	77	140	139	-
F 100-220/044	150	YL	6.81	5.00	16.0	77	104	139	-
F 100-220/044	150	WL	6.81	5.00	16.0	77	140	139	-
F 100-220/044	165	YL	6.81	5.00	16.0	77	104	143	-
F 100-220/044	165	WL	6.81	5.00	16.0	77	140	143	-
F 100-220/044	180	YL	6.81	5.00	16.0	77	104	146	-
F 100-220/044	180	WL	6.81	5.00	16.0	77	140	146	-

Characteristic curves

n = 3500 rpm

Amarex N S 50-170, n = 3500 rpm

On request, the pump's operating point can be verified to Hydraulic Institute acceptance standard Level B. The characteristic curves refer to the effective motor speed.

The illustrated characteristic curves were measured at 460 V/60 Hz. For characteristic curves at different voltages refer to KSB's pump selection program.

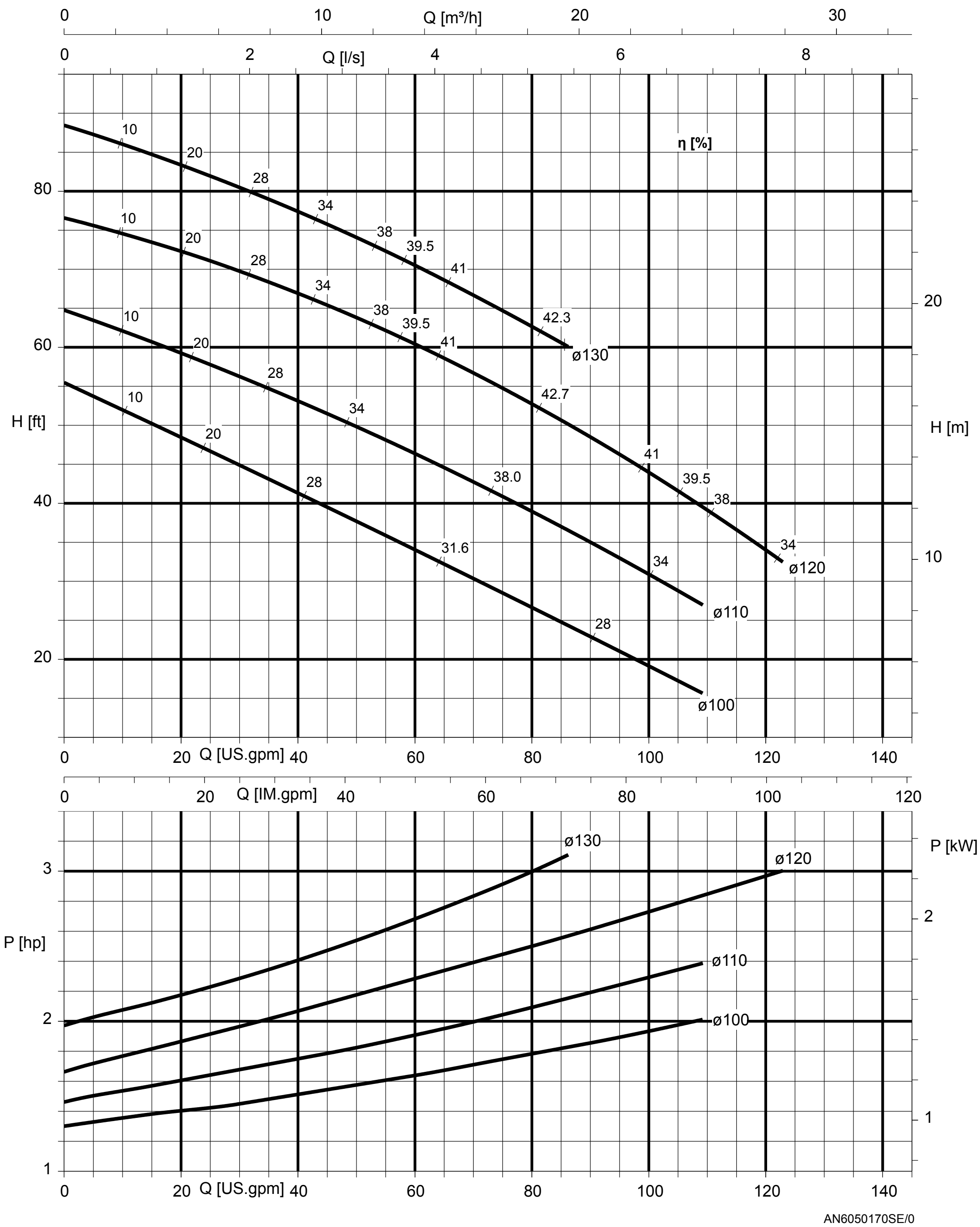


Fig. 1: Free passage $^{3}/_{8}$" [10 mm]

Amarex N S 50-220, n = 3500 rpm

On request, the pump's operating point can be verified to Hydraulic Institute acceptance standard Level B. The characteristic curves refer to the effective motor speed.

The illustrated characteristic curves were measured at 460 V/60 Hz. For characteristic curves at different voltages refer to KSB's pump selection program.

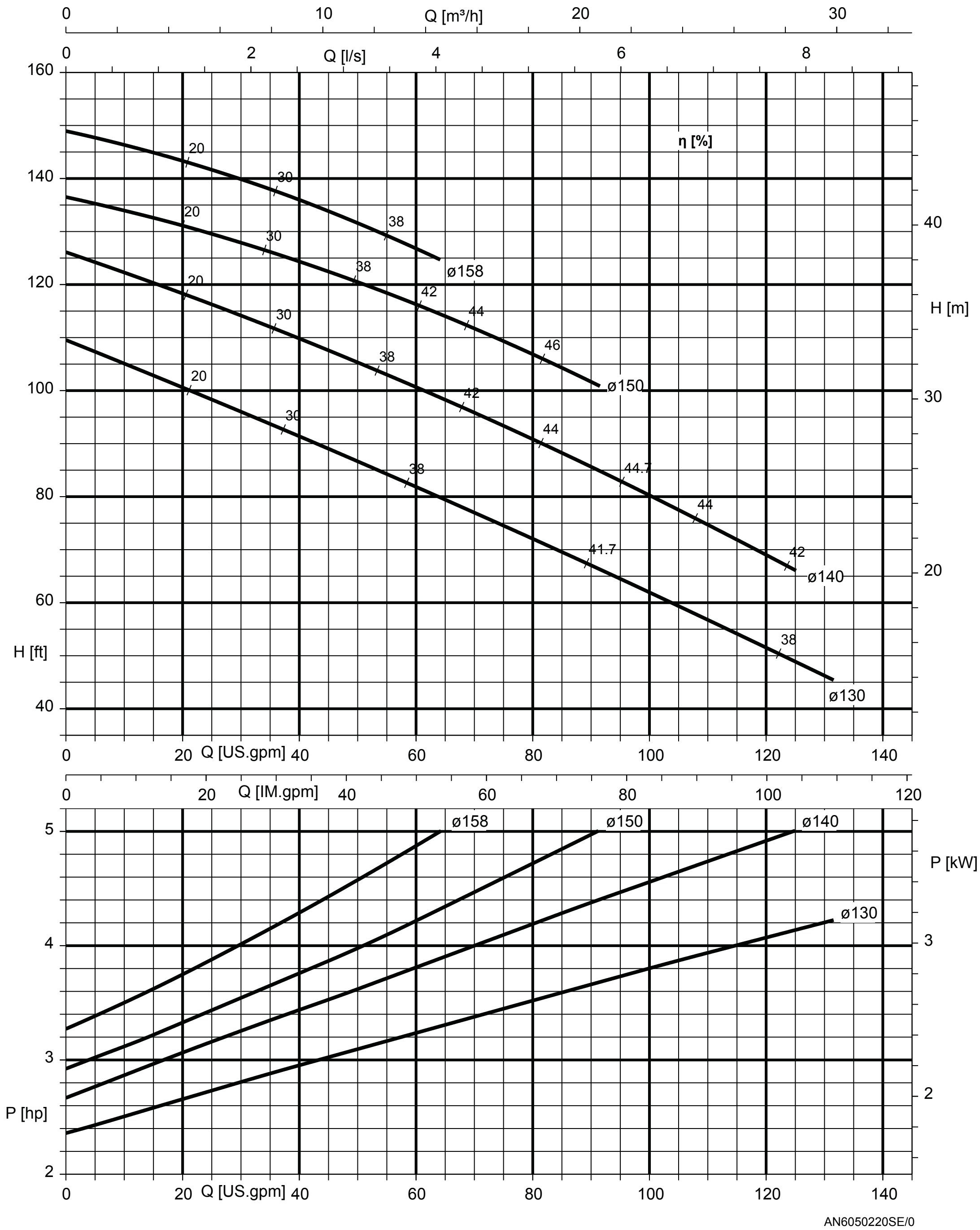


Fig. 2: Free passage $^3/_8$" [10 mm]

Amarex N F 50-170, n = 3500 rpm

On request, the pump's operating point can be verified to Hydraulic Institute acceptance standard Level B. The characteristic curves refer to the effective motor speed.

The illustrated characteristic curves were measured at 460 V/60 Hz. For characteristic curves at different voltages refer to KSB's pump selection program.

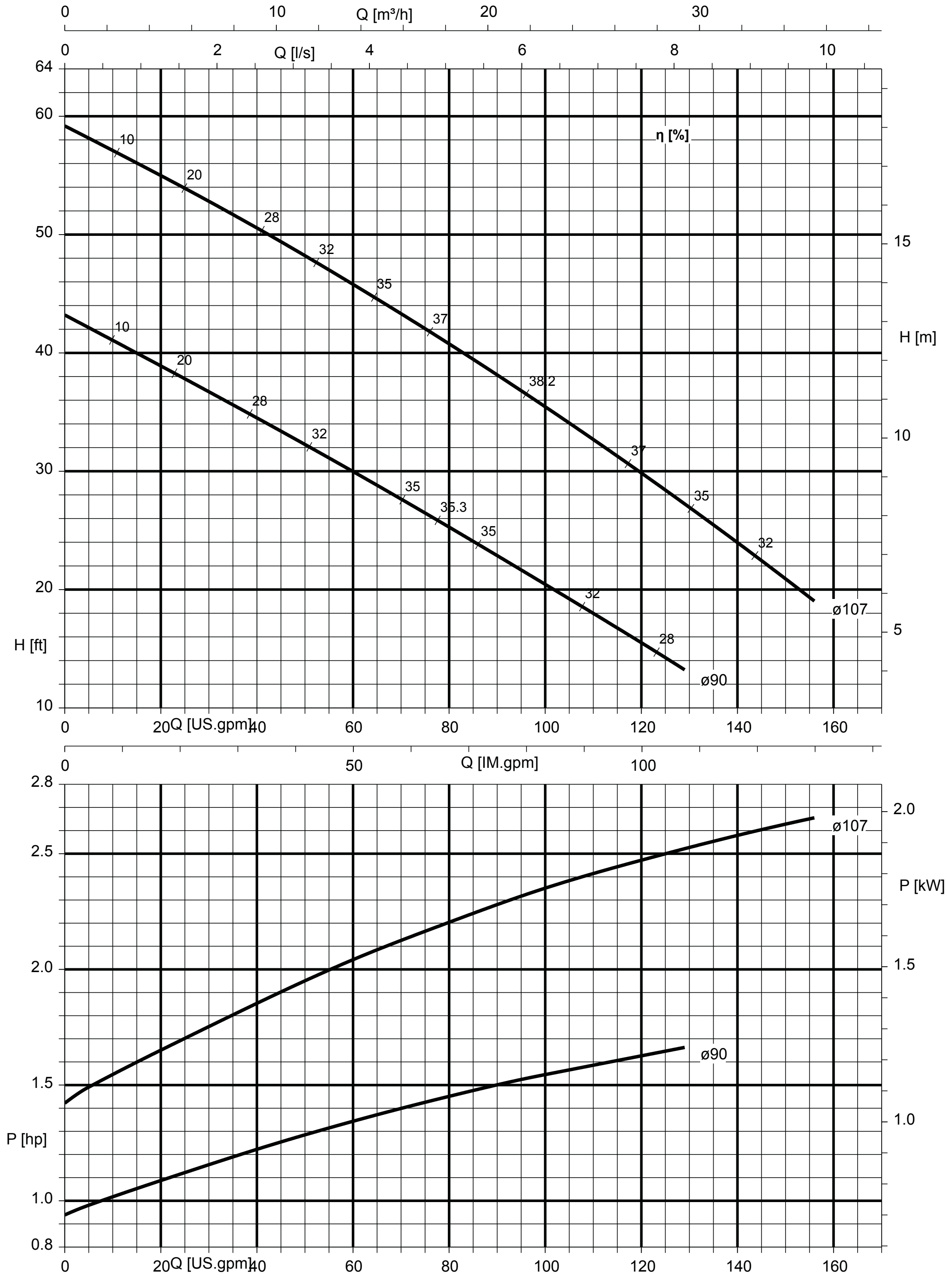


Fig. 3: Free passage 1 $^{1}/_{2}$" [40 mm]

Amarex N F 50-220, n = 3500 rpm

On request, the pump's operating point can be verified to Hydraulic Institute acceptance standard Level B. The characteristic curves refer to the effective motor speed.

The illustrated characteristic curves were measured at 460 V/60 Hz. For characteristic curves at different voltages refer to KSB's pump selection program.

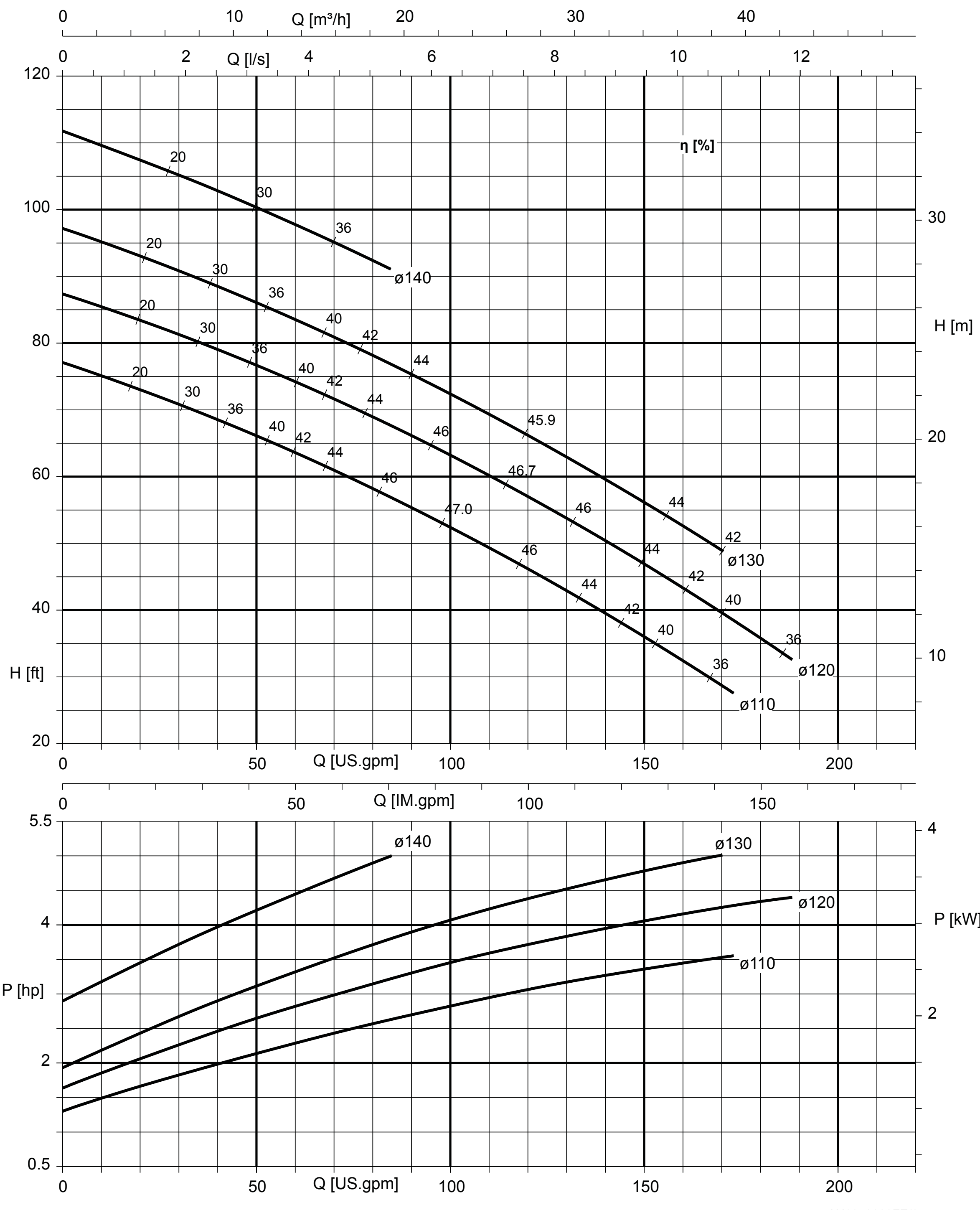


Fig. 4: Free passage 1 $^{1}/_{2}$" [40 mm]

Amarex N F 65-170, n = 3500 rpm

On request, the pump's operating point can be verified to Hydraulic Institute acceptance standard Level B. The characteristic curves refer to the effective motor speed.

The illustrated characteristic curves were measured at 460 V/60 Hz. For characteristic curves at different voltages refer to KSB's pump selection program.

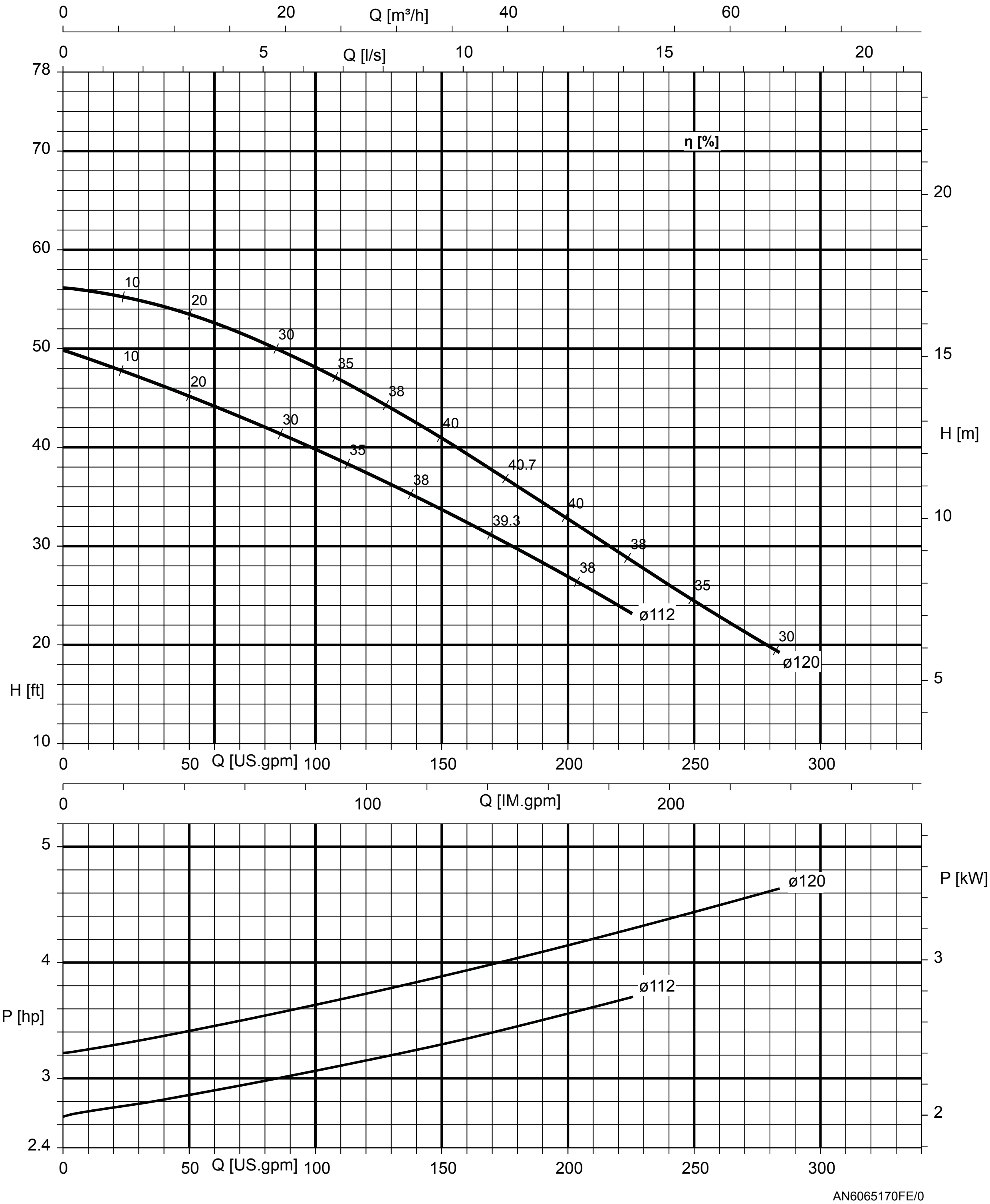


Fig. 5: Free passage 2 1/2" [65 mm]

n = 1750 rpm

Amarex N F 65-220, n = 1750 rpm

On request, the pump's operating point can be verified to Hydraulic Institute acceptance standard Level B. The characteristic curves refer to the effective motor speed.

The illustrated characteristic curves were measured at 460 V/60 Hz. For characteristic curves at different voltages refer to KSB's pump selection program.

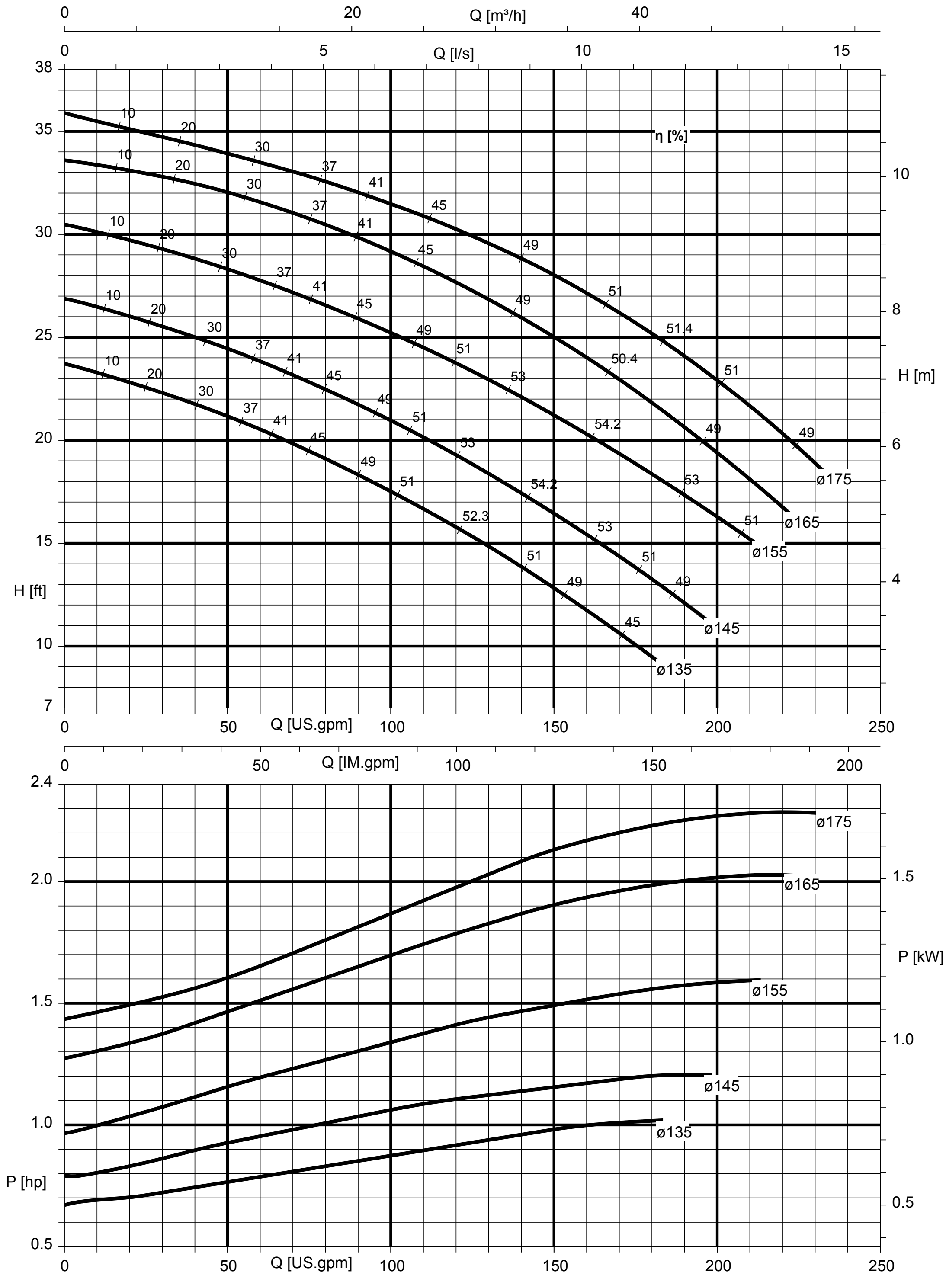


Fig. 6: Free passage 2 $^{1}/_{2}$" [65 mm]

Amarex N F 80-220, n = 1750 rpm

On request, the pump's operating point can be verified to Hydraulic Institute acceptance standard Level B. The characteristic curves refer to the effective motor speed.

The illustrated characteristic curves were measured at 460 V/60 Hz. For characteristic curves at different voltages refer to KSB's pump selection program.

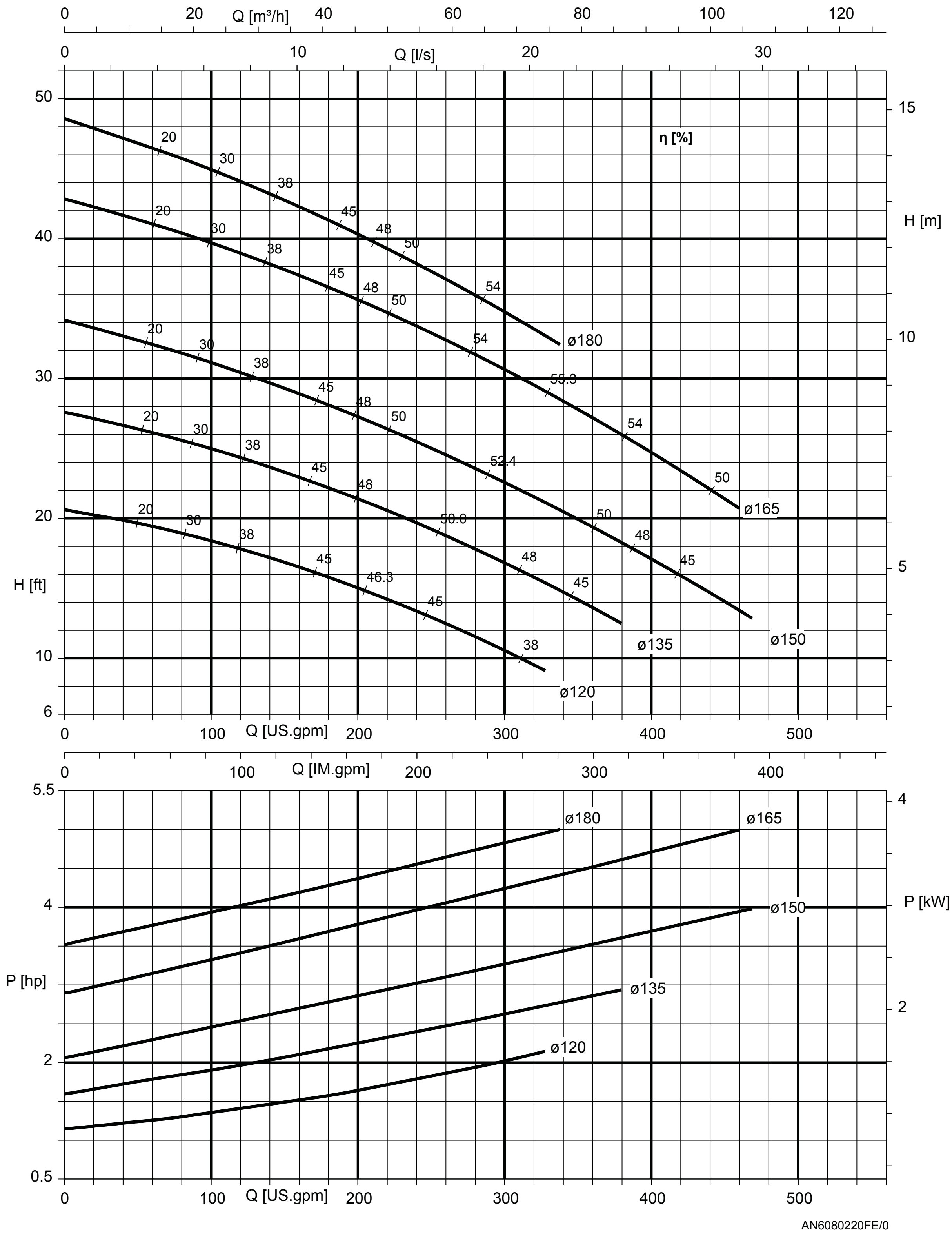


Fig. 7: Free passage = 3" [76 mm]

Amarex N F 100-220, n = 1750 rpm

On request, the pump's operating point can be verified to Hydraulic Institute acceptance standard Level B. The characteristic curves refer to the effective motor speed.

The illustrated characteristic curves were measured at 460 V/60 Hz. For characteristic curves at different voltages refer to KSB's pump selection program.

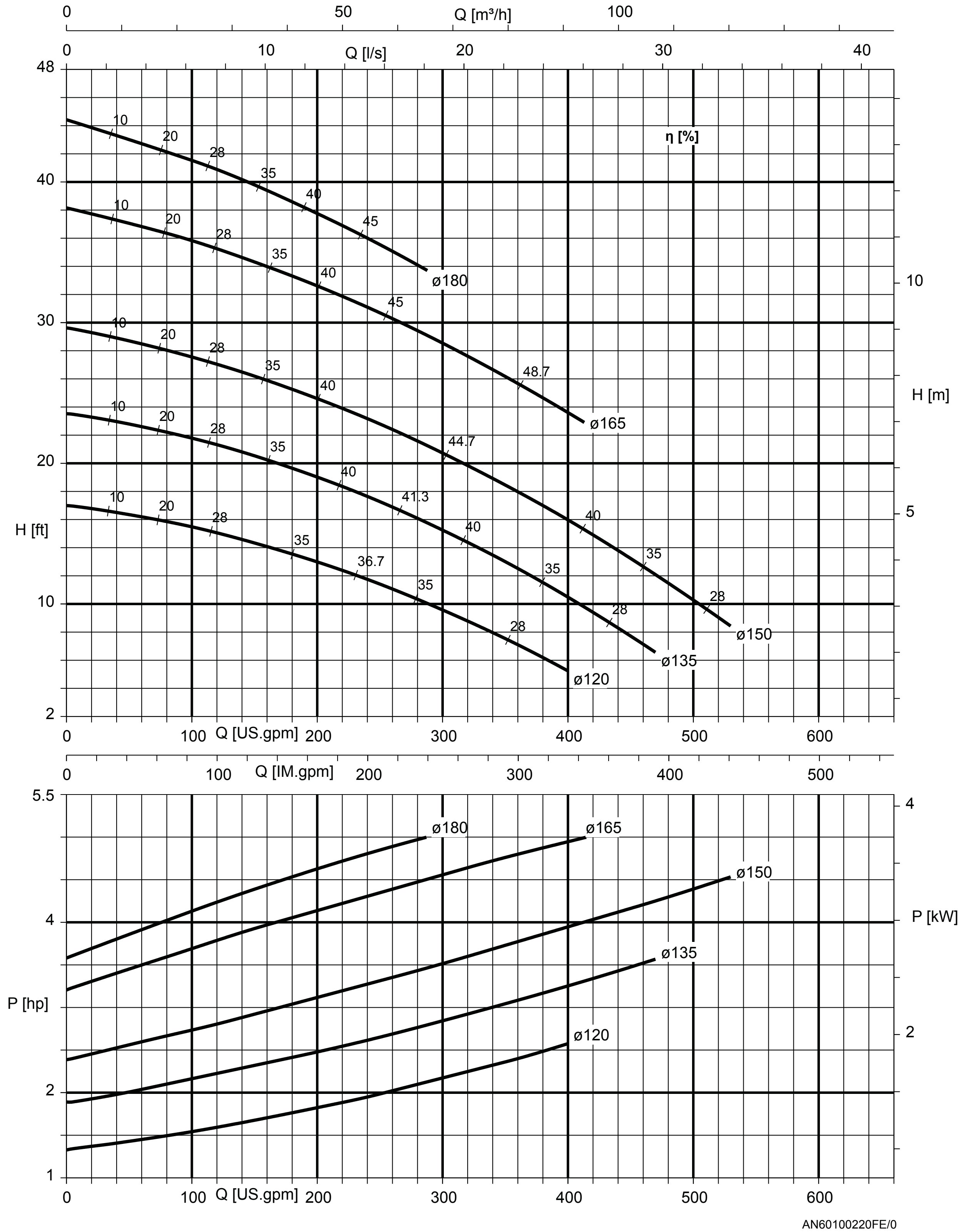
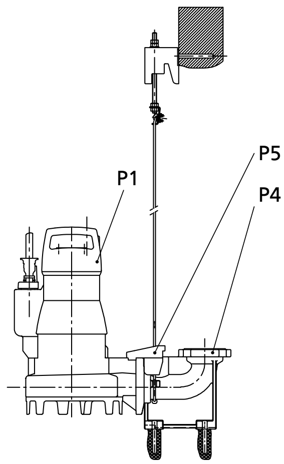


Fig. 8: Free passage = 4" [100 mm]

Types of installation

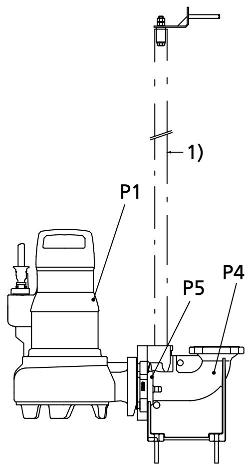
Overview of installation types

Installation type S: stationary wet installation



Guide cable arrangement

P1: pump
P4: installation parts for guide cable arrangement
P5: claw

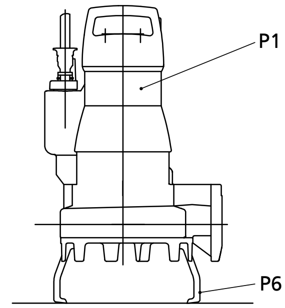


Twin guide rail arrangement

1) = Not included in KSB's scope of supply

P1: pump
P4: installation parts for twin guide rail arrangement
P5: claw and adapter

Installation type P: transportable model

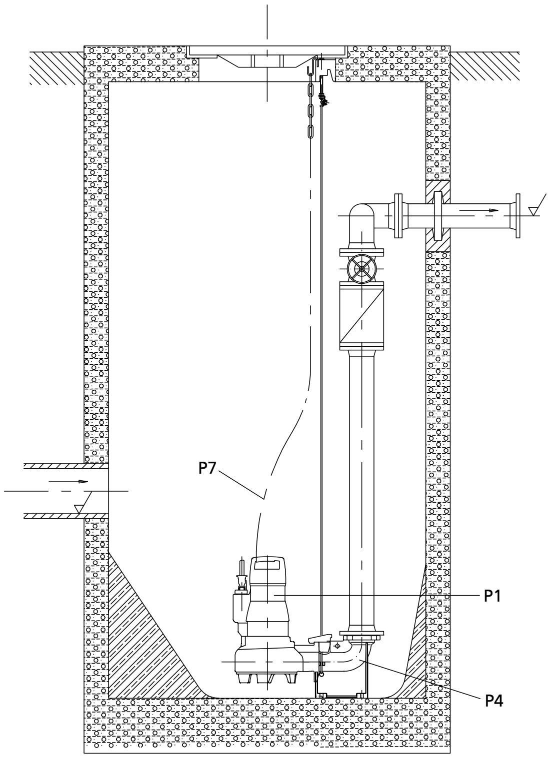


P1: pump
P6: foot

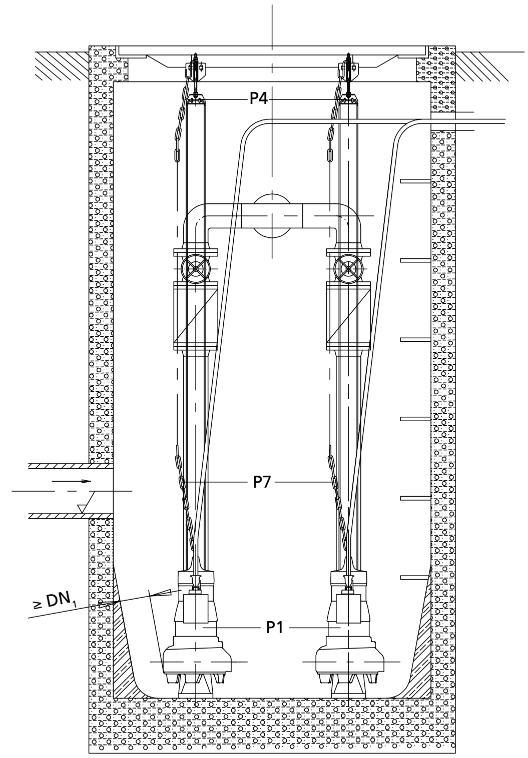
Installation information

Suggested installation layouts for stationary pump sets

Guide cable arrangement or twin guide rail arrangement
Amarex N 50 (2″), 65 (2 ½″), 80 (3″), 100 (4″)



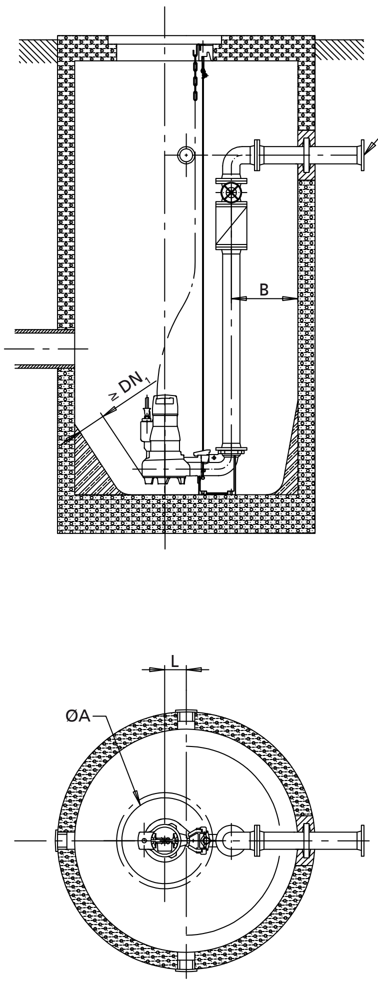
Suggestion 1
Guide cable arrangement or twin guide rail arrangement
Single-pump station
Flanged base elbow



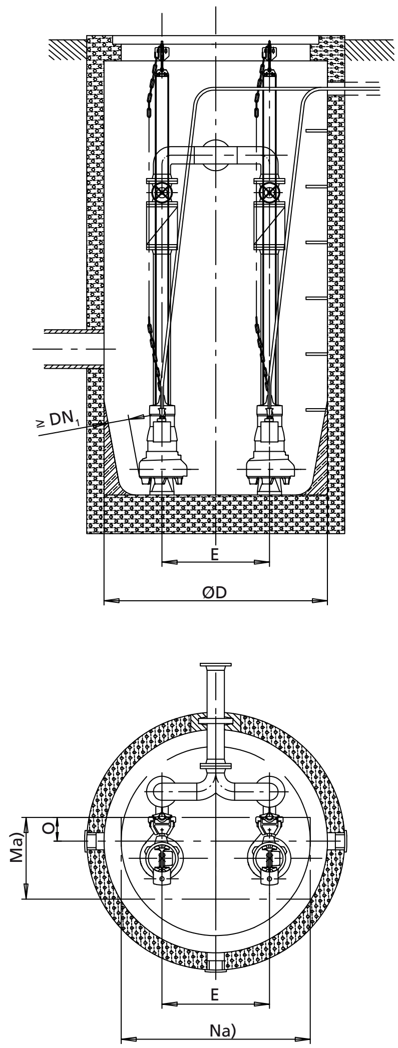
Suggestion 2
Guide cable arrangement or twin guide rail arrangement
Dual-pump station
Flanged base elbow

Dimensions

Guide cable arrangement
Amarex N 50 (2″), 65 (2 1/2″), 80 (3″), 100 (4″)



Single-pump station
Flanged base elbow



Dual-pump station
Flanged base elbow

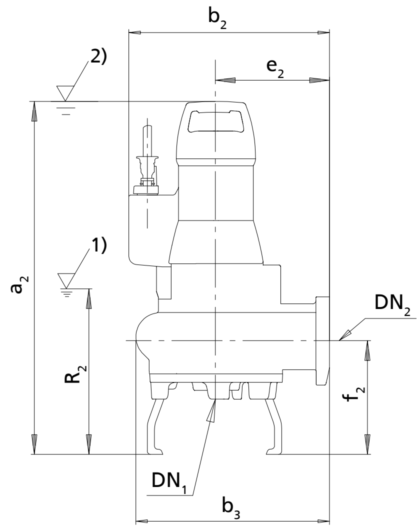
a)	Minimum

Dimensions [″]

Amarex N		Ø A	B	Ø D	E	L	M	N	O	DN$_1$	DN$_2$
S 50-170 / F 50-170	1 pump	24 5/8	6 1/2	39 3/8	-	1 11/16	-	-	-	2	2
	2 pumps	-	9 1/4	39 3/8	11 13/16	-	21 11/16	27 9/16	7 7/8	2	2
S 50-222 / F 50-220	1 pump	24 5/8	6 1/2	39 3/8	-	1 11/16	-	-	-	2	2
	2 pumps	-	9 1/4	39 3/8	11 13/16	-	21 11/16	27 9/16	7 7/8	2	2
F 65-170 / F 65-220	1 pump	24 5/8	6 7/8	39 3/8	-	3 5/8	-	-	-	2 1/2	2 1/2
	2 pumps	-	14 3/16	47 1/4	23 5/8	-	21 11/16	39 3/8	5 5/16	2 1/2	2 1/2
F 80-220	1 pump	24 5/8	7 7/8	39 3/8	-	1/1	-	-	-	3	3
	2 pumps	-	12 5/8	47 1/4	23 5/8	-	23 5/8	39 3/8	6 5/8	3	3
F 100-220	1 pump	24 5/8	7 7/8	39 3/8	-	2 9/16	-	-	-	4	4
	2 pumps	-	12 5/8	47 1/4	23 5/8	-	23 5/8	39 3/8	5 1/16	4	4

Dimensions

Amarex N, transportable model



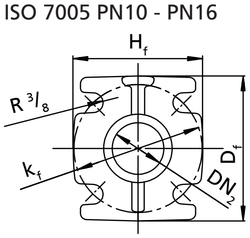
1)	Lowest switch-off point for automatic operation
2)	Minimum submergence for continuous duty

Pump dimensions ["]

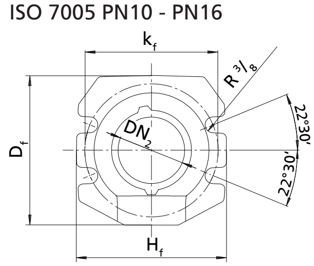
Size	Pump							
	DN_1	DN_2	a_2 24)	b_2	b_3	e_2	f_2 24)	R_2
S/F 50-170	2	2	21 $^{9}/_{16}$	12 $^{11}/_{16}$	11 $^{9}/_{16}$	7 $^{1}/_{8}$	5 $^{1}/_{1}$	8 $^{3}/_{16}$
S/F 50-220	2	2	23 $^{15}/_{16}$	13 $^{1}/_{4}$	12 $^{1}/_{8}$	7 $^{1}/_{8}$	6 $^{1}/_{8}$	8
F 65-170	2 $^{1}/_{2}$	2 $^{1}/_{2}$	25 $^{11}/_{16}$	14 $^{7}/_{16}$	13 $^{5}/_{16}$	8 $^{1}/_{4}$	6 $^{7}/_{16}$	9 $^{3}/_{4}$
F 65-220	2 $^{1}/_{2}$	2 $^{1}/_{2}$	23 $^{3}/_{8}$	13 $^{7}/_{8}$	13 $^{11}/_{16}$	8 $^{1}/_{4}$	6 $^{7}/_{16}$	9 $^{15}/_{16}$
F 80-220	3	3	26 $^{7}/_{16}$	15 $^{3}/_{16}$	15 $^{7}/_{16}$	9 $^{1}/_{16}$	7 $^{3}/_{8}$	9 $^{13}/_{16}$
F 100-220	4	4	27 $^{1}/_{2}$	15 $^{1}/_{16}$	15 $^{3}/_{8}$	9 $^{1}/_{16}$	8 $^{3}/_{16}$	10 $^{7}/_{8}$

Pump flange DN_2

DN 50 (2") and DN 65 (2 $^{1}/_{2}$")
ISO 7005 PN10 - PN16



DN 80 (3") and DN 100 (4")
ISO 7005 PN10 - PN16



Pump flange dimensions ["]

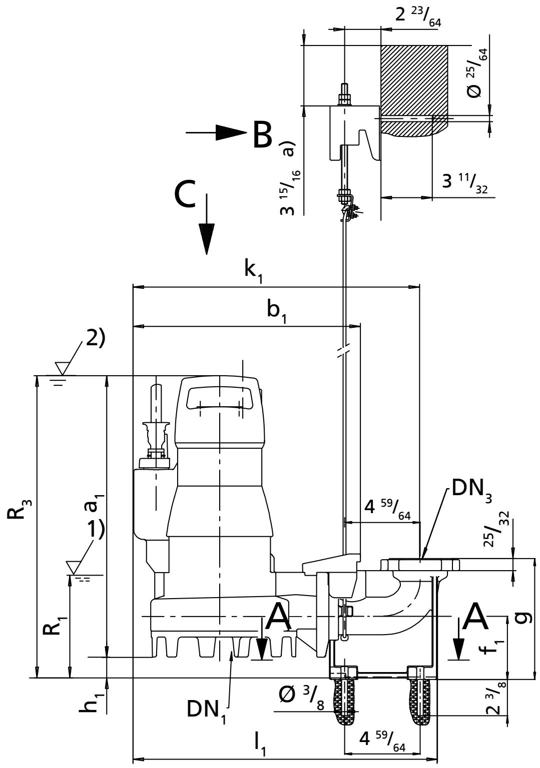
Size	Flange			
	H_f	k_f	D_f	Z_f
S/F 50-170	4 $^{15}/_{16}$	4 $^{15}/_{16}$	5 $^{1}/_{2}$	4
S/F 50-220	4 $^{15}/_{16}$	4 $^{15}/_{16}$	5 $^{1}/_{2}$	4
F 65-170	5 11/$_{16}$	5 $^{11}/_{16}$	6 $^{7}/_{16}$	4
F 65-220	5 $^{11}/_{16}$	5 $^{11}/_{16}$	6 $^{7}/_{16}$	4
F 80-220	7 $^{1}/_{8}$	6 $^{5}/_{16}$	7 $^{1}/_{8}$	4
F 100-220	7 $^{15}/_{16}$	7 $^{1}/_{8}$	8 $^{1}/_{16}$	4

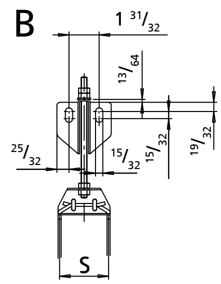
24) If a foot plate is fitted, a_2 + $^{3}/_{8}$" [10 mm]

Amarex N 50, stationary installation, guide cable arrangement, straight claw

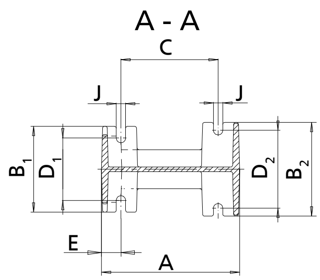
DN 3 = DN 50: ASME = standard

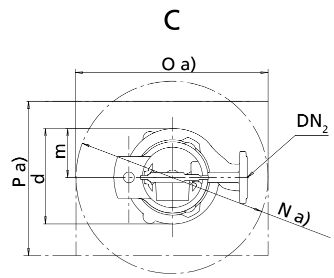
Guide cable arrangement





Installation in the sump





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

Pump dimensions ["]

Size	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	[lbs]
S 50-170	-	2	18 1/2	14 13/16	9 7/8	4 1/8	4 1/8	1 1/4	18 9/16	19 3/4	4 15/16	6 5/16	19 3/4	86
F 50-170	2	2	18 1/2	14 13/16	9 7/8	4 1/8	7 7/8	1 1/4	18 9/16	19 3/4	4 15/16	6 5/16	19 3/4	95
S 50-220	-	2	20 15/16	15 5/16	10	4 1/8	7 7/8	1 1/16	19 1/4	20 1/4	5 1/16	6 1/16	22	119
F 50-220	2	2	20 15/16	15 5/16	10	4 1/8	7 7/8	1 1/16	19 1/4	20 1/4	5 1/16	6 1/16	22	119

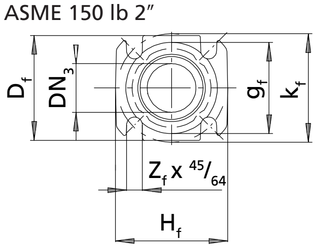
Foundation dimensions ["]

A	B_1	B_2	C	D_1	D_2	E	J	N	O	P	S
7 5/16	4 5/16	4 3/4	4 15/16	3 3/16	3 15/16	1/1	1/2	18 1/4	18 5/16	13 13/16	3 1/8

Elbow flange DN_3

DN 50 (2")

ASME 150 lb 2"



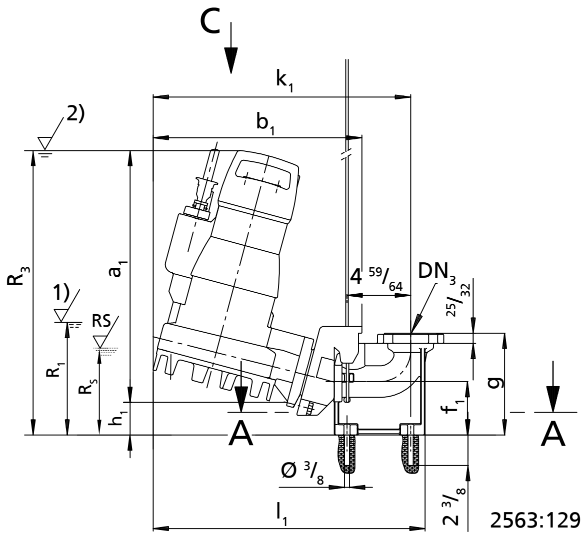
Elbow flange dimensions DN_3 ["]

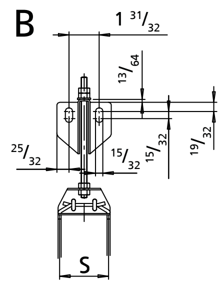
Flange design	DN_3	D_f	g_f	H_f	k_f	Z_f
ASME 150 lb 2"	1 15/16	4 3/4	4 1/16	5 1/8	4 3/4	4

Amarex N 50, stationary installation, guide cable arrangement, inclined claw

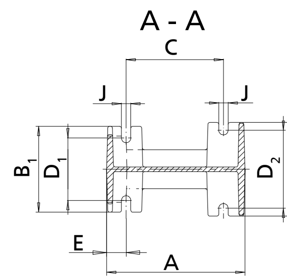
DN 3 = DN 50: ASME = standard

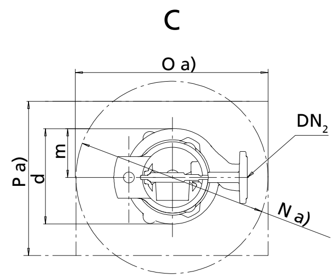
Guide cable arrangement





Installation in the sump





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

Pump dimensions ["]

Size	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	R_S	[lbs]
S 50-170	-	2	18 1/2	14 13/16	9 7/8	4 1/8	4 1/8	1 1/4	18 9/16	19 3/4	4 15/16	6 5/16	19 3/4	-	86
F 50-170	-	2	18 1/2	14 13/16	9 7/8	4 1/8	7 7/8	1 1/4	18 9/16	19 3/4	4 15/16	6 5/16	19 3/4	6 3/8	95
S 50-220	-	2	20 15/16	15 5/16	10	4 1/8	7 7/8	1 1/16	19 1/4	20 1/4	5 1/16	6 1/16	22	-	119
F 50-220	-	2	20 15/16	15 5/16	10	4 1/8	7 7/8	1 1/16	19 1/4	20 1/4	5 1/16	6 1/16	22	6 3/8	119

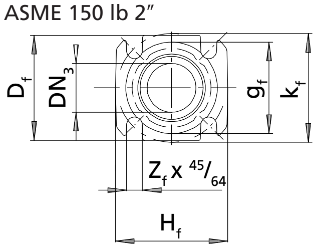
Foundation dimensions ["]

A	B_1	B_2	C	D_1	D_2	E	J	N	O	P
7 5/16	4 5/16	4 3/4	4 15/16	3 3/16	3 15/16	1/1	1/2	18 1/4	18 5/16	13 13/16

Elbow flange DN_3

DN 50 (2")

ASME 150 lb 2"



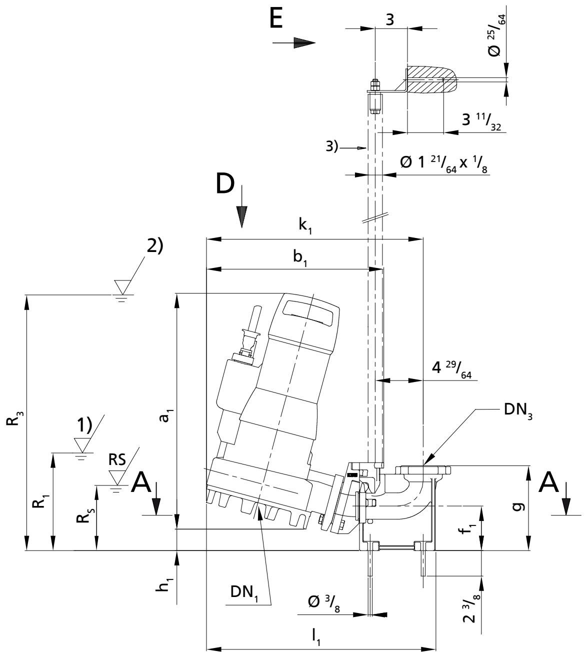
Elbow flange dimensions DN_3 ["]

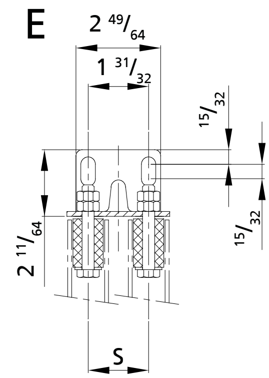
Flange design	DN_3	D_f	g_f	H_f	k_f	Z_f
ASME 150 lb 2"	1 15/16	4 3/4	4 1/16	5 1/8	4 3/4	4

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

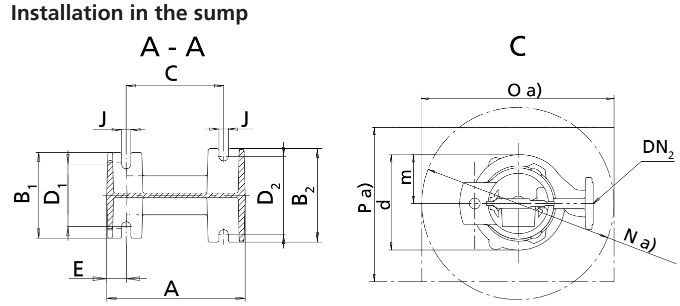
DN 3 = DN 50: ASME = standard

Twin guide rail arrangement





Installation in the sump



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

Pump dimensions ["]

Size	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	R_S	[lbs]
S 50-170	-	2	19 7/16	16 5/8	9 7/8	4 1/8	7 7/8	2 1/8	19 5/8	20 13/16	4 15/16	8 11/16	21 11/16	6 3/8	86
F 50-170	2	2	19 7/16	16 5/8	9 7/8	4 1/8	7 7/8	2 1/8	19 5/8	20 13/16	4 15/16	8 11/16	21 11/16	-	95
S 50-220	-	2	21 5/8	16 3/4	10	4 1/8	7 7/8	2 1/8	19 15/16	21 1/16	5 1/16	9 1/16	23 7/8	6 3/8	119
F 50-220	2	2	21 5/8	16 3/4	10	4 1/8	7 7/8	2 1/8	19 15/16	21 1/16	5 1/16	9 1/16	23 7/8	-	119

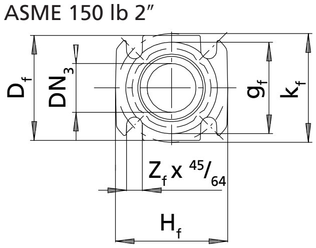
Foundation dimensions ["]

A	B_1	B_2	C	D_1	D_2	E	J	N	O	P	S
7 5/16	4 5/16	4 3/4	4 15/16	3 3/16	3 15/16	1/1	1/2	18 7/8	18 7/8	13 13/16	1 15/16

Elbow flange DN_3

DN 50 (2″)

ASME 150 lb 2″



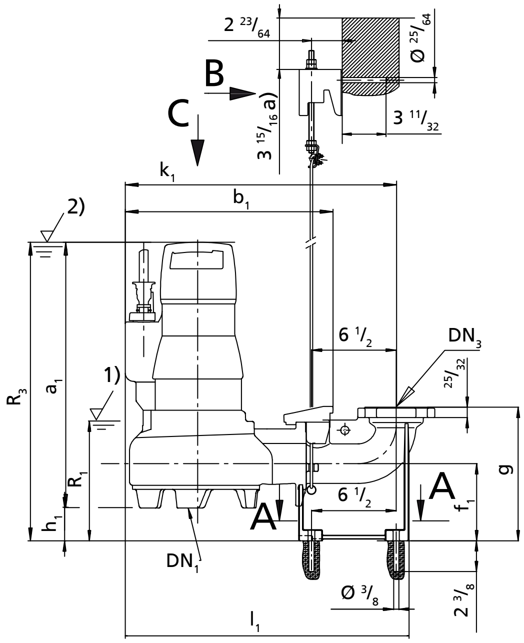
Elbow flange dimensions DN_3 ["]

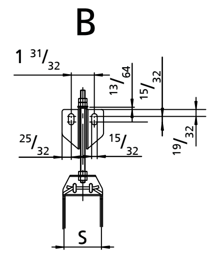
Flange design	DN_3	D_f	g_f	H_f	k_f	Z_f
ASME 150 lb 2″	1 15/16	4 3/4	4 1/16	5 1/8	4 3/4	4

Amarex N 65, stationary installation, guide cable arrangement

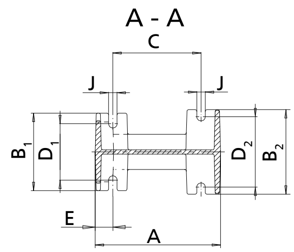
DN 3 = 65/65: ASME = standard

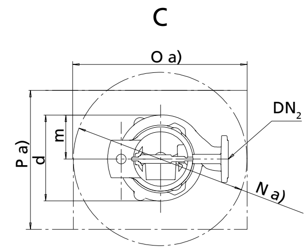
Guide cable arrangement





Installation in the sump





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

Pump dimensions ["]

Size	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	R_S	[lbs]
F 65-170	2 $^{1}/_{2}$	2 $^{1}/_{2}$	22 $^{3}/_{4}$	16 $^{5}/_{8}$	9 $^{7}/_{8}$	5 $^{7}/_{8}$	10 $^{1}/_{4}$	2 $^{7}/_{16}$	21 $^{15}/_{16}$	22 $^{15}/_{16}$	5	9 $^{1}/_{4}$	25 $^{3}/_{16}$	6 $^{5}/_{16}$	119
F 65-220	2 $^{1}/_{2}$	2 $^{1}/_{2}$	20 $^{3}/_{8}$	16 $^{1}/_{16}$	10 $^{7}/_{16}$	5 $^{7}/_{8}$	10 $^{1}/_{4}$	2 $^{1}/_{2}$	21 $^{7}/_{16}$	22 $^{7}/_{16}$	5 $^{5}/_{8}$	9 $^{1}/_{2}$	22 $^{7}/_{8}$	6 $^{5}/_{16}$	100

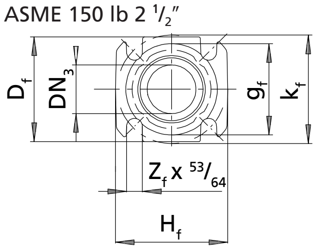
Foundation dimensions ["]

A	B_1	B_2	C	D_1	D_2	E	J	N	O	P
8 $^{1}/_{2}$	4 $^{3}/_{4}$	5 $^{1}/_{2}$	6 $^{1}/_{2}$	3 $^{3}/_{8}$	4 $^{3}/_{4}$	$^{1}/_{1}$	$^{1}/_{2}$	19 $^{11}/_{16}$	19 $^{11}/_{16}$	15 $^{3}/_{4}$

Elbow flange DN_3

DN 65 (2 $^{1}/_{2}$")

ASME 150 lb 2 $^{1}/_{2}$"



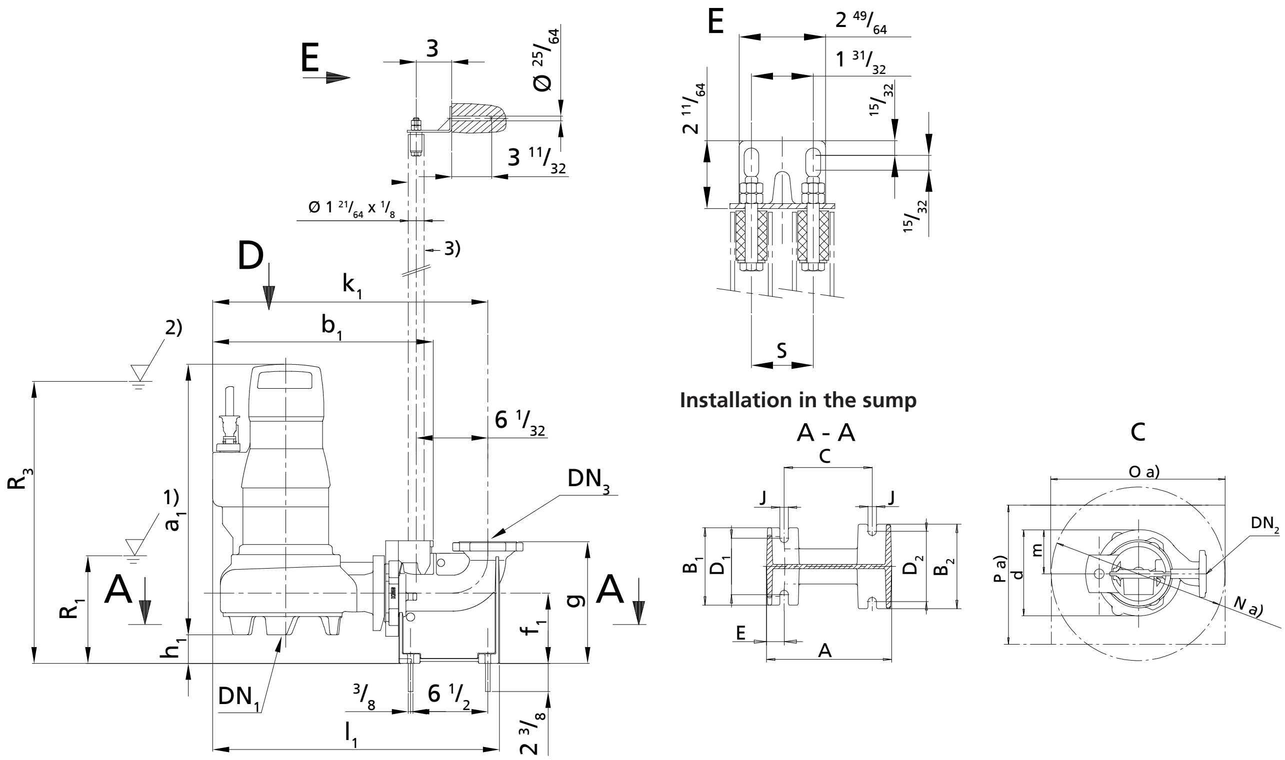
Elbow flange dimensions DN_3 ["]

Flange design	DN_3	D_f	g_f	H_f	k_f	Z_f
ASME 150 lb	2 $^{1}/_{2}$	5 $^{1}/_{2}$	4 $^{13}/_{16}$	5 $^{7}/_{8}$	5 $^{1}/_{2}$	4

Amarex N 65, stationary installation, twin guide rail arrangement

DN 3 = 65: ASME = standard

Twin guide rail arrangement



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

Pump dimensions ["]

Size	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	[lbs]
F 65-170	-	2 $^{1}/_{2}$	22 $^{3}/_{4}$	18 $^{7}/_{16}$	9 $^{7}/_{8}$	5 $^{7}/_{8}$	10 $^{1}/_{4}$	2 $^{7}/_{16}$	23 $^{3}/_{16}$	24 $^{1}/_{8}$	5	9 $^{1}/_{4}$	25 $^{3}/_{16}$	119
F 65-170	2 $^{1}/_{2}$	2 $^{1}/_{2}$	22 $^{3}/_{4}$	18 $^{7}/_{16}$	9 $^{7}/_{8}$	5 $^{7}/_{8}$	10 $^{1}/_{4}$	2 $^{7}/_{16}$	23 $^{3}/_{16}$	24 $^{1}/_{8}$	5	5 $^{5}/_{8}$	25 $^{3}/_{16}$	119
F 65-220	-	2 $^{1}/_{2}$	20 $^{3}/_{8}$	17 $^{7}/_{8}$	10 $^{7}/_{16}$	5 $^{7}/_{8}$	10 $^{1}/_{4}$	2 $^{1}/_{2}$	22 $^{5}/_{8}$	23 $^{9}/_{16}$	5 $^{5}/_{8}$	9 $^{1}/_{2}$	22 $^{7}/_{8}$	99
F 65-220	2 $^{1}/_{2}$	2 $^{1}/_{2}$	20 $^{3}/_{8}$	17 $^{7}/_{8}$	10 $^{7}/_{16}$	5 $^{7}/_{8}$	10 $^{1}/_{4}$	2 $^{1}/_{2}$	22 $^{5}/_{8}$	24 $^{1}/_{8}$	5 $^{5}/_{8}$	9 $^{1}/_{2}$	22 $^{7}/_{8}$	99

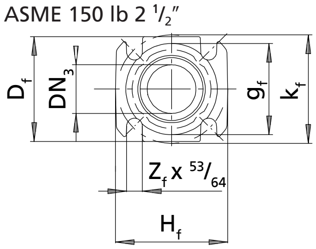
Foundation dimensions ["]

A	B_1	B_2	C	D_1	D_2	E	J	N	O	P
8 $^{5}/_{16}$	4 $^{3}/_{4}$	5 $^{1}/_{2}$	6 $^{1}/_{2}$	3 $^{3}/_{8}$	4 $^{3}/_{4}$	$^{1}/_{1}$	$^{1}/_{2}$	21 $^{11}/_{16}$	21 $^{11}/_{16}$	15 $^{3}/_{4}$

Elbow flange DN_3

DN 65 (2 $^{1}/_{2}$")

ASME 150 lb 2 $^{1}/_{2}$"



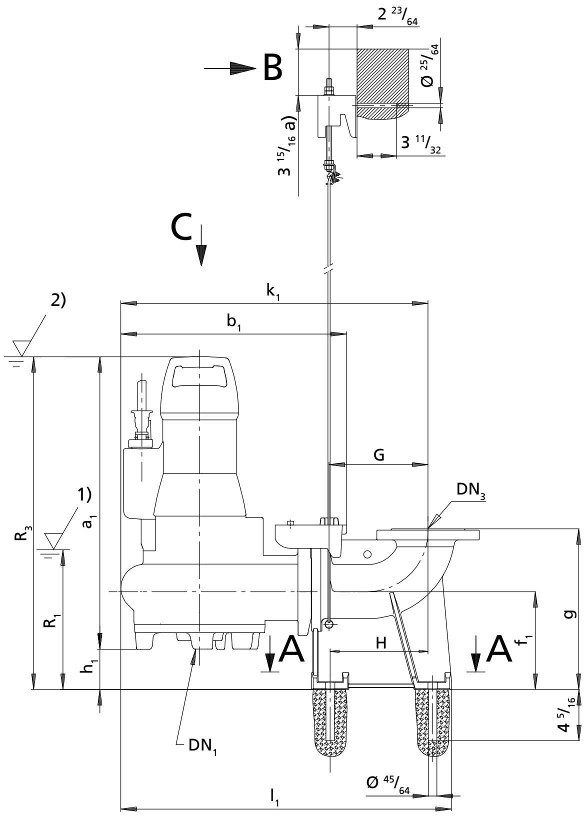
Elbow flange dimensions DN_3 ["]

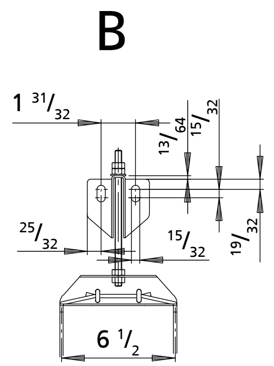
Flange design	DN_3	D_f	g_f	H_f	k_f	Z_f
ASME 150 lb 2 $^{1}/_{2}$ "	2 $^{1}/_{2}$	5 $^{1}/_{2}$	4 $^{13}/_{16}$	5 $^{7}/_{8}$	5 $^{1}/_{2}$	4

Amarex N 80 and 100, stationary installation, guide cable arrangement

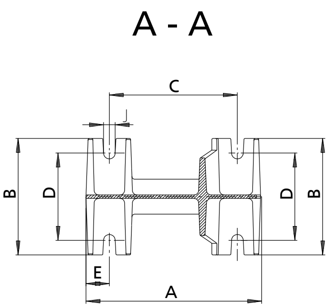
DN 3 = 80/80: ASME = standard

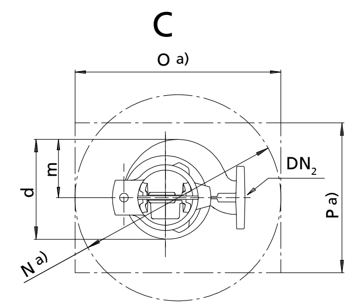
Guide cable arrangement





Installation in the sump





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

Pump dimensions ["]

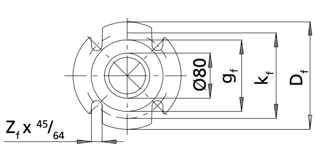
Size	DN_1	DN_2	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	[lbs]
F 80-220	3	3	22 7/8	18 13/16	12 11/16	7 7/8	12 5/8	4 1/16	23 13/16	27 5/16	6 15/16	10 5/16	26 15/16	145
F 100-220	4	4	23 3/4	18 3/4	12 1/2	8 1/4	13 9/16	3 7/8	25 1/4	27 3/16	6 11/16	10 1/16	27 5/8	148

Foundation dimensions ["]

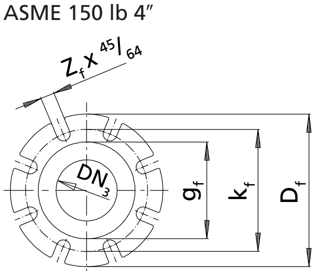
Size	A	B	C	D	E	G	H	J	N	O	P
F 80-220	11 13/16	7 7/8	8 11/16	5 7/8	1 9/16	6 7/16	6 11/16	13/16	21 11/16	21 11/16	15 3/4
F 100-220	11 13/16	7 7/8	8 11/16	5 7/8	1 9/16	8	8 1/4	13/16	21 11/16	21 11/16	15 3/4

Elbow flange DN_3

DN 80 (3")
ASME 150 lb 3"



DN 100 (4")
ASME 150 lb 4"



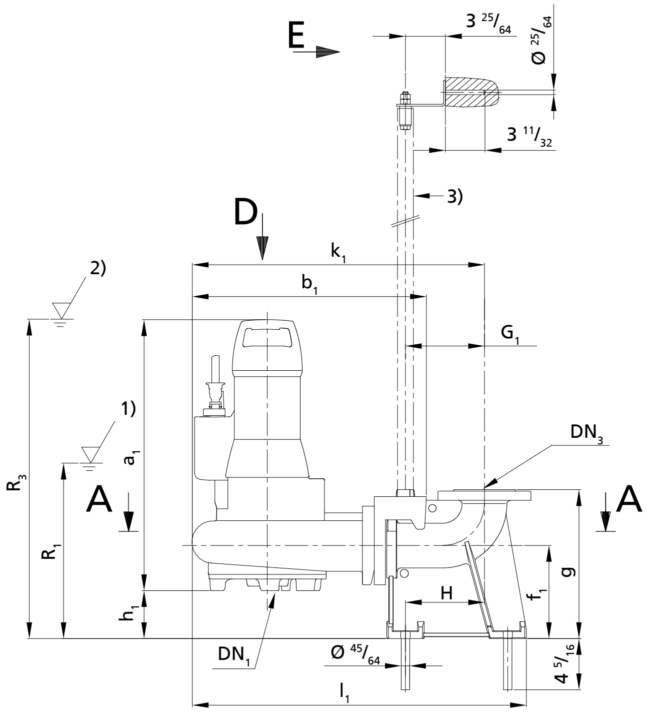
Elbow flange dimensions DN_3 ["]

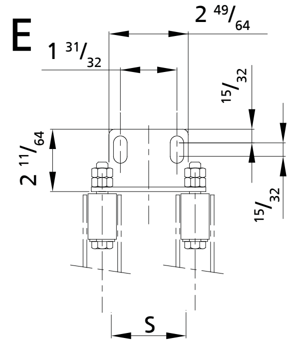
Flange design	DN_3	g_f	k_f	D_f	Z_f
ASME 150 lb	3	5	6	7 1/2	4
	4	6 1/8	7 1/2	8 11/16	8

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

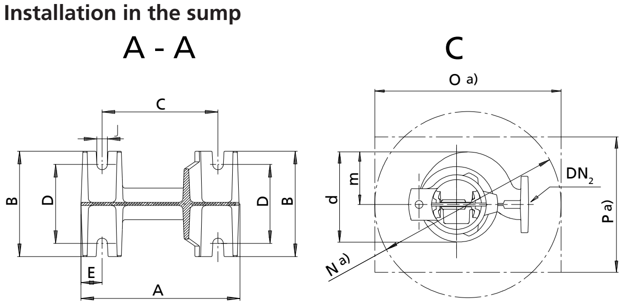
$DN\ 3$ = 80/80 oder 80/100 or 100/100: ASME = standard

Twin guide rail arrangement





Installation in the sump



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

Pump dimensions ["]

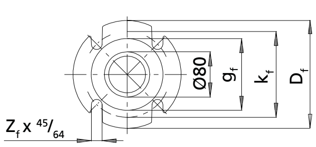
Size	DN_1	DN_2	DN_3	a_1	b_1	d	f_1	g	h_1	k_1	l_1	m	R_1	R_3	[lbs]
F 80-220	3	3	3	$22\,^{7}/_{8}$	$19\,^{15}/_{16}$	$12\,^{11}/_{16}$	$7\,^{7}/_{8}$	$12\,^{5}/_{8}$	$4\,^{1}/_{16}$	$24\,^{13}/_{16}$	$28\,^{3}/_{8}$	$6\,^{15}/_{16}$	$10\,^{5}/_{16}$	$26\,^{15}/_{16}$	145
			4												
F 100-220	4	4	4	$23\,^{3}/_{4}$	$20\,^{13}/_{16}$	$12\,^{1}/_{2}$	$8\,^{1}/_{4}$	$13\,^{9}/_{16}$	$3\,^{7}/_{8}$	$26\,^{9}/_{16}$	$28\,^{1}/_{2}$	$6\,^{11}/_{16}$	$11\,^{1}/_{16}$	$27\,^{5}/_{8}$	147

Foundation dimensions ["]

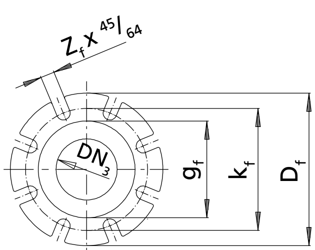
Size	A	B	C	D	E	G_1	H	J	N	O	P
F 80-220	$11\,^{13}/_{16}$	$7\,^{7}/_{8}$	$8\,^{11}/_{16}$	$5\,^{7}/_{8}$	$1\,^{9}/_{16}$	$6\,^{11}/_{16}$	$6\,^{11}/_{16}$	$^{13}/_{16}$	$22\,^{13}/_{16}$	$22\,^{13}/_{16}$	$15\,^{3}/_{4}$
F 100-220	$11\,^{13}/_{16}$	$7\,^{7}/_{8}$	$8\,^{11}/_{16}$	$5\,^{7}/_{8}$	$1\,^{9}/_{16}$	$8\,^{1}/_{4}$	$8\,^{1}/_{4}$	$^{13}/_{16}$	$23\,^{5}/_{8}$	$23\,^{5}/_{8}$	$15\,^{3}/_{4}$

Elbow flange DN_3

DN 80 (3")
ASME 150 lb 3"



DN 100 (4")
ASME 150 lb 4"



Elbow flange dimensions DN_3 ["]

Flange design	DN_3	g_f	k_f	D_f	Z_f
ASME 150 lb	3	5	6	$7\,^{1}/_{2}$	4
	4	$6\,^{1}/_{8}$	$7\,^{1}/_{2}$	$8\,^{11}/_{16}$	8

Scope of supply

Transportable model for wet installation (installation type P)

- Pump set complete with power cable
- Feet (and foot plate, if applicable)

Stationary wet installation (installation type S)

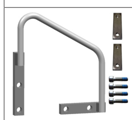
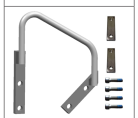
- Pump set complete with power cable
- Claw with sealing elements and mounting elements
- Mounting bracket with mounting elements
- Base elbow with mounting elements

Accessories

Installation parts for stationary pump sets

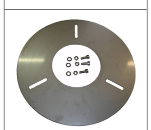
Overview of installation parts for stationary installation

	Item	Description	Sizes	Connection	Mat. No.	[lbs]	[kg]
Guide cable arrangement							
	P4 + P5	Installation parts for stationary wet installation (guide cable arrangement) Consisting of: flanged base elbow, suspension bracket, mounting bracket, claw with stainless steel screws/bolts	Amarex N Inclined claw	DN 50/50: ASME	39023284	43	19.5
			Amarex N Straight claw	DN 50/50: ASME	39023283	32	14.5
			Amarex N	DN 65/65: ASME	39023285	39	17.6
			Amarex N	DN 80/80: ASME	39023286	65.3	29.6
			Amarex N	DN 80/100: ASME	39023523	65.0	29.5
			Amarex N	DN 100/100: ASME	39023287	70.5	32
Twin guide rail arrangement							
	P4 + P5	Installation parts for stationary wet installation (twin guide rail arrangement) Consisting of: flanged base elbow, mounting bracket, adapter, claw with stainless steel screws/bolts, (guide rails not included in KSB's scope of supply)	Amarex N Inclined claw	DN 50, DN3: ASME	39023274	31	14
			Amarex N Straight claw	DN 50, DN3: ASME	39023275	46.3	21
			Amarex N	DN 80, DN3: ASME	39023276	75	34
			Amarex N	DN 80/100, DN3: ASME	39023522	75	34
			Amarex N	DN 100, DN3: ASME	39023277	80	36
Claw							
	P5	Claw Amarex N A48 Class 40B with stainless steel screws Guide cable arrangement	Amarex N Straight claw	DN 50	39022248	2.4	1.2
			Amarex N Inclined claw	DN 50	39022252	15.4	7
			Amarex N	DN 65	39021018	4.2	2
			Amarex N	DN 80 / DN 100	39021020	6.8	3.5
	P5	Claw Amarex N A48 Class 40B with stainless steel screws/bolts Twin guide rail arrangement	Amarex N Inclined claw	DN 50	39022990	13.2	6
			Amarex N Straight claw	DN 65	39022993	16.1	7.3

	Item	Description	Sizes	Connection	Mat. No.	[lbs]	[kg]
	P5	Claw Amarex N A48 Class 40B with stainless steel screws/bolts Twin guide rail arrangement	Amarex N Straight claw	DN 80	39022996	21.4	9.7
				DN 100	39022999	32.4	14.7
Lifting bail							
	-	Lifting bail made of stainless steel 304 with screws/bolts made of stainless steel 316, for lowering the pump set at an angle	Amarex N S 50-170		39022395	1.3	0.6
			Amarex N S 50-220, F 50-170, F 50-220, F 65-170, F 80-220, F 100-220		39018004	2.2	1
	-	Lifting bail made of stainless steel 304 with screws/bolts made of stainless steel 316, for lowering the pump set in a perfectly vertical position	Amarex N	DN 32 / DN 50	39023593	1.76	0.85
				DN 65 / DN 80 / DN 100	39023594	2.65	1.2
Conversion parts							
	-	Conversion parts for conversion to twin guide rail arrangement, consisting of: mounting bracket, stainless steel screws/bolts, adapter, anchor bolts	Amarex N	DN 50/DN 65	39023308	0.9	0.4
				DN 80/DN 100	39023310	5.5	2.5

Installation parts for transportable pump sets

Overview of installation parts for transportable pump sets

	Item	Description	Sizes	Mat. No.	[lbs]	[kg]
	P6	3 feet	Amarex N DN 50, 65, 80, 100	39022260	0.9	0.4
		Foot plate including screws (only for uneven mounting surfaces and in combination with feet)	Amarex N DN 50, 65, 80, 100	39022262	2.0	0.9

Chain for stationary and transportable pump sets

Overview of chains for stationary and transportable pump sets

Item	Description	Sizes	Mat. No.	[lbs]	[kg]
P7	Chain made of stainless steel 316 with shackle made of stainless steel 304 and hook made of stainless steel 304 Max. load: 1200 lbs [554.3 kg]		9063		

3/11/2019

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