

Submersible Motor Pump

Amarex N

50 Hz
DN 50 - DN 100

Type Series Booklet



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 [m ³ /h]	≤ 190
	Q [l/s]	≤ 53
Head	H [m]	≤ 49

Characteristic		Value
Fluid temperature	T [°C]	≤ 40 ¹⁾
Motor rating	P ₂ [kW]	0,8 - 4,2

Designation

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

Designation key

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 poles
	4	4 poles
YL	Motor version	
	UL	Without explosion protection, for fluid temperatures of up to 55 °C
	YL ²⁾	Without 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 5)	
	G	Pump casing: grey cast iron EN-GJL-250 Intermediate casing: grey cast iron EN-GJL-250 Impeller: grey cast iron EN-GJL-250
	G1	Pump casing: grey cast iron EN-GJL-250 Intermediate casing: grey cast iron EN-GJL-250 Impeller: Noridur 1.4593 (duplex stainless steel)
	G2	Pump casing: grey cast iron EN-GJL-250 Intermediate casing: grey cast iron EN-GJL-250 Impeller: Norihard 0.9635 (white cast iron)
	GH	Pump casing: grey cast iron EN-GJL-250 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 design

Drive

- Three-phase asynchronous squirrel-cage motor
- Motors integrated in explosion-proof pump sets are supplied in Ex d IIB type of protection.

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.

Shaft seal

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

Impeller type

- Various, application-based impeller types

D impeller:

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

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

Materials

Overview of material variants for standard variants

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	EN-GJL-250			EN-GJL-250			EN-GJL-250			
Intermediate casing	EN-GJL-250			EN-GJL-250			EN-GJL-250			
Impeller	EN-GJL-250			EN-GJL-250			EN-GJL-250			
Cutter	1.2080.02 (K100)			-			-			
Shaft	1.4021			1.4021			1.4021			
Mechanical seal	Drive end	Carbon/Al ₂ O ₃			Carbon/Al ₂ O ₃			Carbon/Al ₂ O ₃		
	Pump end	SiC/SiC			SiC/SiC			SiC/SiC		
Screws/bolts	A2			A2			A2			
Elastomers	NBR			NBR			NBR			

Overview of material variants for standard variants

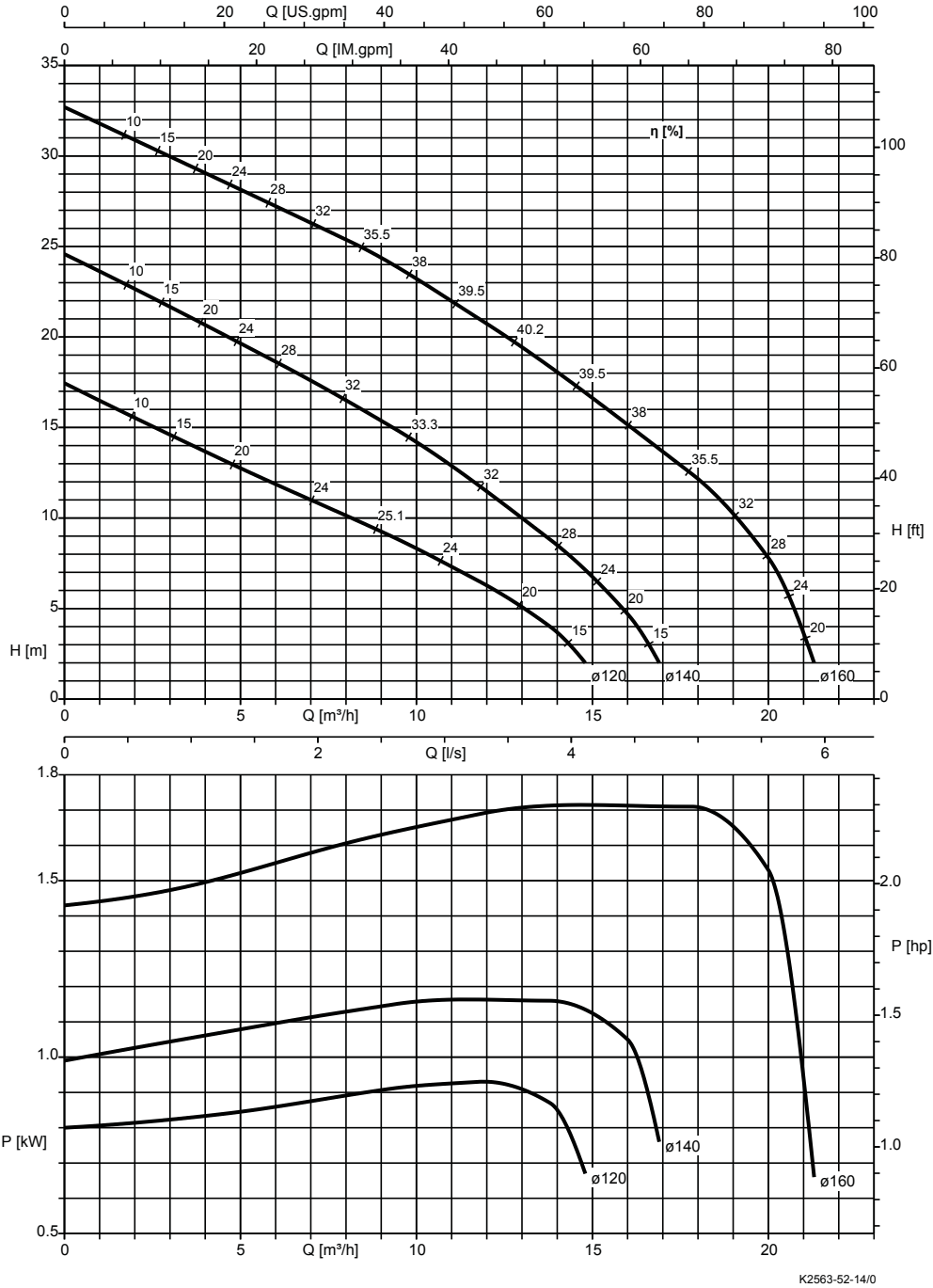
Component	S impeller		D impeller		F impeller		
	Amarex N S 50-172/... Amarex N S 50-222/...		Amarex N D 80-220/... Amarex N D 100-220/...		Amarex N F 50-... Amarex N F 65-... Amarex N F 80-... Amarex N F 100-...		
	G		G		G1	G2	GH
Casing	-		-		EN-GJL-250	EN-GJL-250	EN-GJL-250
Intermediate casing	-		-		EN-GJL-250	EN-GJL-250	0.9635 ⁴⁾
Impeller	-		-		1.4593 ³⁾	0.9635 ⁴⁾	0.9635 ⁴⁾
Cutter	-		-		-	-	-
Shaft	-		-		1.4021	1.4021	1.4021

Characteristic curves

n = 2900 rpm

Amarex N S 50-172, n = 2900 rpm

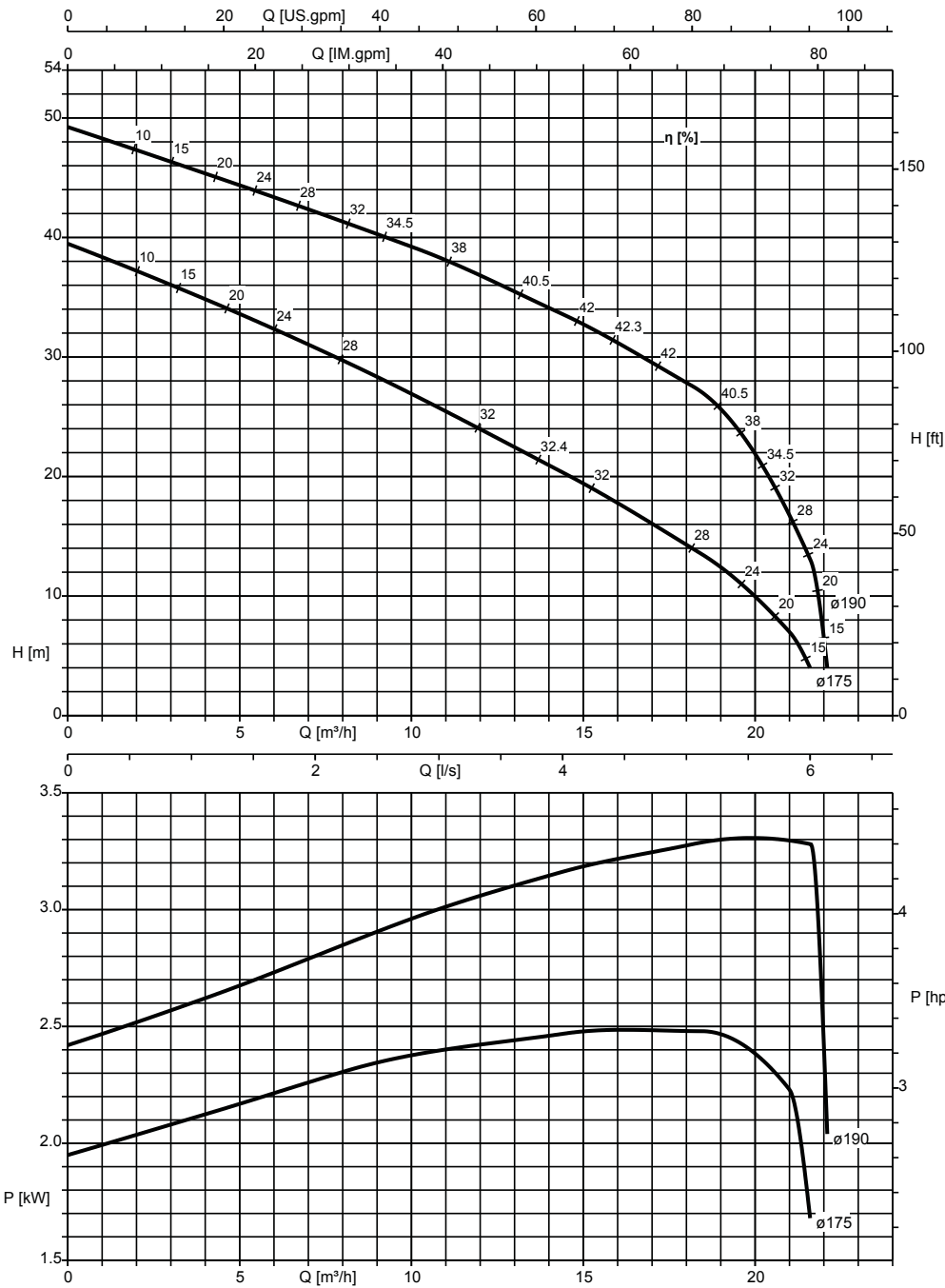
Characteristic curves to ISO 9906 Class 2A / 3B, below 10 kW to § 4.4.2. They refer to the effective motor speed.



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. They refer to the effective motor speed.



Free passage = 6 mm

Modelo	Voltaje	Potencia	Q (m³/h)	0,0	4,0	8,0	10,0	12,0	15,0	17,0	19,0	21,0
		Hp	Q (l/m)	0	67	133	167	200	250	283	317	350
Amarex N S 50-172/002 ULG -120	380 V	1,8	H (m)	17,3	13,8	10,0	8,2	6,2	1,8	-	-	-
Amarex N S 50-172/002 ULG -140	380 V	1,8		24,5	20,8	16,6	14,1	11,6	6,8	2,0	-	-
Amarex N S 50-172/012 ULG -160	380 V	2,6		32,5	29,0	25,2	23,2	20,8	16,7	13,7	10,4	3,5
Amarex N S 50-222/032 ULG -175	380 V	4,2		39,8	34,7	29,8	27,0	24,0	19,5	16,0	12,3	7,0
Amarex N S 50-222/042 ULG -190	380 V	5,7		49,2	45,5	41,4	39,0	36,8	32,8	29,6	25,3	17,0