

Submersible Motor Pump

Amarex KRT

50 Hz

Type Series Booklet



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Type Series Booklet Amarex KRT

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Waste Water

Submersible Motor Pump

Amarex KRT



Main applications

- Waste water management
- Service water supply systems
- Disposal
- Waste water treatment plants
- Sludge disposal

Fluids handled

- Waste water with faeces
- Activated sludge
- Digested sludge
- Raw sludge
- Gas-containing liquids
- Industrial waste water

Operating data

Operating properties

Characteristic	Value	
Flow rate	Q [m ³ /h]	≤ 10080
	Q [l/s]	≤ 2800
Head	H [m]	≤ 120
Fluid temperature	T [°C]	≤ +60
Motor rating	P ₂ [kW]	0,8 - 850

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.
- Enclosure: IP68 to EN 60529/IEC529

Shaft seal

Standard bearings:

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

Reinforced bearings:

- Two bi-directional mechanical seals in tandem arrangement, with leakage chamber

Impeller type

- Various application-oriented impeller types (⇒ Page 13)

Bearings

- Various application-oriented bearings (⇒ Page 8)

Standard bearings:

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

Reinforced bearings:

Drive end:

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

Pump end:


- Grease-lubricated bearings
- Can be re-lubricated

Designation

Example: Amarex KRT K 150-503/155 4 UN G-D IE3

Designation key

Code	Description
Amarex KRT	Type series
K	Impeller type
S/S-max	Impeller with cutter
F/F-max	Free-flow impeller
E/E-max	Closed single-channel impeller
D	Open, diagonal single-vane impeller
K/K-max	Closed multi-channel impeller
150	Nominal discharge nozzle diameter [mm]
500	Maximum nominal impeller diameter [mm]
155	Motor size
4	Number of motor poles
UN	Motor version (⇒ Page 8)
U/UN/UE	Without explosion protection, for a fluid temperature of up to 40 °C
WWN/WE	Without explosion protection, for a fluid temperature of up to 60 °C
X/XN/XE	Explosion protection IIG c Ex db IIB T3, for a fluid temperature of up to 40 °C
Y/YN/YE	Explosion protection IIG c Ex db IIB T4, for a fluid temperature of up to 40 °C

Code	Description	
UN	ZE	Explosion protection  II2G c Ex db IIB T3, for a fluid temperature of up to 60 °C
G	Material variant (⇒ Page 6)	
	G	Standard material variant, grey cast iron
	G1	Like G, impeller made of duplex stainless steel
	G2	Like G, impeller made of white cast iron
	GH	Like G, impeller and discharge cover made of white cast iron
	H	Wetted parts made of white cast iron
	C1	Wetted parts made of duplex stainless steel, mechanical seal with elastomer bellows, screws/bolts made of A4
	C2	Wetted parts made of duplex stainless steel, mechanical seal with covered spring, screws/bolts made of 1.4462
D	Installation type (⇒ Page 34)	
	D	Stationary dry installation, vertical (S1 duty)
	H	Stationary dry installation, horizontal (S1 duty)
	K	Stationary wet installation (S1 duty with motor outside the fluid possible) with guide wire arrangement or guide rail arrangement
	S	Stationary wet installation (S1 duty with submerged motor) with guide wire arrangement or guide rail arrangement
	P	Transportable wet-installed model (S1 duty with submerged motor)
IE3	Motor efficiency classification ¹⁾	
	²⁾	No efficiency classification
	IE2	High Efficiency
	IE3	Premium Efficiency

- 1) IEC 60034-30 standard not binding for submersible motor pumps. Efficiencies calculated/determined according to the measurement method specified in IEC 60034-2. The marking is used for submersible motors that achieve efficiency levels similar to those of standardised motors acc. to the IEC 60034-30 standard.
- 2) Blank

Materials

Overview of available materials

Part No.	Description	Material variant						
		G	G1	G2	GH	H	C1	C2
Pump set								
101	Pump casing	EN-GJL-250			EN-GJN-HB555		1.4517	
135	Wear plate ³⁾	EN-GJL-250		-				
163	Discharge cover	EN-GJL-250		EN-GJN-HB555		1.4517		
210	Shaft	1.4021/C45+N (⇒ Page 8)					1.4021/1.4462/C45+N (⇒ Page 8)	
230	Impeller ⁴⁾	EN-GJL-250	1.4517	EN-GJN-HB555			1.4517	
350	Bearing housing	EN-GJL-250				1.4517/EN-GJL-250		
412	O-ring	Nitrile butadiene rubber (NBR)						Viton (FKM)
433.01	Mechanical seal (drive end)	Carbon/SiC						
433.02	Mechanical seal (pump end)	SiC/SiC						
502	Casing wear ring ⁵⁾	EN-GJL-250		VG 434				
66-2	Cooling jacket	1.4571		-				
811	Motor housing	EN-GJL-250				1.4517		
824	Power cable	(⇒ Page 12)						
900	Screws/bolts	A4 ⁶⁾						1.4462
Installation parts								
572	Guide wire suspension bracket	1.4571 up to DN 200; EN-GJL-250 from size 200-500					1.4571	
59-24	Guide wire	1.4401					1.4401/ Tefzel	
72-1	Flanged bend	EN-GJL-250		EN-GJN-HB555		1.4517		
732	Claw	EN-GJL-250 or EN-GJS-400-15/EN-GJS-500-7					1.4517	
885	Lifting chain / lifting rope	Lifting chain: 1.4404 lifting rope: polyamide / polypropylene				Lifting rope: polypropylene		
892	Foot plate / feet	1.0038 + Z				1.4571	1.4517/ 1.4462	
894	Mounting bracket	1.4571 to DN 200; 1.0038 + Z from size 200-500					1.4571	

Description of materials

Grey cast iron EN-GJL-250 (lamellar graphite cast iron)

Lamellar graphite cast iron to EN 1561 is the most widely used cast material for handling municipal sewage, waste water and sludges as well as stormwater and surface water. It is suitable for neutral fluids which are only slightly aggressive and cause little wear. The pH should be ≥ 6.5 , the sand content ≤ 0.5 g/l.

Duplex stainless steel (1.4517 or technically equivalent material)

This type of carbon steel is resistant to cavitation, has excellent strength values and is used for high circumferential speeds. An excellent resistance to pitting corrosion makes ferritic-austenitic stainless carbon steel a popular choice for pumping acidic waste water with a high chloride content as well as seawater and brackish water. Thanks to its good chemical resistance, e.g. against waste water containing phosphorous and sulphuric acid, this material is used in a wide range of applications in the chemical industry and process engineering. Pumps made of duplex stainless steel have a very long service life, even when handling brines, chemical waste water (pH 1 - 12), grey water and landfill leachate.

Wear-resistant white cast iron (EN-GJN-HB555 [XCR14] or technically equivalent material)

Wear-resistant white cast iron is suitable for handling highly abrasive fluids containing sand, ash or iron ore sinter, for example. It has a Rockwell hardness of 61.5 to 68, which is higher than that of hardened chrome steel. Owing to its hardness, the chromium-molybdenum alloy cast iron features a notably higher wear resistance than EN-GJL-250 grey cast iron and other cast materials.

-
- 3) For D impeller
 4) D impeller: EN-GJL-250, with hardened edges
 5) For E impeller and K impeller
 6) Equivalent to 1.4571
-

Product benefits

- Absolutely water-tight resin-sealed cable entries prevent any water from entering the motor – even in the event of a damaged cable.
- Reliable operation ensured by leakage sensors signalling any ingress of moisture into the motor
- Reliable operation ensured by sensors monitoring the motor temperature and preventing overheating
- Non-clogging low-maintenance design with large free passages reduces clogging risk and, consequently, maintenance work.
- High-efficiency motors and variable hydraulic systems for optimum hydraulic efficiency and energy efficiency

Material variants C1 and C2:

- Long service life due to corrosion-resistant wetted parts made of stainless steel

Acceptance tests and warranty

Functional test

- Every pump undergoes functional testing to KSB standard ZN 56525.
- Operating data is guaranteed to DIN EN ISO 9906 / HI / 2B.

Acceptance inspections/tests

- Acceptance test to ISO/DIN or comparable standards available against a surcharge.

Warranty

- Quality is assured by means of an audited and certified quality assurance system to DIN EN ISO 9001.

Selection information

- The indicated heads and performance data apply to material variant G, for fluids with a density $\rho = 1 \text{ kg/dm}^3$ and a kinematic viscosity $\nu \leq 20 \text{ mm}^2/\text{s}$.
- For hydraulic acceptance tests of different material variants reduce the documented efficiencies by 2 percent.

Impeller type

- S, F, E, and D impellers can only be supplied with the documented impeller diameters. Indicate the pump set designation and the impeller diameter in the purchase order.
- K impellers are trimmed to the duty point. Indicate the H/Q data or the impeller diameter in the purchase order. In the hydraulic selection program, the impeller diameter is automatically computed based on the H/Q data and added to the designation of the pump set.

Pump input power

- Adjust the power input to the density of the fluid handled:

$$P_2 \text{ (required)} = \rho \text{ [kg/dm}^3\text{] (fluid handled)} \times P_2 \text{ (documented)}$$
- Select the operating point with the largest power input within an operating range. Select a motor size providing a power reserve to compensate the tolerances in the system characteristic / pump characteristic.

Recommended motor power reserve⁷⁾

P ₂ [kW]	Reserve	
	Mains operation	With frequency inverter
≤ 30	10 %	15 %
> 30	5 %	10 %

- For installation types D and K (with cooling jacket) a power reserve of 1.5 kW must always be added for the cooling circuit.

i In the case of waste water, too low a flow velocity in the discharge line will lead to clogging and increased wear. The flow velocity in the vertical riser must not fall below 2 m/s.

i In the case of waste water, too low a circumferential speed of the impeller will lead to clogging of the hydraulic system (frequency inverter operation). A minimum circumferential speed (measured at the impeller diameter) of 12 m/s must be observed.⁸⁾

7) If larger power reserves are stipulated by local regulations, these larger reserves must be provided.

8) For F impellers, a circumferential speed below 12 m/s is permissible.

Overview of product features / selection tables

Overview of product features

Material variants G, G1, G2, GH

Feature	Motor					
	3 2 E ... 26 2 E	-	55 2 E ... 75 2 E	-	-	-
	2 4 E ... 22 4 E	30 4 E ... 37 4 E	45 4 E ... 75 4 E	35 4 N ... 175 4 N	200 4 N ... 350 4 N	-
	7 6 E ... 18 6 E	22 6 E ... 30 6 E	31 6 E ... 55 6 E	32 6 N ... 165 6 N	190 6 N ... 480 6 N	530 6 N ... 850 6 N
	-	11 8 E ... 22 8 E	30 8 E ... 45 8 E	26 8 N ... 130 8 N	150 8 N ... 400 8 N	460 8 N ... 760 8 N
	-	-	-	40 10 N ... 90 10 N	110 10 N ... 350 10 N	390 10 N ... 660 10 N
Shaft material	-					
Shaft	1.4021					
Shaft protecting sleeve	-			1.4021 ⁹⁾	1.4021	
Bearings	Grease-packed rolling element bearings sealed for life ¹⁰⁾			Regreasable rolling element bearings (pump end) grease-packed rolling element bearings sealed for life (drive end)		
Explosion protection	Non-explosionproof					
Version U	Non-explosionproof					
Version X	⊕ II2G c Ex db IIB T3					-
Version Y	⊕ II2G c Ex db IIB T4				-	-
Version W	Non-explosionproof					
Version Z	⊕ II2G c Ex db IIB T3					-
Motor	-					
Starting method	DOL (690 V only DOL) / star-delta starting					DOL
Electrical voltage	400 V / 380 V ¹¹⁾ / 415 V ¹¹⁾ / 500 V ¹¹⁾ / 690 V ¹¹⁾					400 V / 690 V ¹¹⁾
Cooling	Cooled by surrounding fluid / air cooling ¹²⁾			Cooled by surrounding fluid / via cooling jacket		
Immersion depth	≤ 30 m					
Power cable	-					
Type	See "Overview of power cables"					
Length	10 m / ≤ 40 m ¹¹⁾					
Cable entry	Totally watertight					
Sealing elements	-					
Elastomers	Nitrile butadiene rubber NBR / Viton = fluorocarbon rubber FPM ¹¹⁾					
Shaft seal	Bellows-type mechanical seal / KSB cartridge mechanical seal ¹¹⁾		Bellows-type mechanical seal / mechanical seal with covered spring ¹¹⁾		Stationary mechanical seal with covered spring	

9) For maximum nominal impeller diameters 400/401/402/403 [mm] without shaft protecting sleeve

10) For versions with D impeller and motors 55 2 E ... 75 2 E, 45 4 E ... 75 4 E, 31 6 E ... 55 6 E, 30 8 E ... 45 8 E: regreasable rolling element bearings (pump end) / grease-packed rolling element bearings sealed for life (drive end)

11) Optional

12) Optional for motors 11 2 E ... 26 2 E, 7 4 E ... 22 4 E, 7 6 E ... 18 6 E

Feature	Motor					
	3 2 E ... 26 2 E	-	55 2 E ... 75 2 E	-	-	-
	2 4 E ... 22 4 E	30 4 E ... 37 4 E	45 4 E ... 75 4 E	35 4 N ... 175 4 N	200 4 N ... 350 4 N	-
	7 6 E ... 18 6 E	22 6 E ... 30 6 E	31 6 E ... 55 6 E	32 6 N ... 165 6 N	190 6 N ... 480 6 N	530 6 N ... 850 6 N
	-	11 8 E ... 22 8 E	30 8 E ... 45 8 E	26 8 N ... 130 8 N	150 8 N ... 400 8 N	460 8 N ... 760 8 N
	-	-	-	40 10 N ... 90 10 N	110 10 N ... 350 10 N	390 10 N ... 660 10 N
	-	-	-	-	105 12 N ... 300 12 N	340 12 N ... 560 12 N
Monitoring equipment						
Winding temperature, versions U, W; installation types S, P	Temperature switches (bimetal) in the winding					
Winding temperature, versions X, Y; installation types S, P	Temperature switches (bimetal) in the winding, plus PTC thermistors for explosion protection Temperature switches (bimetal) in the winding, plus temperature switches (bimetal) for explosion protection ¹³⁾					-
Winding temperature; installation types D, H, K	PTC thermistors	-		PTC thermistors		
Coolant temperature; installation types D, K	-			PTC thermistors		
Bearing temperature	-		Pt100 resistance thermometer (pump end) ¹¹⁾	Pt100 resistance thermometer (pump end) Pt100 resistance thermometer (drive end) ¹⁴⁾		
Leakage in the motor space	Leakage sensor in the motor space					
Mechanical seal leakage	-			Float switch in leakage area		
Vibration sensor	-			Internal vibration sensor		
Coating	Environmentally friendly KSB standard coating (colour RAL 5002) / 250 µm two-component epoxy coating ¹¹⁾					
Maximum fluid temperature						
Version U	40 °C					
Version X, Y	40 °C					-
Version W	60 °C					-
Version Z	60 °C					-
Tests/inspections						
Hydraulic system	KSB standard (ZN 56525) / S impeller, D impeller, E impeller, F impeller (ISO 9906/A) ¹¹⁾ / K impeller (ISO 9906//1/2/A) ¹¹⁾					
General	KSB standard (ZN 56525)					
Installation type						
Stationary, with guide wire	Installation depths 4.5 m / 15 m ¹⁵⁾ / ≤ 30 m ¹¹⁾					
Transportable	Up to size 300-401 (except sizes 200-500/501, 200-631, 250-630)					-
Stationary, with guide rail arrangement	Installation depths 4.5 m / ≤ 30 m ¹¹⁾					
Stationary, dry-installed	-			With cooling jacket		

13) Only for motors 3 2 E, 2 4 E, 3 4 E

14) Optional for motors 35 4 N ... 175 4 N, 200 4 N ... 350 4 N, 32 6 N ... 165 6 N, 190 6 N ... 480 6 N, 26 8 N ... 130 8 N, 150 8 N ... 400 8 N, 40 10 N ... 90 10 N, 110 10 N ... 350 10 N, 105 12 N ... 300 12 N

15) From size 200-500

Material variants H, C1, C2

Feature	Motor					
	3 2 E ... 26 2 E	-	55 2 E ... 75 2 E	-	-	-
	2 4 E ... 22 4 E	30 4 E ... 37 4 E	45 4 E ... 75 4 E	35 4 N ... 175 4 N	200 4 N ... 350 4 N	-
	7 6 E ... 18 6 E	22 6 E ... 30 6 E	31 6 E ... 55 6 E	32 6 N ... 165 6 N	190 6 N ... 480 6 N	530 6 N ... 850 6 N
	-	11 8 E ... 22 8 E	30 8 E ... 45 8 E	26 8 N ... 130 8 N	150 8 N ... 400 8 N	460 8 N ... 760 8 N
	-	-	-	40 10 N ... 90 10 N	110 10 N ... 350 10 N	390 10 N ... 660 10 N
-	-	-	-	105 12 N ... 300 12 N	340 12 N ... 560 12 N	
Shaft material for material variant H						
Shaft	1.4021					
Shaft protecting sleeve	-		1.4021 ⁹⁾		1.4021	
Shaft material for material variants C1, C2						
Shaft	1.4462 / C45+N			1.4021		
Shaft protecting sleeve	-		1.4462 ⁹⁾		1.4462	
Suction flange	Drilled to DIN 2501 ¹¹⁾					
Bearings	Grease-packed rolling element bearings sealed for life			Regreasable rolling element bearings (pump end) grease-packed rolling element bearings sealed for life (drive end)		
Explosion protection						
Version U	Non-explosionproof					
Version X	⊕ II2G c Ex db IIB T3					-
Version Y	⊕ II2G c Ex db IIB T4					-
Version W	Non-explosionproof					
Version Z	⊕ II2G c Ex db IIB T3					-
Motor						
Starting method	DOL / star-delta starting (690 V only DOL) ¹⁶⁾					DOL
Electrical voltage	400 V / 500 V ¹¹⁾ / 600 V ¹¹⁾					
Cooling	Cooled by surrounding fluid					
Immersion depth	≤ 30 m					
Power cable						
Type	See "Overview of power cables"					
Length	10 m / 40 m ¹¹⁾					
Cable entry	Totally watertight					
Sealing elements						
Elastomers	Nitrile butadiene rubber NBR / Viton = fluorocarbon rubber FPM ¹¹⁾ / fluorocarbon rubber FPM (C2)					

16) Depending on the motor size and voltage


Feature	Motor					
	3 2 E ... 26 2 E	-	55 2 E ... 75 2 E	-	-	-
	2 4 E ... 22 4 E	30 4 E ... 37 4 E	45 4 E ... 75 4 E	35 4 N ... 175 4 N	200 4 N ... 350 4 N	-
	7 6 E ... 18 6 E	22 6 E ... 30 6 E	31 6 E ... 55 6 E	32 6 N ... 165 6 N	190 6 N ... 480 6 N	530 6 N ... 850 6 N
	-	11 8 E ... 22 8 E	30 8 E ... 45 8 E	26 8 N ... 130 8 N	150 8 N ... 400 8 N	460 8 N ... 760 8 N
	-	-	-	40 10 N ... 90 10 N	110 10 N ... 350 10 N	390 10 N ... 660 10 N
	-	-	-	-	105 12 N ... 300 12 N	340 12 N ... 560 12 N
Shaft seal	C1: bellows-type mechanical seal ¹⁷⁾ H, C2: cartridge mechanical seal ¹⁸⁾ , mechanical seal with covered spring ¹⁹⁾		C1: bellows-type mechanical seal ²⁰⁾ H, C2: mechanical seal with covered spring			Stationary mechanical seal with covered spring
Monitoring equipment	Temperature switches (bimetal) in the winding					
Winding temperature, versions U, W	Temperature switches (bimetal) in the winding, plus PTC thermistors for explosion protection ¹³⁾					
Winding temperature, versions X, Y	Temperature switches (bimetal) in the winding, plus PTC thermistors for explosion protection ¹³⁾					
Bearing temperature	-			Pt100 resistance thermometer (pump end) Pt100 resistance thermometer (drive end) ¹⁴⁾		
Motor leakage	Leakage sensor in the motor space					
Coating	H: environmentally friendly KSB standard coating (colour RAL 5002) / H: 250 µm two-component epoxy coating ¹¹⁾ / C1, C2: without coating					
Maximum fluid temperature						
Version U	40 °C			30 °C		
Version X, Y	40 °C			30 °C / 40 °C ²¹⁾		
Version W	60 °C					
Version Z	60 °C					
Tests/inspections						
Hydraulic system	KSB standard (ZN 56525) / S impeller, F impeller (ISO 9906/A) ¹¹⁾ / K impeller (ISO 9906//1/2/A) ¹¹⁾					
General	KSB standard (ZN 56525)					
Installation type						
Stationary, with guide wire	Installation depths 4.5 m / ≤ 30 m ¹¹⁾					
Transportable	Installation depth: 4.5 m					

- 17) Optional: cartridge mechanical seal, maximum nominal impeller diameter ≤ 315 mm
 18) Maximum nominal impeller diameter ≤ 315 mm
 19) Maximum nominal impeller diameter > 315 mm
 20) Optional: mechanical seal with covered spring
 21) For material variant H
 22) EPR = ethylene propylene rubber
 23) ETFE = ethylene tetrafluoroethylene

Overview of power cables




Feature	S1BN8-F rubber-sheathed cable	S07RC4N8-F rubber-sheathed cable	TEHSITE Tefzel cable
Design	Standard	Optional	Optional
Rated voltage	1000 V	750 V	750 V
EMC screening	-	✓	-
Insulation material	EPR ²²⁾	EPR ²²⁾	ETFE ²³⁾
Max. continuous temperature of insulation	90 °C	90 °C	135 °C
For permanent immersion in waste water to DIN VDE 0282-16/HD22.16	✓	✓	✓

Impellers

	Impeller with cutter (impeller type S/S-max)	Suitable for the following fluids: fluids containing coarse substances and/or long fibres
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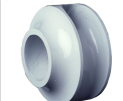
Further fluids (impeller type S/S-max):

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

	Free-flow impeller (impeller type F/F-max)	Suitable for the following fluids: fluids containing solids and stringy material as well as fluids with entrapped air or entrapped gas
	Closed single-channel impeller (impeller type E/E-max)	Suitable for the following fluids: fluids containing solids and stringy material
	Open, diagonal single-channel impeller (impeller type D)	Suitable for the following fluids: fluids containing solid substances and long fibres

Further fluids (impeller types F/F-max, E/E-max, D):

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

	Closed multi-channel impeller (impeller type K/K-max)	Suitable for the following fluids: contaminated, solids-laden, non-gaseous fluids without stringy material
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Further fluids (impeller type K/K-max):

- Activated sludge
- Landfill waste water
- Industrial waste water
- Industrial waste water
- Mechanically treated waste water
- Pre-screened waste water
- Stormwater

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 KSB. Make use of our laboratory's expertise when selecting materials.

Selection aid for materials and hydraulic systems per fluid

Fluid handled ²⁴⁾	Recommended material	Recommended impeller type ²⁵⁾	Comments, further recommendations
Grey water	Grey cast iron	K/K-max, D, E/E-max, F/F-max	Free passage > any solids contained, possibly pre-screened
River water	Grey cast iron	K/K-max, D, E/E-max, F/F-max	Free passage > any solids contained, possibly pre-screened
Stormwater	Grey cast iron	K/K-max, D, E/E-max, F/F-max	Free passage > any solids contained, possibly pre-screened
Waste water			
▪ Untreated municipal waste water	Grey cast iron	F/F-max, S/S-max, D, E/E-max, K/K-max	ATV ²⁶⁾ recommends a free passage of 100 mm; minimum free passage: 76 mm
▪ Containing air and gas	Grey cast iron	F/F-max	Up to 8 %, contact KSB for handling fluids with high outgassing rates
Sludges			
▪ Raw sludge	Grey cast iron	F/F-max, D, E/E-max	Pumpable up to a dry substance content of: 13 % (D), 8 % (F), 6 % (E)
▪ Digested sludge	Grey cast iron	F/F-max, D, E/E-max	Pumpable up to a dry substance content of: 13 % (D), 8 % (F), 6 % (E)
▪ Activated sludge	Grey cast iron	D, K/K-max	Pumpable up to a dry substance content of: 13 % (D), 5 % (K)
Industrial waste water containing:			
▪ Paint suspensions	Grey cast iron	K/K-max	Solvent-free, observe the operator's instructions.
▪ Lacquer/paint/varnish suspensions	Grey cast iron	F/F-max, E/E-max	Solvent-free, contact KSB for silicone-free version
▪ Fibrous material	Grey cast iron	F/F-max, S/S-max, D	-
▪ Chips/swarf	Grey cast iron	K/K-max, F/F-max	Material variant G2 or GH, special mechanical seal; solids content < 5 g/l
▪ Abrasive substances ²⁷⁾	Grey cast iron	K/K-max, F/F-max	Material variant G2 or GH, special mechanical seal; solids content < 5 g/l
Mildly acidic industrial waste water	Grey cast iron	K/K-max, F/F-max	≥ 6.5 material variant G1 and FPM (Viton) O-rings
Non-corrosive waste water			
▪ Ammonium water	Grey cast iron	K/K-max	-
▪ Ammonium hydroxide 5 % NH ₄ OH	Grey cast iron	K/K-max	-
▪ Urea 25 % (NH ₂) ₂ -CO	Grey cast iron	K/K-max	-
▪ Potassium hydroxide 10 % KOH	Grey cast iron	K/K-max	-

24) For any fluids which are not listed in this table contact KSB.

25) The first impeller type listed should be given preference.

26) ATV = German regulatory body for waste water management

27) 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 part load conditions to the left of the duty point.

Fluid handled ²⁴⁾	Recommended material	Recommended impeller type ²⁵⁾	Comments, further recommendations
▪ Calcium hydroxide 5 % Ca(OH) ₂	Grey cast iron	K/K-max	-
▪ Sodium hydroxide 5 % NaOH	Grey cast iron	K/K-max	-
▪ Sodium carbonate 30 % Na ₂ CO ₃	Grey cast iron	K/K-max	-
Non-corrosive waste water containing:			
▪ Aliphatic hydrocarbons, e.g. oils, petrol, butane, methane	Grey cast iron	K/K-max	-
▪ Aromatic hydrocarbons, e.g. benzene, styrene	Grey cast iron	K/K-max	FPM (Viton) O-rings ²⁸⁾
▪ Chlorinated hydrocarbons (e.g. tetrachloroethylene, ethylene chloride, chloroform, methylene chloride)	Grey cast iron	K/K-max	FPM (Viton) O-rings ²⁸⁾
Highly abrasive industrial waste water causing wear (chemically neutral) ²⁹⁾			
▪ Lime water	Wear-resistant white cast iron	K/K-max	Sinter contents < 5 g/l: material variant GH Sinter contents > 5 g/l: material variant H
▪ Lime milk containing quartz and pigment suspensions	Wear-resistant white cast iron	K/K-max	Lime milk contents < 15 %: material variant GH Lime milk contents > 15 %: material variant H
▪ Wash water containing solids	Wear-resistant white cast iron	K/K-max, F/F-max	Material selection based on fluid analysis
▪ Waste water containing dust or ash	Wear-resistant white cast iron	K/K-max	Material selection based on fluid analysis
Water/sand mixture	Wear-resistant white cast iron	K/K-max, F/F-max	Solids contents < 5 g/l: material variant GH Solids contents > 5 g/l: material variant H
Seawater	Duplex stainless steel	K/K-max, F/F-max	Material variant C2 ≤ 25 °C fluid temperature ³⁰⁾
Brackish water	Duplex stainless steel	K/K-max, F/F-max	Material variants C1 or G1 (with 250 µm two-component epoxy resin), depending on salt content
Corrosive industrial waste water	Duplex stainless steel	K/K-max, F/F-max	Material variants C1 or C2, depending on fluid analysis

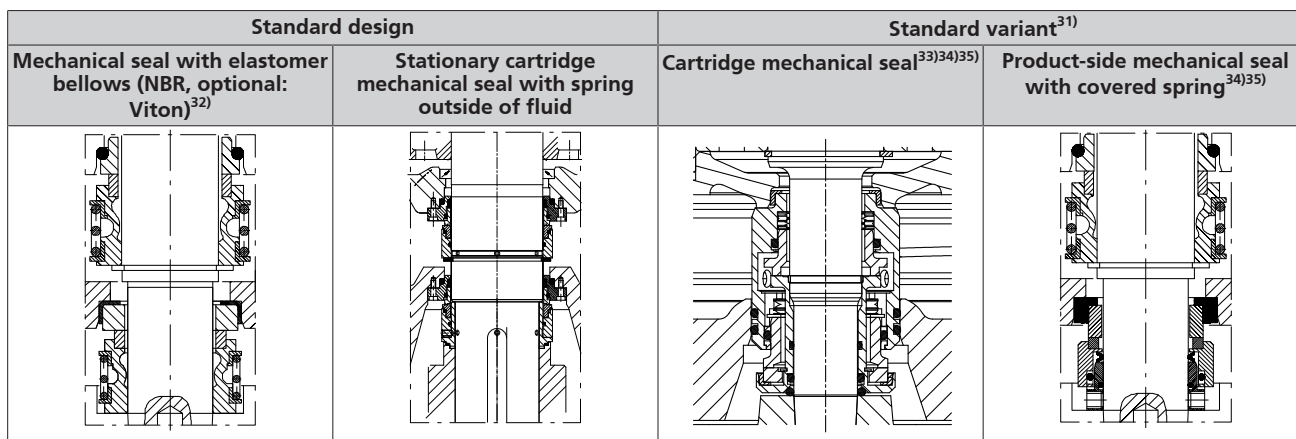
28) The hydrocarbons mentioned may occur in very high concentrations due to the difference in specific weight and their low solubility. If this is the case, contact KSB.

29) The required material variants highly depend on the operating hours, rotational speed and flow velocity.

30) Higher fluid temperatures on request.

Shaft seal

Available shaft seal types per bearing bracket


Technical data

Grey cast iron (G, G1, G2, GH)

Size	Impeller type	Material variant	Impeller				Installation type				Moment of inertia J ₃₆₎ [kgm ²]
			Impeller channels	Free passage [mm]	Max. impeller diameter [mm]	Min. impeller diameter [mm]	D, H		K, S, P		
							Max. operating pressure ³⁷⁾ [bar]	Max. test pressure [bar]	Max. operating pressure ³⁷⁾ [bar]	Max. test pressure [bar]	
Quantity											
40-252	S	G	4	7	235	175	-	-	10	13	0,030
40-252	F	G, G1, G2, GH	-	25	210	150	-	-	7,6	9,8	0,030
40-252	K	G, G1, GH	3	15	260	150	-	-	10	13	0,047
50-215	F	G, G1, G2, GH	-	42	210	130	-	-	8	10,5	0,019
50-216	S	G	4	4	210	175	-	-	9	12	0,018
50-216	F	G, G1, G2, GH	-	25	210	120	-	-	6,5	8,5	0,025
65-215	F	G, G1, G2, GH	-	65	210	120	-	-	5,5	7,5	0,025
65-216	E	G	1	65	180	140	-	-	5,5	7,5	0,020
65-217	F	G, G1, G2, GH	-	65	200	120	7	10,5	6	8	0,020
80-215	F	G, G1, G2, GH	-	76	200	120	5,5	8,5	4,5	6	0,025
80-216	F	G, G1, G2, GH	-	76	210	120	-	-	5	6,5	0,025
80-216	E	G	1	76	210	160	-	-	5,5	7,5	0,035
80-252	F	G, G1, G2, GH	-	76	265	150	6	9	6,3	8,2	0,140
80-253	F	G, G1, G2, GH	-	76	265	150	6	9	6,3	8,2	0,140
80-253	E	G	1	76	270	225	6	9	2,8	3,7	0,170
80-253	K	G, G1, GH	2	33	220	140	-	-	6,6	8,6	0,150
80-255	F	G	-	46	230	145	-	-	6,2	8,1	0,057
80-315	D	G, G1	1	65	260	230	10	15	11	15	0,124
80-317	D	G, G1	1	76	220	180	10	15	6	9	0,047
100-215	F	G, G1, G2, GH	-	100	210	120	-	-	4	5,5	0,025
100-253	E	G	1	76	270	210	5,5	8,5	4,5	6	0,150
100-253	D	G, G1	1	76	265	234	6	9	3,5	4,6	0,115
100-253	K	G, G1, G2, GH	2	76	256	200	4,5	7	3,5	4,6	0,150
100-254	F	G, G1, G2, GH	-	100	265	200	6	9	3,4	4,5	0,056
100-254	K	G, G1, GH	2	71	256	210	6	9	2,5	3,2	0,070
100-255	E	G	1	90	245	202	6	9	2,2	2,9	0,160
100-315	F	G, G1, G2, GH	-	100	310	270	-	-	3,5	4,6	0,056

31) A surcharge and longer delivery times apply to standard variants.

32) For all types of waste water

33) For a maximum nominal impeller diameter of 315 mm only available in combination with motor generation "E"

34) For very abrasive fluids or fluids containing metallic particles (e.g. shavings from drilling)

35) Standard on material variants H and C2 (optionally available for material variants G, G1, G2, GH and C1)

36) Data applies to maximum impeller diameter and impeller with water fill.

37) Permissible operating pressure = inlet pressure + pressure at Q = 0

Size	Impeller type	Material variant	Impeller				Installation type				Moment of inertia J ⁽³⁶⁾ [kgm ²]
			Impeller channels	Free passage [mm]	Max. impeller diameter [mm]	Min. impeller diameter [mm]	D, H		K, S, P		
							Max. operating pressure ⁽³⁷⁾ [bar]	Max. test pressure [bar]	Max. operating pressure ⁽³⁷⁾ [bar]	Max. test pressure [bar]	
100-315	E	G	1	100	330	262	-	-	4,3	5,6	0,260
100-315	D	G, G1	1	75	222	196	-	-	6,8	8,8	0,065
100-315	K	G, G1, GH	2	80	312	254	-	-	4	5,2	0,150
100-316	D	G, G1	1	85	306	270	-	-	3,6	4,7	0,233
100-317	E	G	1	76	328	286	7	10,5	6	8	0,250
100-400	K	G, G1	2	76	408	355	10	15	9,2	12	1,100
100-401	F	G, G1, G2, GH	-	100	390	325	10	15	7,6	9,8	0,248
100-401	E	G	1	80	412	389	-	-	5,1	6,6	0,600
100-401	K	G, G1, GH	2	50	404	310	10	15	9,3	12,1	0,504
150-253	D	G, G1	1	100	254	225	6	9	1,9	2,4	0,150
150-315	F	G, G1, G2, GH	-	120	290	250	6	9	1,8	2,3	0,144
150-315	D	G, G1	1	100	317	280	6	9	3,3	4,3	0,289
150-315	K	G, G1, GH	2	76	310	235	6	9	3,5	4,6	0,180
150-317	E	G	1	110	320	254	6	9	3,1	4,1	0,310
150-317	K	G, G1, G2, GH	2	76	309	250	6	9	5	6,5	0,280
150-400	D	G, G1	1	100	363	326	-	-	5,2	6,8	0,573
150-400	K	G, G1, GH	3	76	404	300	10	15	8,4	11	0,830
150-401	F	G, G1, G2, GH	-	135	390	270	10	15	4,2	5,5	0,248
150-401	E	G	1	115	407	348	10	15	6,3	8,2	0,680
150-401	D	G, G1	1	110	384	370	-	-	5,3	6,9	0,999
150-401	K	G, G1, GH	2	76	404	310	10	15	8,9	11,6	0,916
150-403	K	G, G1, GH	2	76	408	340	10	15	8,5	11,1	0,691
150-503	K	G, G1, GH	2	100	508	400	10	15	8,6	11,2	0,910
151-401	K	G, G1, GH	3	80	408	300	6	9	5	6,5	0,520
151-403	K	G, G1, GH	2	76	408	340	10	15	9,3	11,9	0,691
200-401	E	G	1	120	400	319	10	15	5,7	7,4	0,860
200-315	D	G, G1	1	100	315	280	6	9	2,7	3,4	0,261
200-315	K	G, G1, GH	3	70	295	245	6	9	1,9	2,4	0,220
200-316	K	G, G1, GH	2	100	305	265	6	9	1,7	2,2	0,220
200-317	K	G, G1, G2, GH	3	76	309	240	3	4,5	3,5	5	0,400
200-318	K	G, G1, G2, GH	2	100	309	230	3	4,5	3	4	0,280
200-330	K	G, G1, GH	3	70	326	287	10	15	5,2	6,8	0,350
200-400	D	G, G1	1	100	375	355	-	-	4,2	5,5	0,825
200-401	K	G, G1, GH	3	80	408	300	10	15	7,1	9,2	0,520
200-402	K	G	3	80	408	300	10	15	6,5	8,5	0,520
200-403	K	G, G1, GH	2	90	408	300	10	15	8,7	11,4	0,931
200-501	K	G, G1	2	105	502	450	10	15	6,4	8,3	1,680
200-502	K	G, G1	3	76	504	400	10	15	9,7	12,6	0,830
200-503	K	G, G1	2	90	504	400	10	15	9,8	12,8	1,636
200-631	K	G, G1	2	105	622	540	10	15	9,8	12,8	4,410
250-400	D	G, G1	1	120	370	320	-	-	3,5	4,6	0,653
250-400	K	G, G1, GH	3	85	370	300	10	15	6,6	8,5	0,500
250-401	K	G, G1, GH	2	105	400	310	10	15	6	7,8	0,550
250-403	K	G, G1, GH	2	107	398	300	10	15	7	9,1	1,130
250-630	K	G, G1	4	90	630	500	11	16	11	14,5	2,760
250-632	K	G, G1	3	105	638	500	10	15	10,6	13,8	5,684
250-900	K	G, G1	3	110	840	717	13	19,5	11,7	15,2	19,03
300-400	D	G, G1	1	150	408	375	-	-	1,7	2,2	0,925
300-400	K	G, G1, GH	3	100	408	332	10	15	3,5	4,6	0,750
300-401	K	G, G1, GH	2	135	408	367	10	15	2,3	2,9	0,750
300-403	K	G, G1, GH	2	110	408	300	10	15	3,8	5	1,439
300-420	K	G, G1	3	100	408	370	6	9	5,6	7,3	0,950
300-500	K	G, G1	3	90	504	430	10	15	6,2	8	1,480
300-503	K	G, G1	5	50	480	405	10	15	8,9	11,6	2,500
300-505	K	G, G1	3	127	508	400	10	15	8	10,4	2,919

Size	Impeller type	Material variant	Impeller				Installation type				Moment of inertia J ⁽³⁶⁾
			Impeller channels	Free passage	Max. impeller diameter	Min. impeller diameter	D, H		K, S, P		
							Max. operating pressure ⁽³⁷⁾	Max. test pressure	Max. operating pressure ⁽³⁷⁾	Max. test pressure	
Quantity	[mm]	[mm]	[mm]	[bar]	[bar]	[bar]	[bar]	[kgm ²]			
350-420	K	G, G1	3	100	450	387	6	9	3,5	4,6	1,220
350-500	K	G, G1	3	110	508	426	6	9	5,7	7,4	3,120
350-501	K	G	2	170	509	495	6	9	2,8	3,7	3,000
350-503	K	G, G1	2	140	508	400	6	9	4,6	6	4,073
350-632	K	G, G1	3	140	638	500	10	15	6,5	8,4	6,451
350-633	K	G, G1	2	140	638	500	10	15	9,4	12,2	6,979
350-636	K	G, G1	5	75	595	510	10	15	6,4	8,3	5,420
350-710	K	G, G1	3	110	730	580	10	15	9,4	12,2	10,60
350-713	K	G, G1	2	125	738	580	13	19,5	12,2	16,0	14,557
400-500	K	G, G1	3	130	508	443	6	9	3,4	4,5	3,370
400-632	K	G, G1	3	142	638	527	6	9	5,7	7,41	9,074
400-900	K	G, G1	3	130	830	659	13	19,5	11,3	14,7	17,79
401-710	K	G, G1	3	165	739	587	10	15	8,8	11,5	16,00
401-713	K	G, G1	2	162	738	580	9	13,5	7	9,1	15,894
500-634	K	G, G1	3	132	638	500	5	7,5	4,6	6	9,503
501-710	K	G, G1	3	150	700	586	8,5	13	8,5	11,5	16,00
501-900	K	G, G1	3	202	908	721	9	13,5	8	10,3	45,00
600-520	K	G, G1	3	145	532	457	4	6	2,4	3,2	7,020
600-710	K	G, G1	3	165	736	685	4	6	4,2	5,5	16,96
700-901	K	G, G1	3	180	908	760	9	13,5	7,2	9,3	50,00
700-902	K	G, G1	3	190	850	738	3,5	5	3,5	4,6	40,00

Industrial materials (H, C1, C2)

Size	Impeller type	Material variant	Impeller				Installation type		Moment of inertia J ⁽³⁶⁾
			Impeller channels	Free passage	Max. impeller diameter	Min. impeller diameter	S, P		
							Max. operating pressure ⁽³⁷⁾	Max. test pressure	
Quantity	[mm]	[mm]	[mm]	[bar]	[bar]	[kgm ²]			
40-252	F	H, C1, C2	-	25	210	150	7,6	9,8	0,030
40-252	K	H, C1, C2	3	15	260	150	10	13	0,047
50-215	F	H, C1, C2	-	42	210	130	8,0	10,5	0,019
50-216	F	H, C1, C2	-	25	210	120	6,5	8,5	0,025
65-215	F	H, C1, C2	-	65	210	120	5,5	7,5	0,025
80-216	F	H, C1, C2	-	76	210	120	5,0	6,5	0,025
80-252	F	H, C1, C2	-	76	265	150	6,3	8,2	0,140
80-253	K	H, C1, C2	2	33	220	140	6,6	8,6	0,150
100-253	K	H, C1, C2	2	76	256	200	3,5	5	0,150
100-254	F	H, C1, C2	-	100	265	200	3,4	4,5	0,056
100-254	K	H, C1, C2	2	71	256	210	2,5	3,2	0,070
100-315	F	H, C1, C2	-	100	310	270	3,5	4,6	0,056
100-315	K	H, C1, C2	2	80	312	254	4	5,2	0,150
100-400	K	C1, C2	2	76	408	355	9,2	12	1,100
100-401	F	H, C1, C2	-	100	390	325	7,6	9,8	0,248
100-401	K	H, C1, C2	2	50	404	310	9,3	12,1	0,504
150-315	F	H, C1, C2	-	120	290	250	1,8	2,3	0,144
150-315	K	H, C1, C2	2	76	310	235	3,5	4,6	0,180
150-317	K	H, C1, C2	2	76	309	250	5	6,5	0,280
150-400	K	H, C1, C2	3	76	404	300	8,4	11	0,830
150-401	F	H, C1, C2	-	135	390	270	4,2	5,5	0,248
150-401	K	H, C1, C2	2	76	404	310	8,9	11,6	0,916
150-403	K	H, C1, C2	2	76	408	340	8,5	11,1	0,691
150-500	K	C1, C2	3	60	460	420	8,6	11,2	0,710

Size	Impeller type	Material variant	Impeller				Installation type		Moment of inertia J ⁽³⁶⁾
			Impeller channels	Free passage	Max. impeller diameter	Min. impeller diameter	S, P		
							Quantity	[mm]	
151-401	K	H, C1, C2	3	80	404	300	5	6,5	0,520
151-403	K	H, C1, C2	2	76	408	340	9,3	11,9	0,691
200-315	K	H, C1, C2	3	70	295	245	1,9	2,4	0,220
200-316	K	H, C1, C2	2	100	305	265	1,7	2,2	0,220
200-330	K	H, C1, C2	3	70	326	287	5,2	6,8	0,350
200-401	K	H, C1, C2	3	80	404	330	7,1	9,2	0,520
200-402	K	H, C1, C2	3	80	408	300	6,5	8,5	0,520
200-403	K	H, C1, C2	2	90	408	300	8,7	11,4	0,931
200-500	K	C1, C2	3	76	504	400	9,7	12,6	0,830
200-501	K	C1, C2	2	105	502	450	6,4	8,3	1,680
200-631	K	C1, C2	2	105	622	540	9,8	12,8	4,410
250-400	K	H, C1, C2	3	85	370	300	6,6	8,5	0,500
250-401	K	H, C1, C2	2	105	400	310	6	7,8	0,550
250-403	K	H, C1, C2	2	107	398	300	7,0	9,1	1,130
250-630	K	C1, C2	3	90	630	500	11	14,5	2,760
300-400	K	H, C1, C2	3	100	408	332	3,5	4,6	0,750
300-401	K	H, C1, C2	2	135	408	367	2,3	2,9	0,750
300-403	K	H, C1, C2	2	110	408	300	3,8	5,0	1,439
300-420	K	C1, C2	3	100	408	370	5,6	7,3	0,950
300-500	K	C1, C2	3	90	504	430	6,2	8	1,480
300-503	K	C1, C2	5	50	480	405	8,9	11,6	2,500
350-420	K	C1, C2	3	100	450	387	3,5	4,6	1,220
350-500	K	C1, C2	3	110	508	426	5,7	7,4	3,120
350-630	K	C1, C2	3	135	630	500	7,3	9,4	5,220
350-636	K	C1, C2	5	75	595	510	6,4	8,3	5,420
350-710	K	C1, C2	3	110	730	580	9,4	12,2	10,60
400-500	K	C1, C2	3	130	508	443	3,4	4,5	3,370
400-630	K	C1, C2	3	132	620	546	6,2	8	8,210
500-634	K	C1, C2	3	133	582	520	4,2	5,5	6,110
600-520	K	C1, C2	3	145	532	457	2,4	3,2	7,020
600-710	K	C1, C2	3	165	736	685	4,2	5,5	16,96
700-900	K	C1, C2	3	190	850	738	3,5	4,6	40,00
700-901	K	C1, C2	3	180	908	760	7,2	9,3	50,00

Moments of inertia depending on the motor

2 poles

Motor	Motor type	J
		[kgm ²]
3 2 E	1	0,002
4 2 E	1	0,005
5 2 E	1	0,005
7 2 E	1	0,006
11 2 E	2	0,017
15 2 E	2	0,020
18 2 E	2	0,039
22 2 E	2	0,046
26 2 E	2	0,054
37 2	3	0,130
55 2	3	0,140

4 poles

Motor	Motor type	J
		[kgm ²]
2 4 E	1	0,003
3 4 E	1	0,004
4 4 E	1	0,010
5 4 E	1	0,012
7 4 E	2	0,028
11 4 E	2	0,033
15 4 E	2	0,058
18 4 E	2	0,068
22 4 E	2	0,082
23 4	3	0,070
29 4	3	0,110
35 4	3	0,220
50 4	3	0,250
65 4	3	0,300
35 4 N	4	0,250
50 4 N	4	0,280
65 4 N	4	0,330
80 4 N	4	0,460
95 4 N	4	0,550
110 4 N	4	0,630
130 4 N	4	1,260
155 4 N	4	1,430
175 4 N	4	1,570
200 4 N	4	3,780
250 4 N	4	4,130
300 4 N	4	4,820
350 4 N	4	5,510

6 poles

Motor	Motor type	J
		[kgm ²]
7 6 E	2	0,037
11 6 E	2	0,043
15 6 E	2	0,097
18 6 E	2	0,120
20 6	3	0,100
26 6	3	0,130
32 6	3	0,340
40 6	3	0,420
50 6	3	0,510
32 6 N	4	0,370
40 6 N	4	0,450
50 6 N	4	0,540

Motor	Motor type	J
		[kgm ²]
60 6 N	4	0,660
80 6 N	4	0,800
100 6 N	4	0,940
120 6 N	4	1,890
140 6 N	4	2,250
165 6 N	4	2,550
190 6 N	4	7,300
225 6 N	4	8,570
260 6 N	4	9,840
320 6 N	4	14,30
360 6 N	4	15,90
400 6 N	4	17,60
440 6 N	4	19,20
480 6 N	4	20,70
530 6 N	4	31,50
580 6 N	4	36,30
630 6 N	4	41,10
690 6 N	4	45,80
770 6 N	4	50,60
850 6 N	4	55,30

8 poles

Motor	Motor type	J
		[kgm ²]
10 8	3	0,090
17 8	3	0,120
21 8	3	0,180
26 8	3	0,370
35 8	3	0,470
26 8 N	4	0,400
35 8 N	4	0,500
50 8 N	4	0,660
75 8 N	4	0,940
90 8 N	4	1,980
110 8 N	4	2,250
130 8 N	4	2,550
150 8 N	4	7,300
185 8 N	4	8,570
220 8 N	4	9,840
260 8 N	4	13,30
300 8 N	4	15,90
350 8 N	4	19,10
400 8 N	4	20,70
460 8 N	4	31,50
530 8 N	4	36,30
580 8 N	4	41,10
630 8 N	4	45,80
690 8 N	4	50,60
760 8 N	4	55,30

10 poles

Motor	Motor type	J
		[kgm ²]
40 10 N	4	1,750
60 10 N	4	1,930
75 10 N	4	2,200
90 10 N	4	2,490
110 10 N	4	7,960
150 10 N	4	9,660
190 10 N	4	11,80

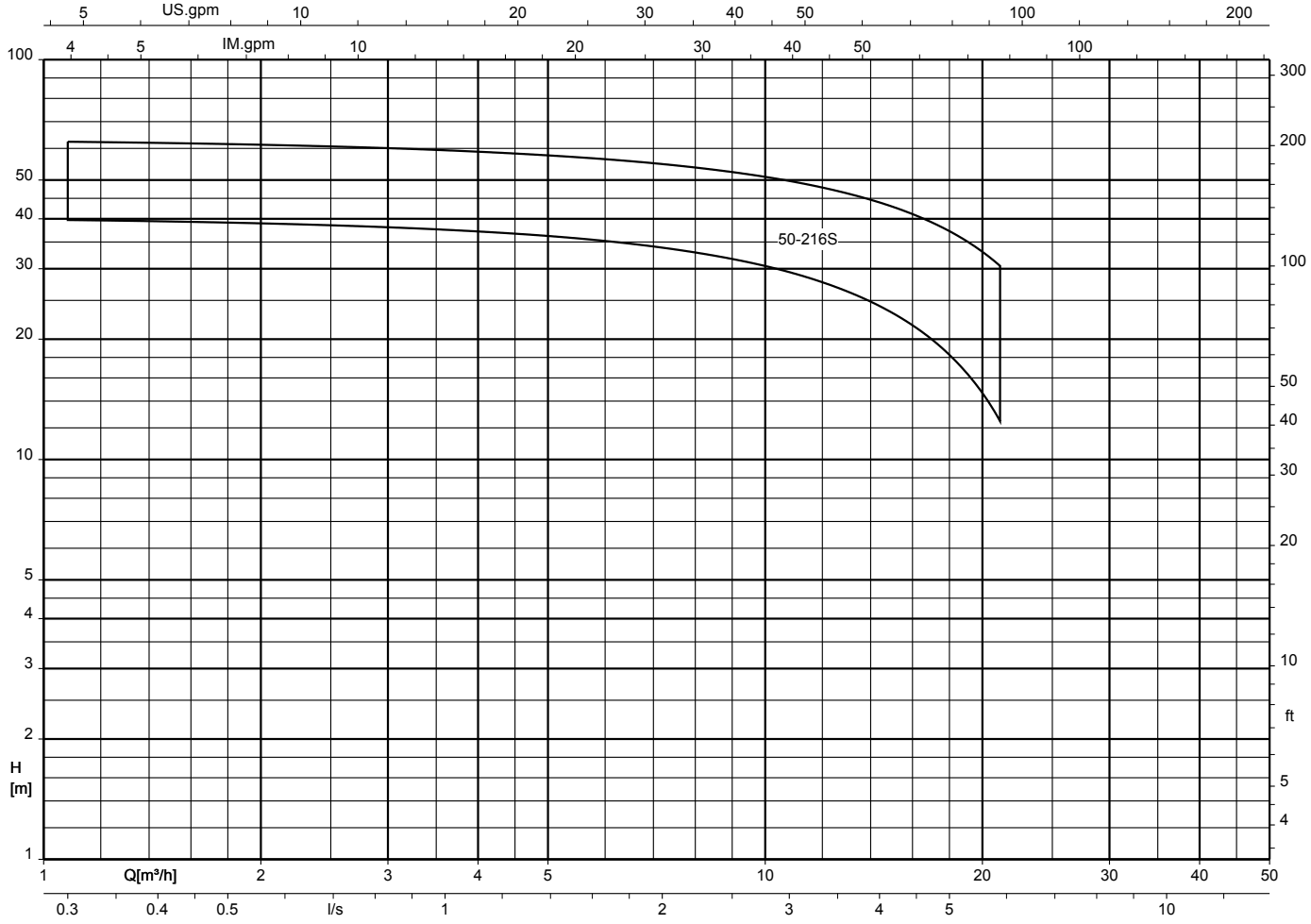
Motor	Motor type	J
		[kgm ²]
230 10 N	4	17,70
270 10 N	4	20,50
310 10 N	4	23,20
350 10 N	4	25,80
390 10 N	4	36,10
430 10 N	4	41,60
475 10 N	4	47,20
535 10 N	4	52,70
600 10 N	4	58,20
660 10 N	4	63,70

12 poles

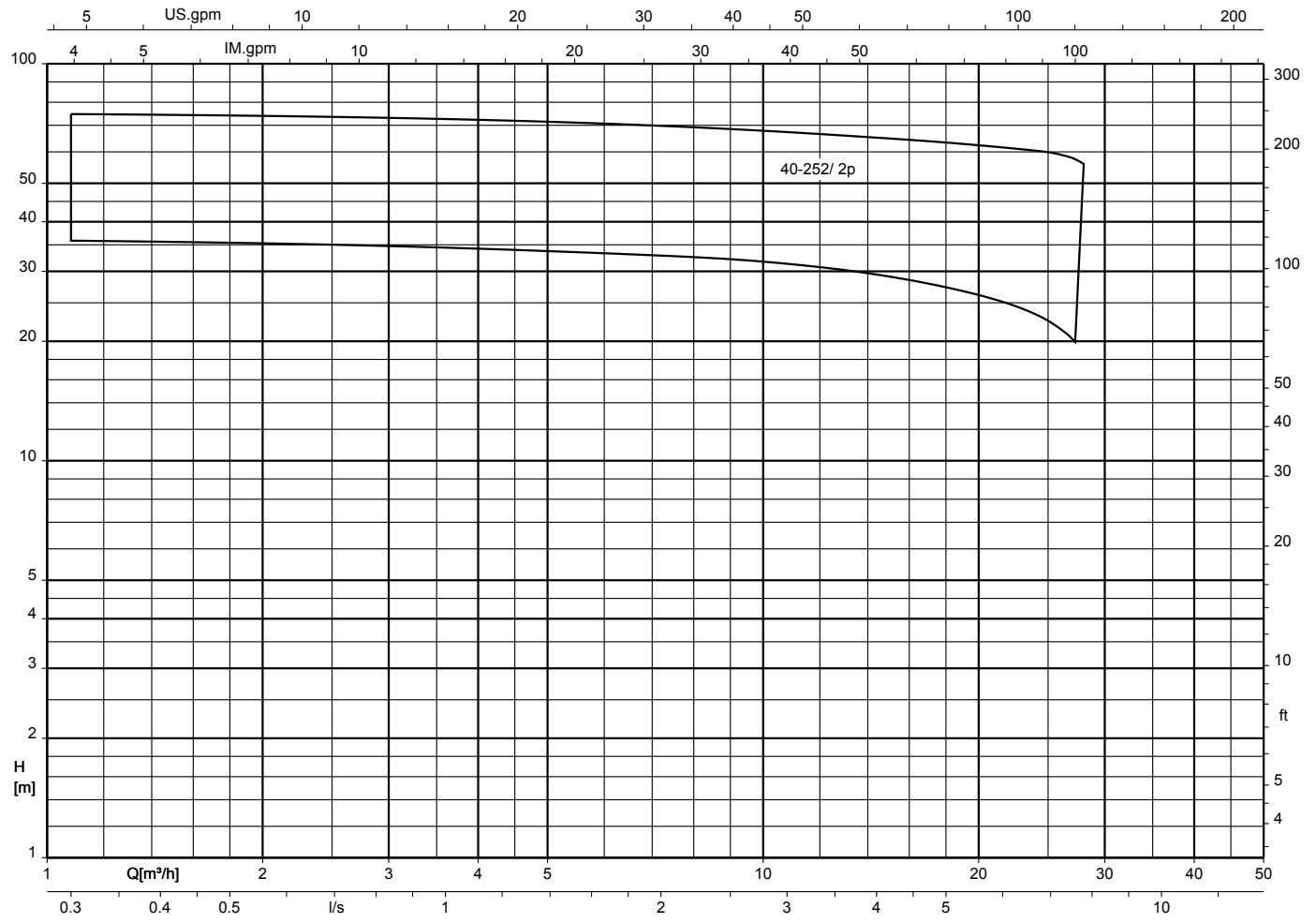
Motor	Motor type	J
		[kgm ²]
105 12 N	4	7,960
135 12 N	4	9,660
165 12 N	4	11,80
195 12 N	4	17,70
230 12 N	4	20,50
265 12 N	4	23,20
290 12 N	4	36,10
300 12 N	4	25,80
340 12 N	4	41,60
380 12 N	4	47,20
450 12 N	4	52,70
490 12 N	4	58,20
560 12 N	4	63,70

Selection charts

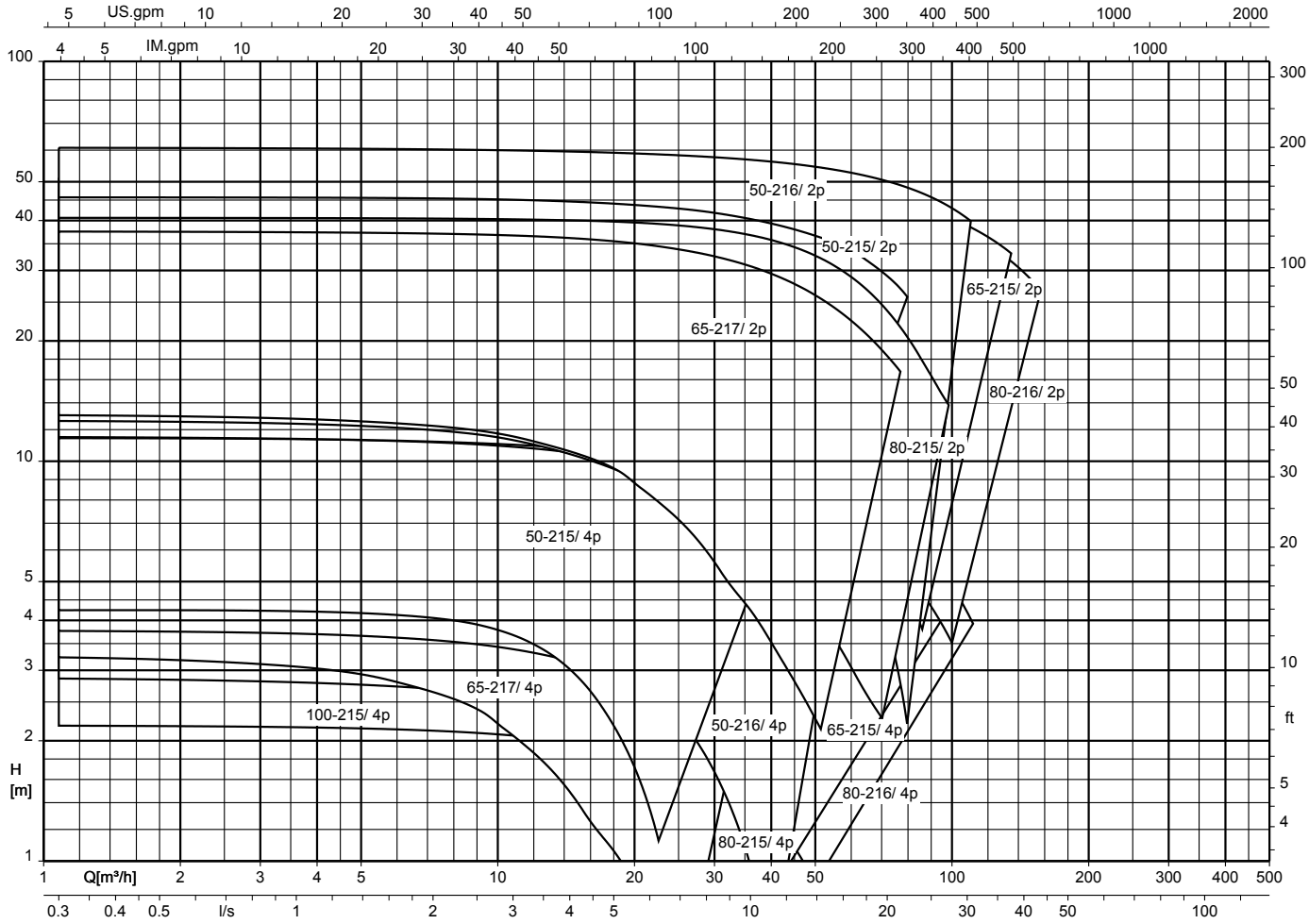
Amarex KRT S-max, n = 2900 rpm



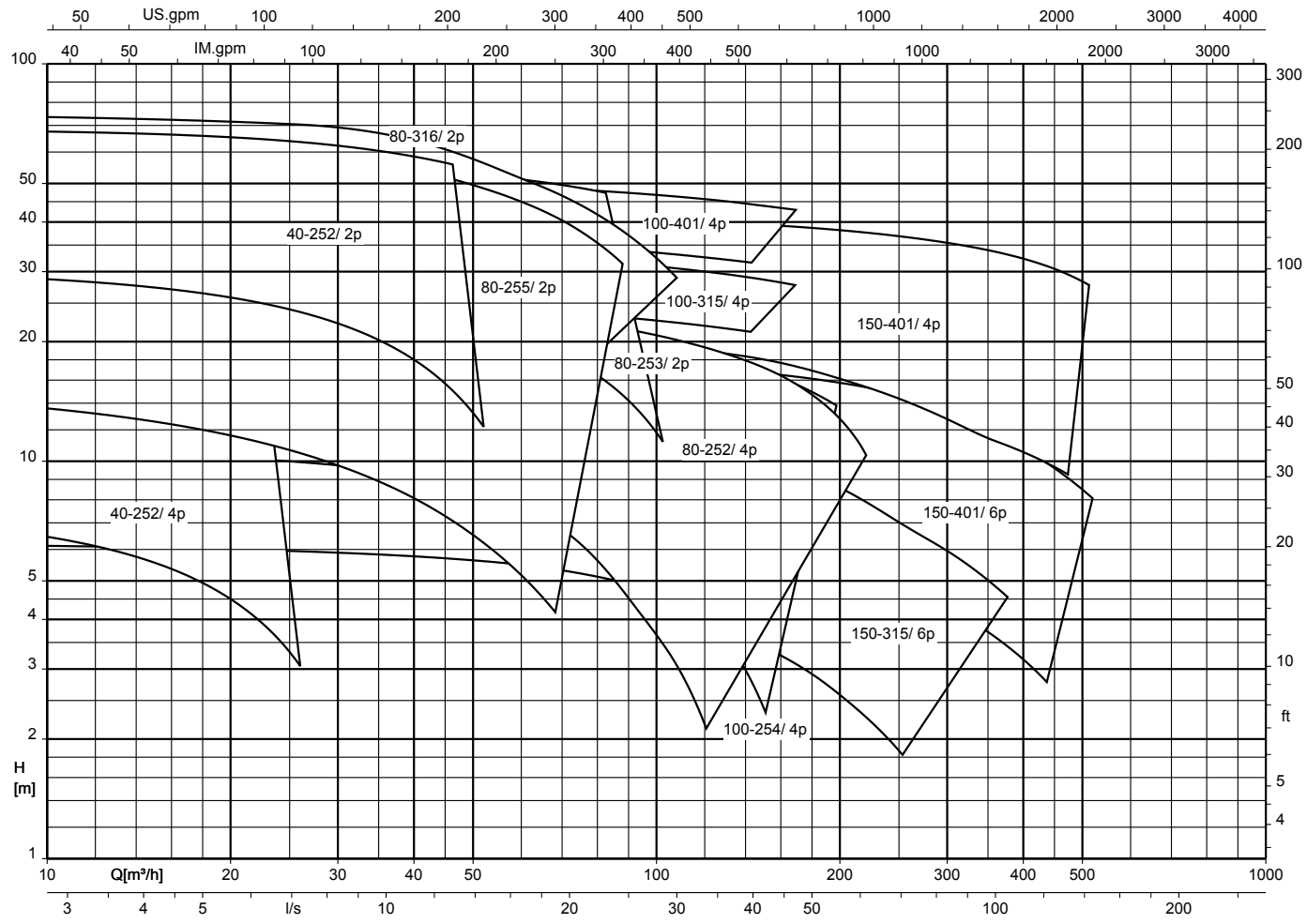
Amarex KRT S, n = 2900 rpm



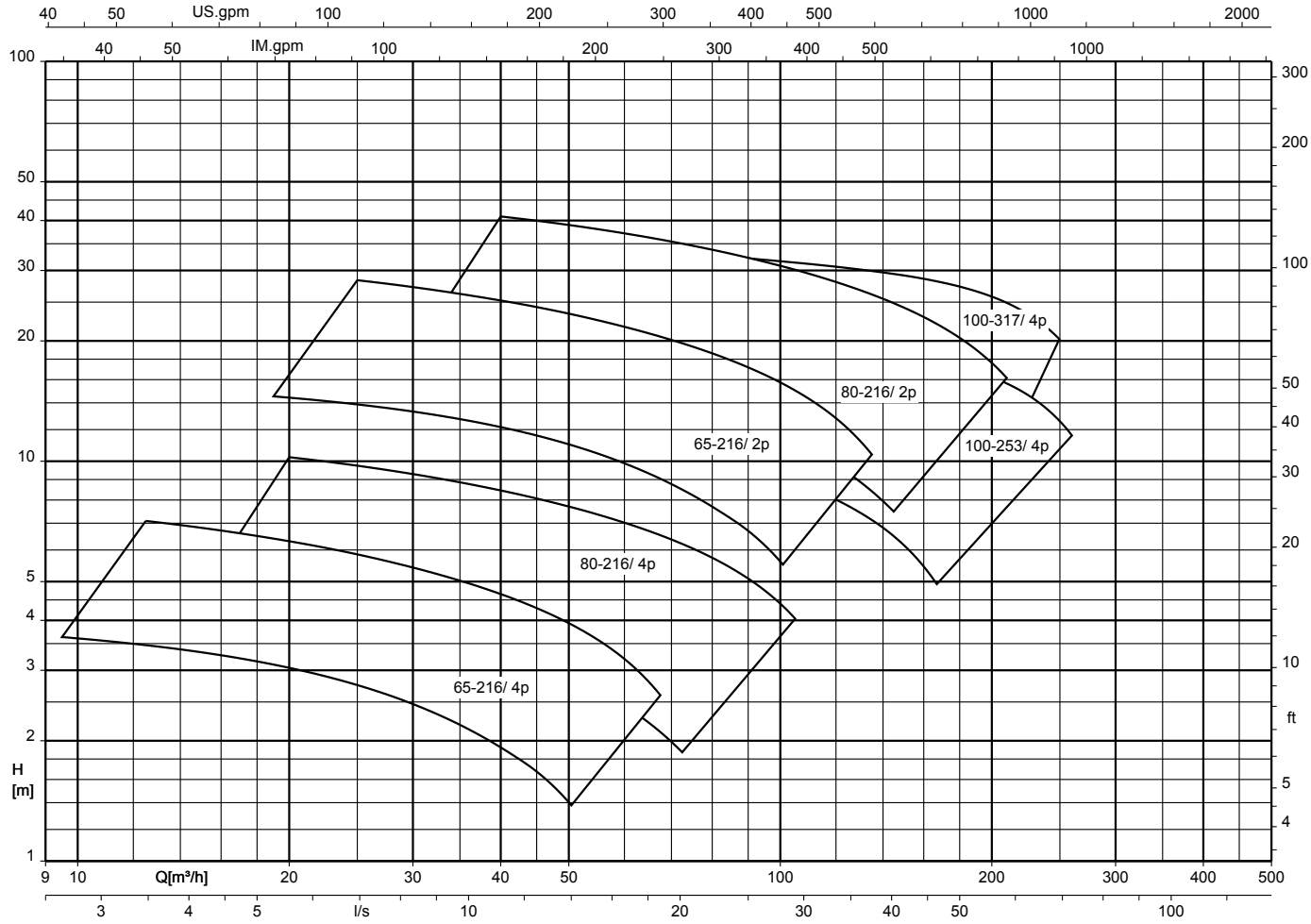
Amarex KRT F-max, n = 2900/1450 rpm



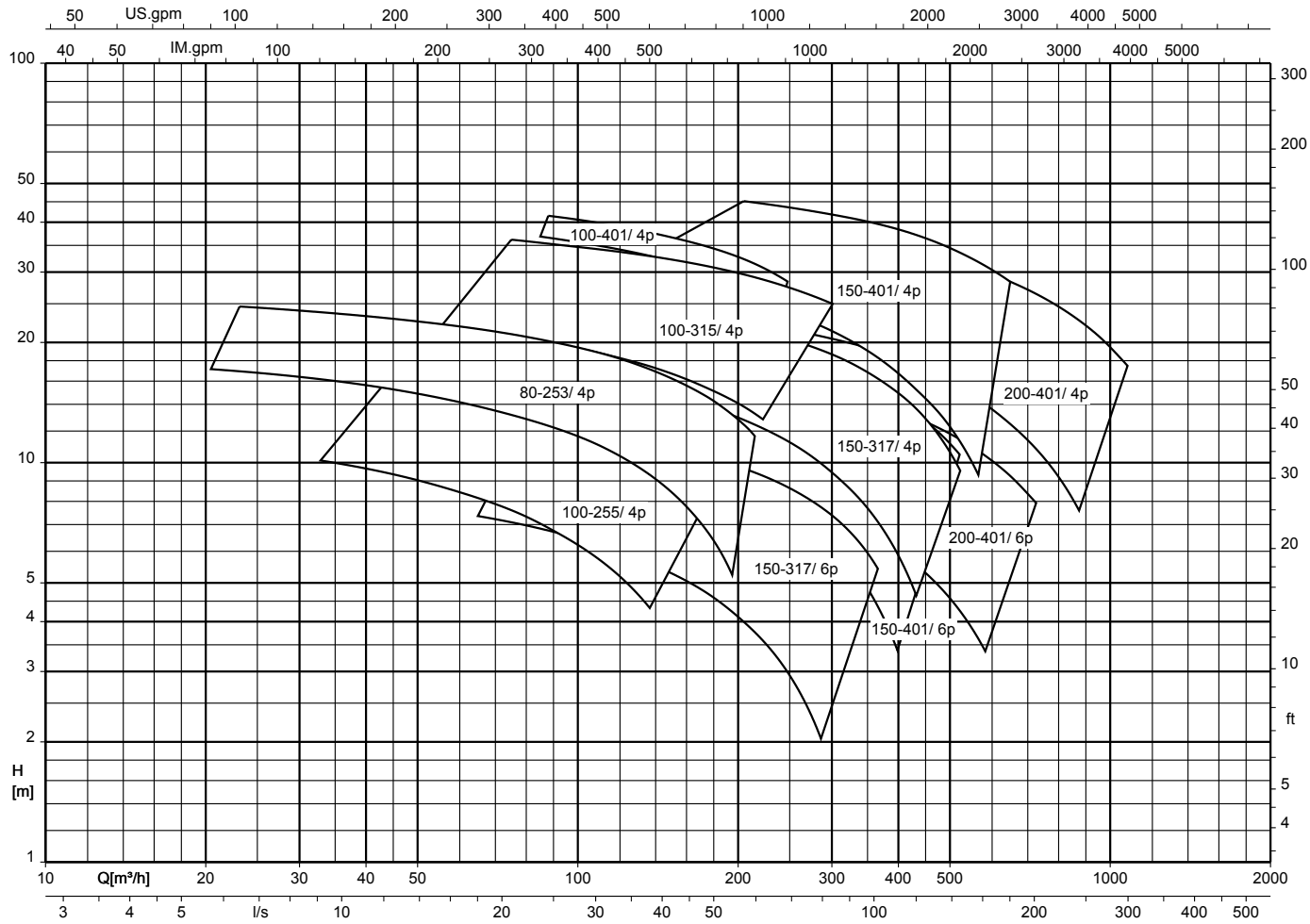
Amarex KRT F, n = 2900/1450/960 rpm



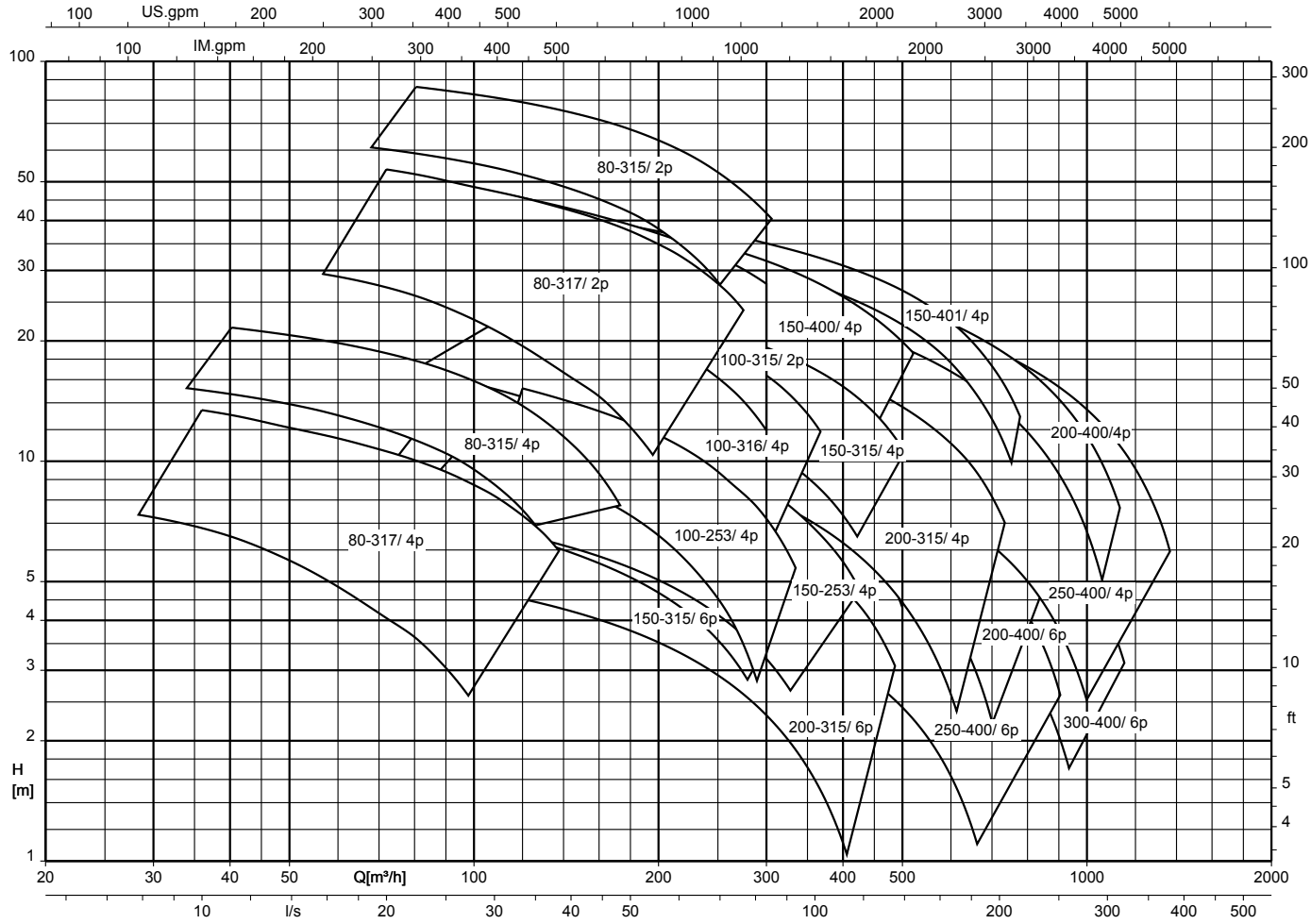
Amarex KRT E-max, n = 2900/1450 rpm



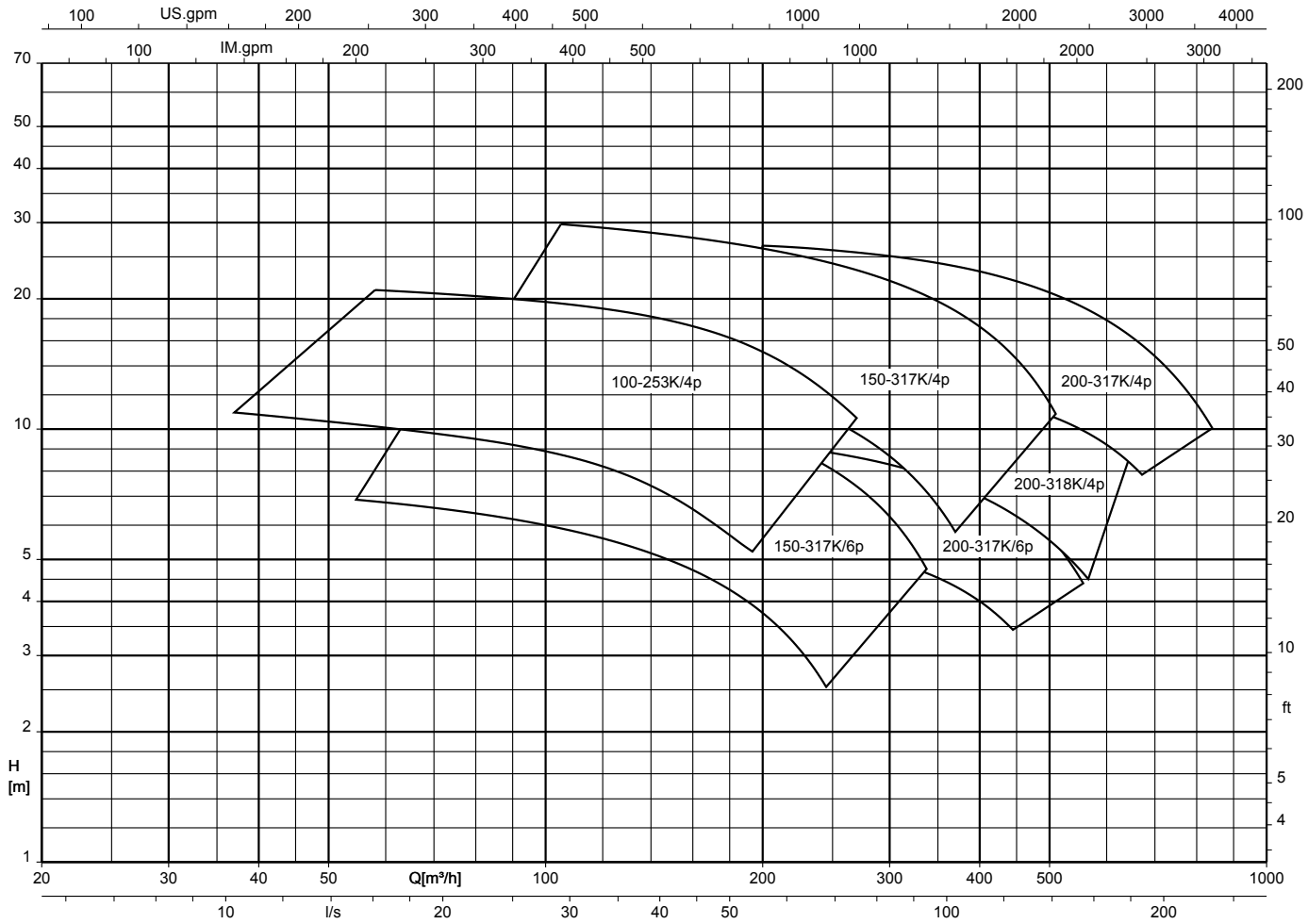
Amarex KRT E, n = 1450/960 rpm



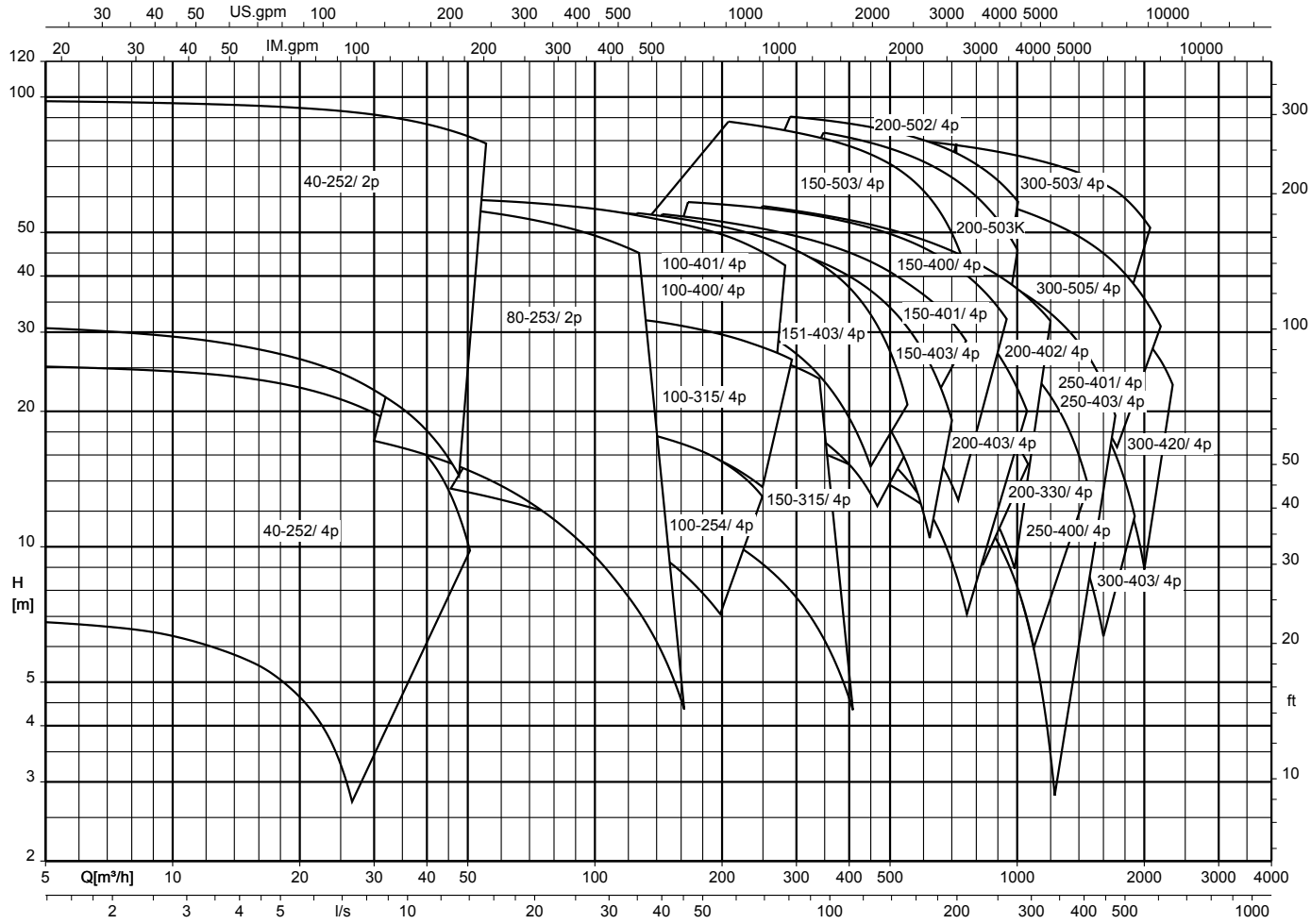
Amarex KRT D, n = 2900/1450/960 rpm



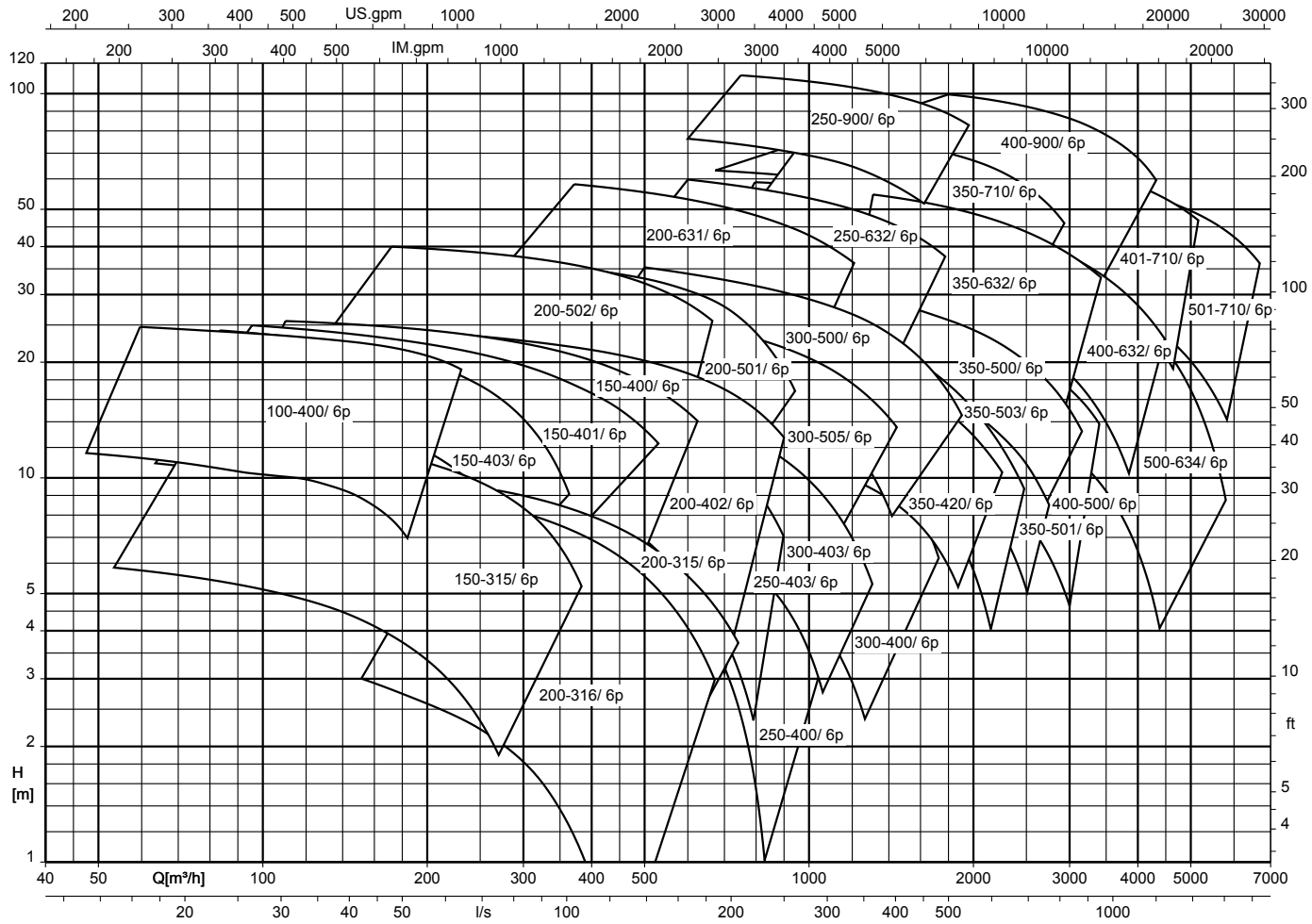
Amarex KRT K-max, n = 1450/960 rpm



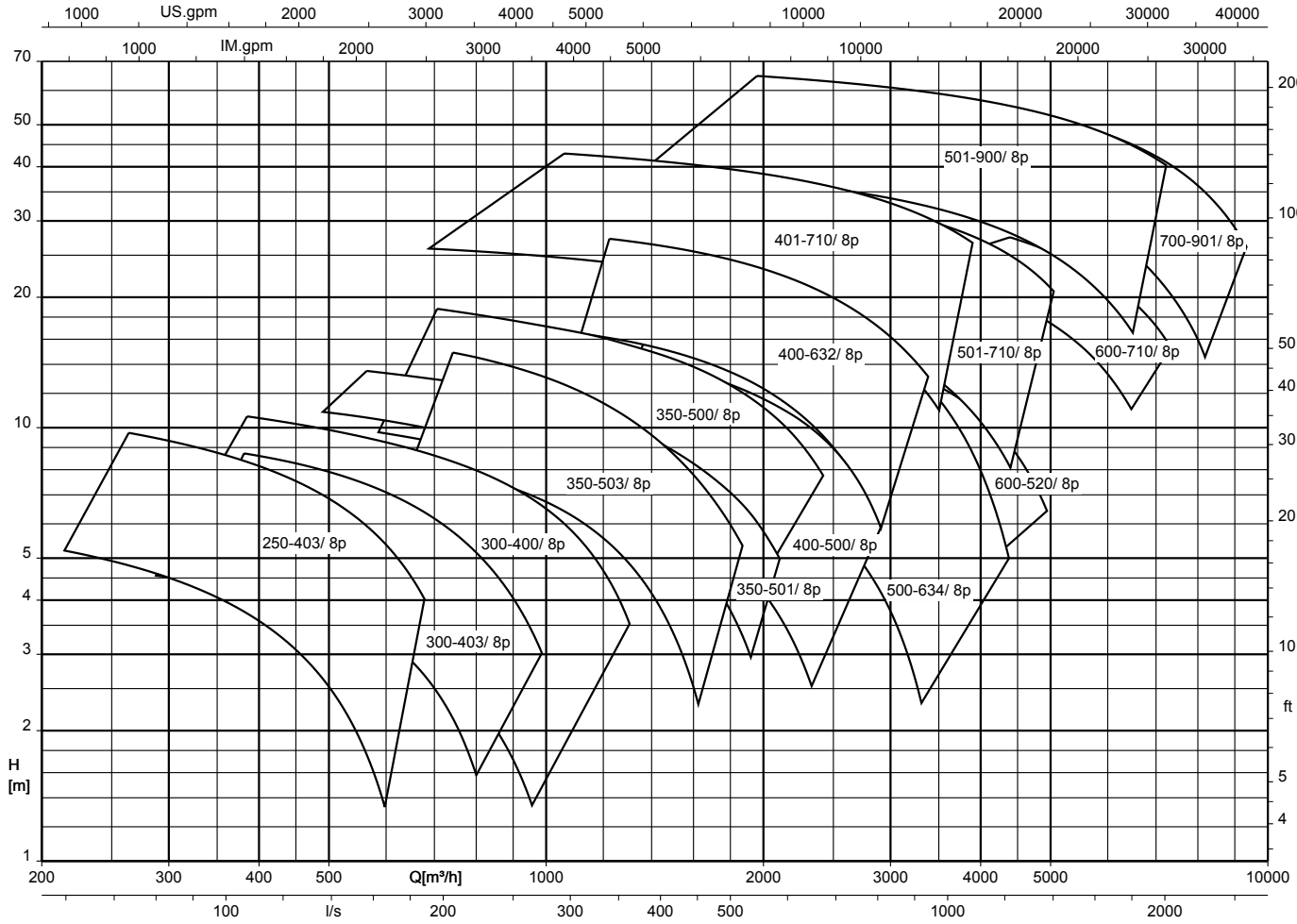
Amarex KRT K, n = 2900/1450 rpm



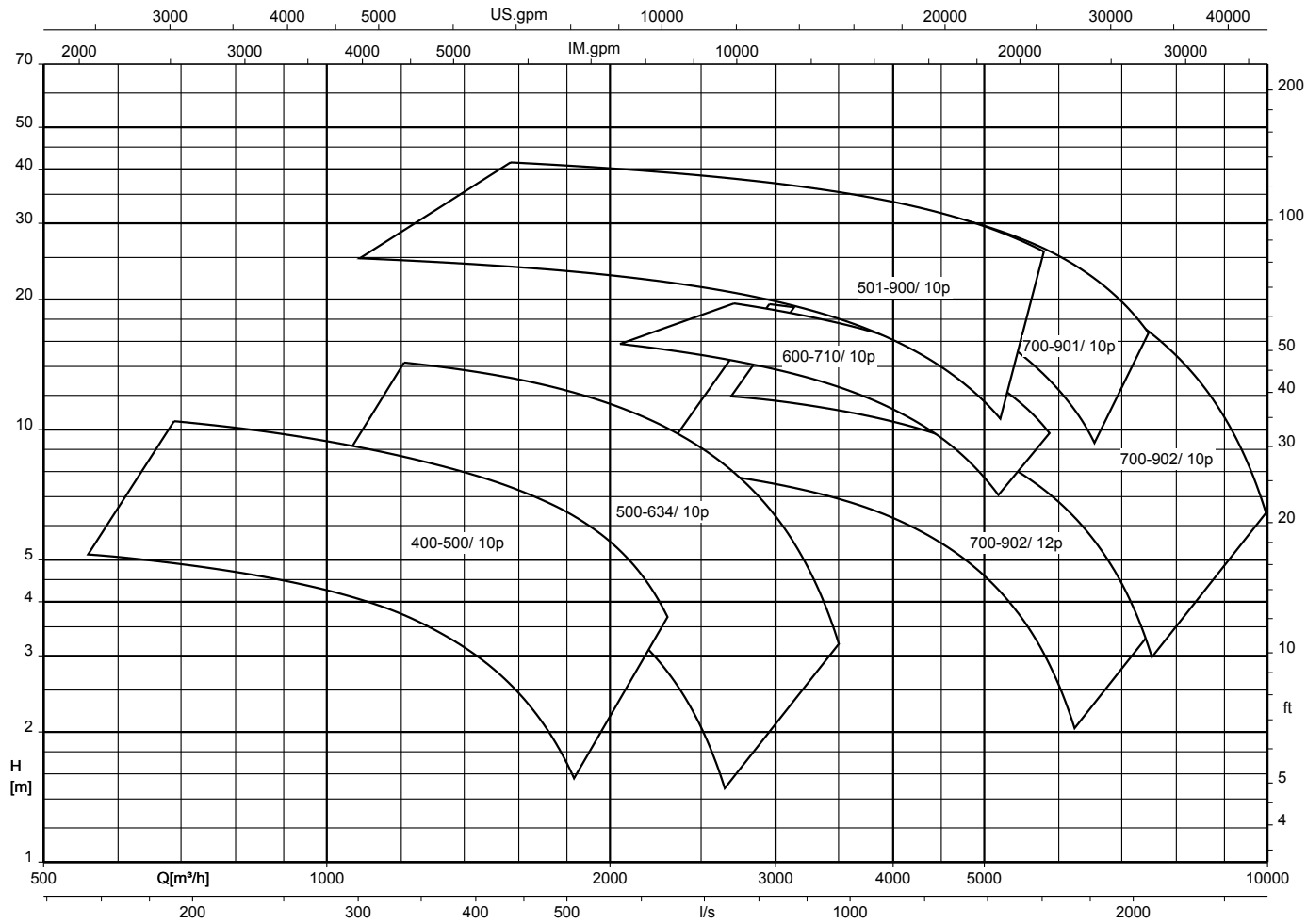
Amarex KRT K, n = 960 rpm



Amarex KRT K, n = 725 rpm



Amarex KRT K, n = 580/480 rpm



Installation types



Fig. 1: Installation types

1	Installation type D: stationary dry installation, vertical (S1 duty)
2	Installation type H: stationary dry installation, horizontal (S1 duty)
3	Installation type K: stationary wet installation (S1 duty with motor outside of the fluid possible) with guide rail arrangement Installation type S: stationary wet installation (S1 duty with submerged motor) with guide rail arrangement
4	Installation type K: stationary wet installation (S1 duty with motor outside of the fluid possible) with guide wire arrangement Installation type S: stationary wet installation (S1 duty with submerged motor) with guide wire arrangement
5	Installation type P: wet installation of transportable model (S1 duty with submerged motor)

Pump sets of installation types D, H and K

are suitable for continuous duty with the motor outside the fluid. Cooling is effected by means of air convection. Versions with a cooling jacket have an additional internal cooling circuit.

Pump sets of installation types P and S

are designed for continuously submerged operation. The motor is cooled by the fluid handled on the motor surface. Operation with the motor outside the fluid handled is possible for short periods.

Scope of supply

Stationary dry installation - vertical (installation type D)

- Pump set complete with power cables
- Duckfoot bend with inspection hole³⁸⁾ and fasteners
- Optional: suction elbow with inspection hole

Stationary dry installation - horizontal (installation type H)

- Foundation rails
- Suction-side flanged spacer with inspection hole³⁹⁾ (optional)

Stationary wet installation (installation types K and S)

- Claw with sealing elements and fasteners
- Lifting rope, lifting chain or lifting bail (optional)
- Mounting bracket with fasteners
- Duckfoot bend with fasteners
- Guide wire / guide rail
(guide rails are not included in KSB's scope of supply)

Transportable wet-installed model (installation type P)

- Foot plate or pump stool with fasteners

38) For nominal discharge nozzle diameter \geq DN 100

39) For nominal discharge nozzle diameter \geq DN 100

General assembly drawings with list of components

Amarex KRT, motor type 1

For the motor type assigned to the motor see (⇒ Page 20)

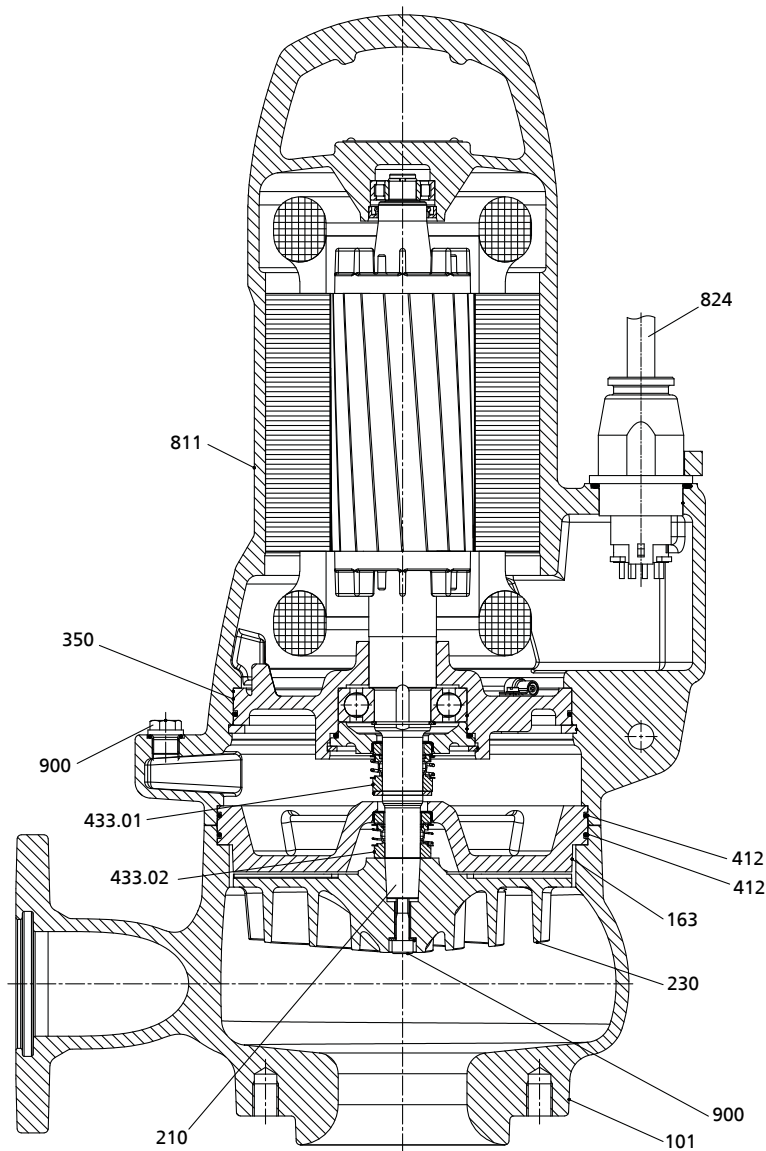


Fig. 2: General assembly drawing, example: Amarex KRT F65-215

List of components

Part No.	Description	Part No.	Description
101	Pump casing	412	O-ring
163	Discharge cover	433.01/.02	Mechanical seal
210	Shaft	811	Motor housing
230	Impeller	824	Power cable
350	Bearing housing	900	Screw

Amarex KRT, motor type 2

For the motor type assigned to the motor see (⇒ Page 20)

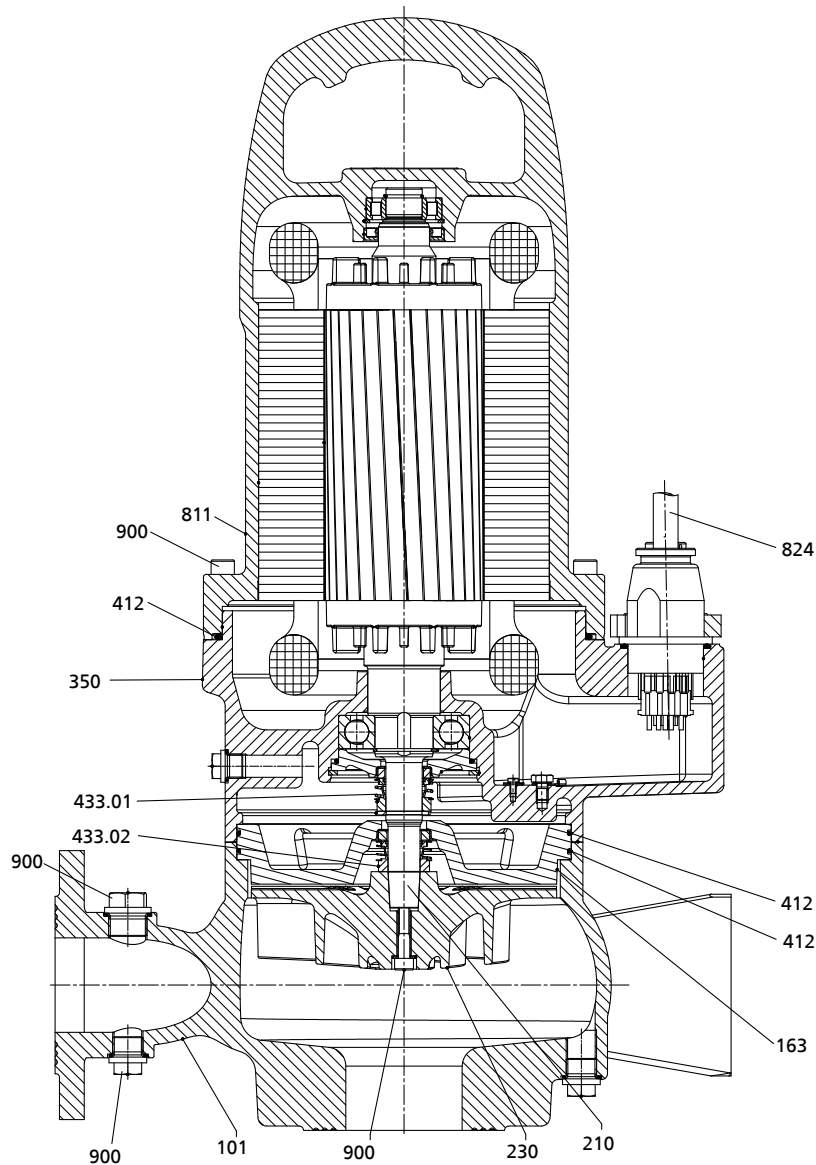


Fig. 3: General assembly drawing, example: Amarex KRT F 65-215

List of components

Part No.	Description	Part No.	Description
101	Pump casing	412	O-ring
163	Discharge cover	433.01/.02	Mechanical seal
210	Shaft	811	Motor housing
230	Impeller	824	Power cable
350	Bearing housing	900	Screw

Amarex KRT, motor type 3

For the motor type assigned to the motor see (⇒ Page 20)

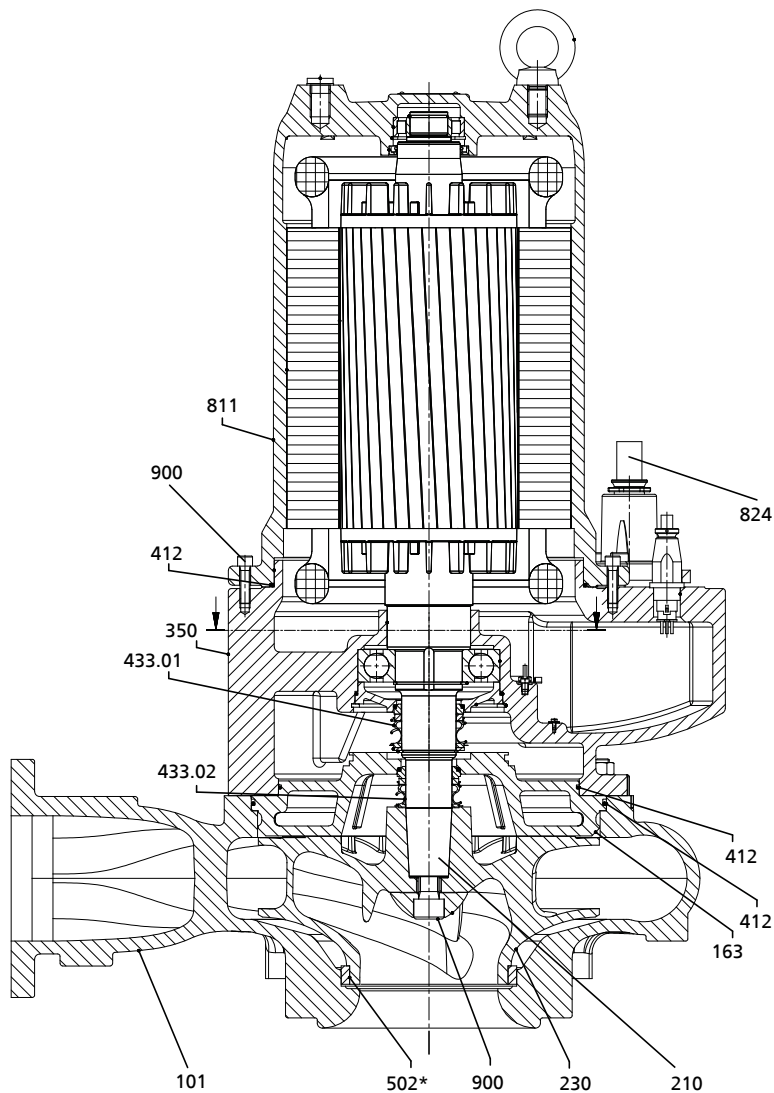


Fig. 4: General assembly drawing, example: Amarex KRT E/K 100-400/75 4 XEG

*: On specific designs only

List of components

Part No.	Description	Part No.	Description
101	Pump casing	433.01/02	Mechanical seal
163	Discharge cover	502	Casing wear ring
210	Shaft	811	Motor housing
230	Impeller	824	Power cable
350	Bearing housing	900	Bolt/screw
412	O-ring		

Amarex KRT, motor type 4, installation types S and P

For the motor type assigned to the motor see (⇒ Page 20)

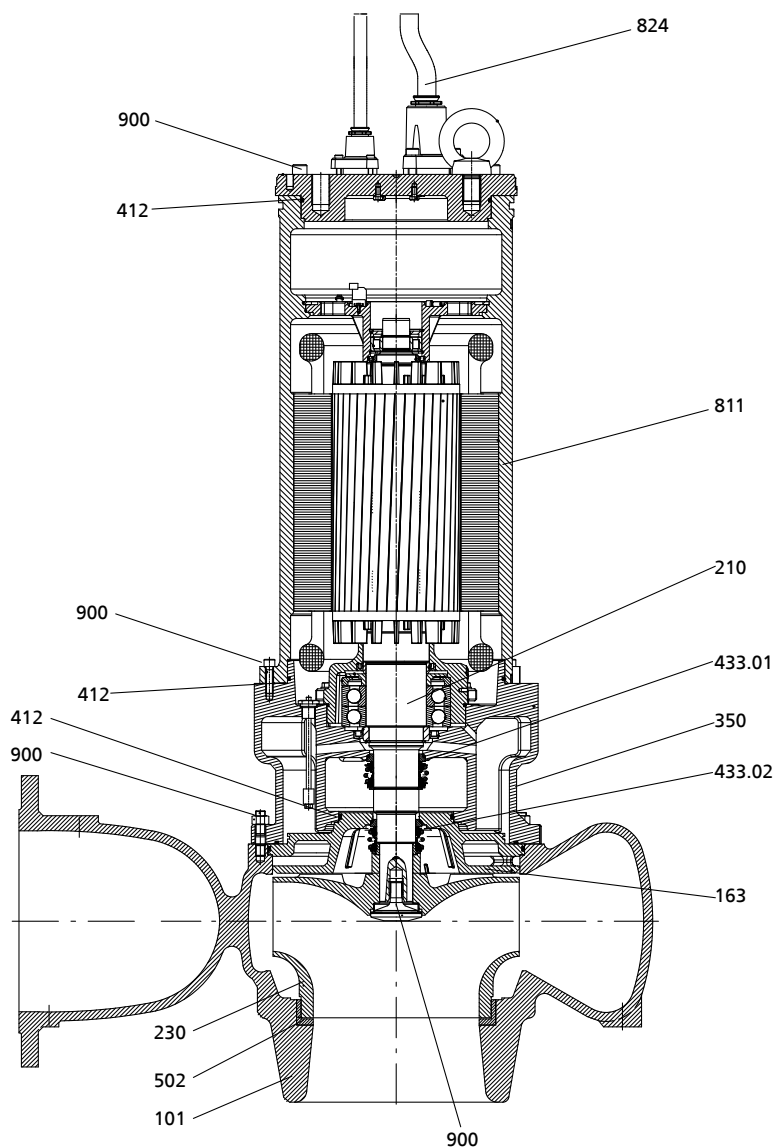


Fig. 5: General assembly drawing, example: Amarex KRT K 150-401 / 130 4 XNG-S without cooling jacket

List of components

Part No.	Description	Part No.	Description
101	Pump casing	433.01/.02	Mechanical seal
163	Discharge cover	502	Casing wear ring
210	Shaft	811	Motor housing
230	Impeller	824	Power cable
350	Bearing housing	900	Bolt/screw
412	O-ring		

Amarex KRT, motor type 4, installation types K and D

For the motor type assigned to the motor see (⇒ Page 20)

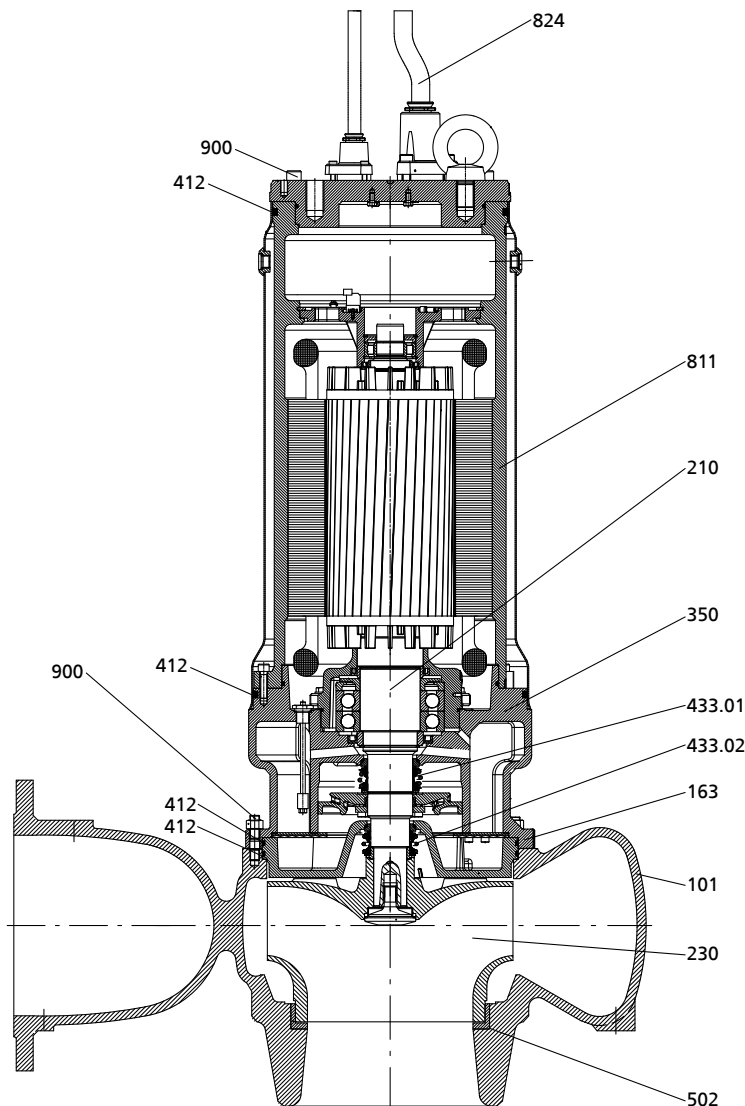


Fig. 6: General assembly drawing, example: Amarex KRT K 150-401 / 130 4 XNG-K with cooling jacket

List of components

Part No.	Description	Part No.	Description
101	Pump casing	433.01/.02	Mechanical seal
163	Discharge cover	502	Casing wear ring
210	Shaft	811	Motor housing
230	Impeller	824	Power cable
350	Bearing housing	900	Bolt/screw
412	O-ring		

Your local KSB representative:



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