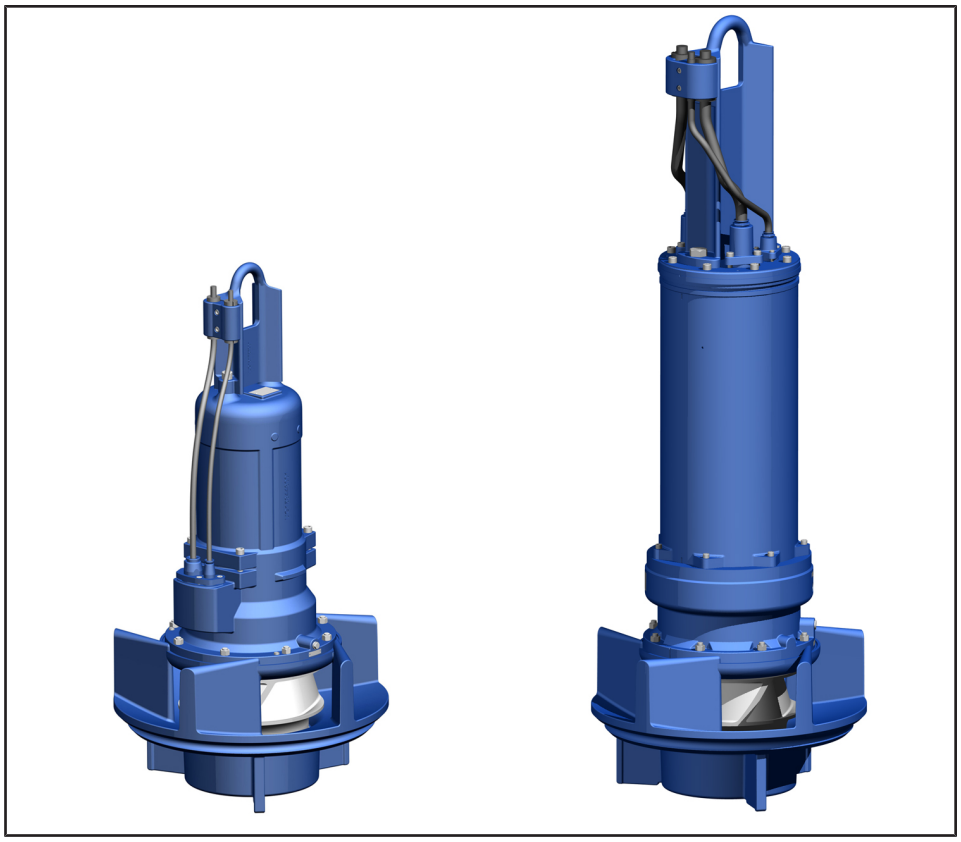
Submersible Pump in Discharge Tube

Amacan K

50 Hz

Type Series Booklet



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Contents

Water Applications: Water Transport

Submersible Pump in Discharge Tube

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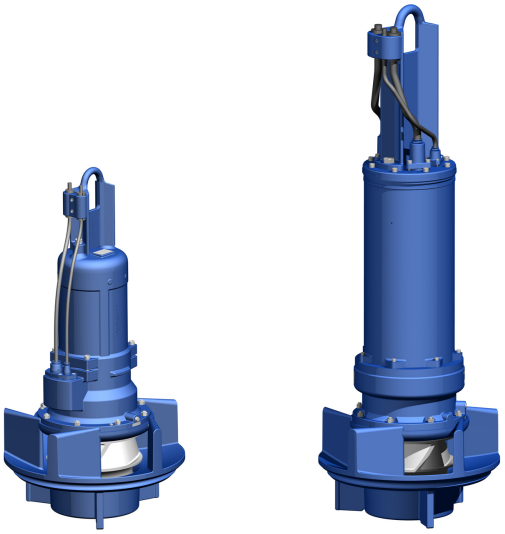

Main applications

- Irrigation pumping stations
- Drainage pumping stations
- Stormwater pumping stations
- Water pollution control
- Flood control

Fluids handled

- Waste water
- Sludge
- Surface water
- Stormwater
- Grey water

Operating data

Operating properties

Characteristic		Value
Flow rate	Q [l/s]	≤ 1500
	Q [m³/h]	≤ 5400
Head	H [m]	≤ 30
Motor rating	P_2 [kW]	≤ 320
Fluid temperature	T [°C]	≤ +40

Designation

Example: Amacan K 800-400 / 60 6 UN G - IE3

Designation key

Code	Description	
Amacan	Type series	
K	Impeller type	
	K	Channel impeller
800	Nominal diameter of the discharge tube [mm]	
400	Nominal impeller diameter [mm]	
60	Motor size	
6	Number of motor poles	
	2, 4, 6, 8, 10	
UN	Motor version (⇨ Page 7)	
	UN/UE	Without explosion protection, for fluid temperatures of up to 40 °C
	XN/XE	Explosion protection Ⓔx II2G c Ex db IIB T3, for fluid temperatures of up to 40 °C
	YN/YE	Explosion protection Ⓔx II2G c Ex db IIB T4, for fluid temperatures of up to 40 °C
G	Material variant (⇨ Page 5)	
	G	Impeller made of grey cast iron, standard design
	G1	Like G, with impeller made of duplex stainless steel
IE3	Motor efficiency classification[1]	
	-[2]	No efficiency classification
	IE2	High Efficiency
	IE3	Premium Efficiency

Design details

Design

- Fully floodable submersible pump in discharge tube (submersible motor pump)
- Not self-priming
- Close-coupled design
- Single-stage
- Vertical installation

Installation

- Application-oriented installation types (⇨ Page 36)

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

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

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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

Impeller type

- Application-oriented impeller type (⇨ Page 8)

Bearings

Motor version UE, XE, YE:

Drive end:

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

Pump-end:

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

Motor version UN, XN, YN:

Drive end:

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

Pump-end:

- Can be re-lubricated

Materials

Other designs on request

Overview of materials depending on material variant

Part No.	Description	Material variant	
		G	G1[3]
101	Pump casing	EN-GJL-250 (JL 1040)	
163	Discharge cover	EN-GJL-250 (JL 1040)	
230	Impeller	EN-GJL-250 (JL 1040)	1.4517
350 / 330	Bearing housing / bearing bracket	EN-GJL-250 (JL 1040)	
412	O-ring	NBR[4] (Viton FPM)[5]	
433	Mechanical seal (pump end)	SiC/SiC (bellows NBR[4],Viton - FPM)[5])	
	Mechanical seal (drive end)	Carbon/SiC (bellows NBR[4], Viton - FPM)[5])	
502	Casing wear ring	EN-GJL-250 (JL 1040) / VG 434[6]	
571	Bail	EN-GJS-500-7 / EN-GJS-400-15 / S235JRG2[7]	
811	Motor housing	EN-GJL-250 (JL 1040)	
812	Motor housing cover	EN-GJL-250 (JL 1040)[8]	
818	Rotor	1.4021 / C45N[9]	
834	Cable gland	-	
	Gland housing	EN-GJL-250 (JL 1040)	
Various	Screws/bolts	Stainless steel	

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.

Coating and preservation

Paint

- **Surface treatment:** SA 2 1/2 (SIS 055900) AN 1865
- **Primer:** primer coat on unfinished casting
- **Top coat:** environmentally friendly KSB standard coating (RAL 5002)

Special coating

- Available on request (extra charge and a longer delivery period apply).

3) Material variant G1 not available for size 1000-421
4) Nitrile rubber (Perbunan)
5) FPM fluorocarbon rubber variant available as an option against a surcharge
6) This option is available against a surcharge.
7) EN-GJS-500-7 for motor 304, 374, 226, 306, 118 to 228; EN- GJS-400-15 for motor 454 to 954, 316 to 1656, 308 to 1308, 4010 to 7510; S235JRG2 for motor 1906 to 4406, 1508 to 1858
8) Not fitted on all pump sizes
9) For further information see technical data

Product benefits

- Three-phase motor and optimum motor cooling by fluid handled make for efficient power utilisation.
- The pump's own weight ensures self-centring seating in the discharge tube, and an O-ring seals it; quick to install or remove.
- The slim motor minimises discharge tube flow losses.
- High reliability thanks to bearing temperature monitoring, vibration sensor, thermal motor protection, leakage sensors in the motor space and connection space as well as leakage monitoring of the mechanical seal system.
- Low-vibration hydraulic system; inlet ribs and optimised bellmouth for vortex-free inflow.
- Absolutely water-tight resin-sealed cable entries prevent any water from entering the motor – even in the event of a damaged cable.

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 / 2 / 2B.

Acceptance inspections/tests

- Acceptance test to ISO/DIN or comparable standards available against a surcharge.
- Acceptance inspections/tests to Hydraulic Institute on request.

Warranty

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

Selection information

Information for pump selection

The guaranteed point of submersible pumps in discharge tubes is measured at a head 0.5 m above the motor (DIN 1184). The documented characteristic curves refer to this data. This must be taken into account when calculating system losses. The indicated heads and performance data apply to pumped fluids with a density $\rho = 1$ kg/dm³ and a kinematic viscosity v of up to 20 mm²/s.

- Adjust the power input to the density of the fluid handled:
  P_2 (required) = ρ [kg/dm³] (fluid handled) × P_2 (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 reserve[10)]

P_2	Reserve	
[kW]	Mains operation	With frequency inverter
≤ 30	10 %	15 %
> 30	5 %	10 %

Determine the min. water level t_{1min} (see diagram in general arrangement drawing):
The min. water level t_{1min} is the water level required in the pump's suction chamber to ensure the following:

- The liquid cover above the hydraulic system (impeller) is sufficient. (Shown in diagram depending on pump size.)
- The pump does not draw in air-entraining vortices. (Shown in diagram depending on flow rate.)
- No cavitation occurs in the hydraulic system. (Check against the $NPSH_{required}$ value indicated in the technical literature). The following conditions must be met:
  - $NPSH_{available} > NPSH_{required}$ + safety allowance
  - $NPSH_{available} = 10.0 + (t_1 - t_2)$
  - Safety allowance:
    up to $Q_{opt} \Rightarrow$ 0.5 m
    greater than $Q_{opt} \Rightarrow$ 1.0 m

Head (H)

The total pump head is composed as follows:
$H = H_{geo} + \Delta H_V$

H_{geo} (static head)

- Without discharge elbow: difference between the suction-side water level and the overflow edge
- With discharge elbow: difference between suction-side and discharge-side water level

ΔH_V (losses in the system)

- Starting 0.5 m downstream of the pump: e.g. pipe friction, elbow, swing check valve, etc.

Inlet losses, riser losses and elbow losses

Losses are caused by the inlet, riser and elbow (and/or free discharge).

- Losses in the riser up to the indicated reference level (0.5 m above the motor) are taken into account in the documented characteristic curves.
- Inlet and elbow losses are system losses. These losses must be taken into account for selection.
- Information on structural requirements, pump installation and pump sump design is given in the KSB know-how brochure "Planning information: Amacan submersible pumps in discharge tubes" (0118.55).

1579.5/09-EN

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

Overview of product features / selection tables

Overview of product features

Overview of product features

Feature	Motor version			
	UE/XE/YE		UN/XN/YN	
Motor size				
4 poles	30 4, 37 4	45 4 to 75 4	80 4	95 4
6 poles	22 6, 30 6	31 6 to 55 6	60 6	80 6 to 440 6
8 poles	11 8 to 22 8	30 8 to 45 8	50 8	75 8 to 185 8
10 poles	-	-	-	40 10 to 75 10
Material				
Shaft	1.4021		C 45 N	1.4021
Shaft protecting sleeve	-		1.4021	
Bearings	Grease-packed rolling element bearings sealed for life		Pump end: re-greasable rolling element bearing Drive end: grease-packed rolling element bearing sealed for life	
Explosion protection				
Motor version UE, UN	Not explosion-proof			
Motor version XE, XN	Ⓔx II2G c Ex db IIB T3			
Motor version YE, YN	Ⓔx II2G c Ex db IIB T4			
Motor				
Starting method	DOL or star-delta starting (690 V only DOL)			
Electrical voltage	400 V[11)]			
Cooling	Cooled by surrounding fluid			
Maximum immersion depth	30 m			
Connection cable				
Type	See the "Overview of connection cables" table			
Length	10 m[12)]			
Cable entry	Totally watertight			
Sealing elements				
Elastomers	Nitrile butadiene rubber NBR[13)]			
Shaft seal	Bellows-type mechanical seal[14)]			
Monitoring equipment				
Winding temperature, motor version UE, UN	Temperature switch (bimetal) in the winding			
Winding temperature, motor version XE, XN, YE, YN	Temperature switch (bimetal) in the winding, plus PTC thermistor for explosion protection			
Bearing temperature	-	Pt100 resistance thermometer at pump end	Pt100 resistance thermometer at pump end[15)]	
Motor leakage	Electrode monitoring the winding space for leakage		Electrode monitoring the winding space and connection space for leakage	
Mechanical seal leakage	-		Float switch in leakage area	
Vibration sensor	-		-[16)]	
Coating	Environmentally friendly KSB standard coating, colour RAL 5002[17)]			
Installation	(⇨ Page 36)			
Maximum fluid temperature	40 °C			
Tests/inspections				
Hydraulic system	KSB standard (ZN 56525)[18)]			
General	KSB standard (ZN 56525)			

11) Optional: 500 V, 690 V
12) Optional: up to 50 m
13) Optional: Viton = fluorocarbon rubber FPM
14) Optional: mechanical seal with covered spring
15) Optional: Pt100 resistance thermometer at motor end
16) Optional: internal vibration sensor
17) Optional: 250 µm
18) Optionally to ISO 9906/1/2/A

Overview of connection cables

Feature	S1BN8-F rubber-sheathed cable	S07RC4N8-F rubber-sheathed cable
Design	Standard	Optional
Rated voltage	1000 V	750 V
EMC screening	-	✓
Insulation material	EPR[19)]	EPR[19)]
Maximum continuous temperature of insulation	90 °C	90 °C
For permanent immersion in waste water to DIN VDE 0282-16/HD22.16	✓	✓

Impeller

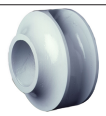
	Closed multi-channel impeller (impeller type K)	**Suitable for the following fluids:** contaminated, solids-laden, non-gaseous fluids without stringy material

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.

Fluid handled[20)] (fluids not containing stringy material)	Comments, recommendations
Grey water	Free passage > any solids contained possibly pre-cleaned via a screen or weir
River water	
Stormwater	
Waste water	Pre-cleaned via a screen or weir
Activated sludge	Pumpable up to a dry substance content of: 3 %
Industrial waste water containing:	
- Paint suspensions	Solvent-free, observe the operator's instructions.
- Lacquer/paint/varnish suspensions	Solvent-free, contact KSB for silicone-free version.
- Fibres/pulp	Fluids containing short fibres, no stringy material
- Chips/swarf	Material variant G1, special mechanical seal, solids content < 5 g/l
- Abrasive substances	
Mildly acidic industrial waste water	pH ≥ 6.0: material variant G1 and special coating pH < 6.0: contact KSB (material variant C).
Non-corrosive waste water	
- Ammonia water	
- Ammonium hydroxide 5 % NH_4OH	
- Urea 25 % NH_2-CO	
- Potassium hydroxide 10 % KOH	
- Calcium hydroxide 5 % $Ca(OH)_2$	
- Sodium hydroxide 5 % NaOH	
- Sodium carbonate 30 % Na_2CO_3	
Non-corrosive waste water containing:	
- Aliphatic hydrocarbons, e.g. oils, petrol, butane, methane	
- Aromatic hydrocarbons, e.g. benzene, styrene	FPM (Viton) O-rings; for high concentrations contact KSB.
- Chlorinated hydrocarbons, e.g. tetrachloroethylene, ethylene chloride, chloroform, methylene chloride	

1579.5/09-EN

19) EPR = ethylene propylene rubber
20) Fluids to be pumped which are not listed in this table require higher-grade materials. Contact the manufacturer.

Pump/motor combinations

Overview of pump/motor combinations

Size	Motor																																							
	4 poles							6 poles																					8 poles											10 poles		
	30 4.E	37 4.E	45 4.E	55 4.E	65 4.E	75 4.E	95 4.N	22 6.E	30 6.E	31 6.E	37 6.E	45 6.E	55 6.E	60 6.N	80 6.N	100 6.N	120 6.N	140 6.N	165 6.N	190 6.N	225 6.N	260 6.N	320 6.N	360 6.N	400 6.N	440 6.N	11 8.E	15 8.E	18 8.E	22 8.E	30 8.E	37 8.E	45 8.E	90 8.N	110 8.N	130 8.N	150 8.N	185 8.N	40 10.N	60 10.N	75 10.N
700-324	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
700-330	1	1	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
700-371	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
800-324	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800-330	-	-	1	1	1	1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800-370	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800-371	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800-400	-	-	-	-	-	-	-	1	1	-	1	1	1	2	2	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-
800-401	-	-	-	-	-	-	-	1	1	1	1	1	1	-	2	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	-	-	-	-	-
1000-420	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-421	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000-500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200-630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2

1	General assembly drawing Amacan K, motor version UE, XE, YE (⇨ Page 40)
2	General assembly drawing Amacan K, motor version UN, XN, YN (⇨ Page 41)

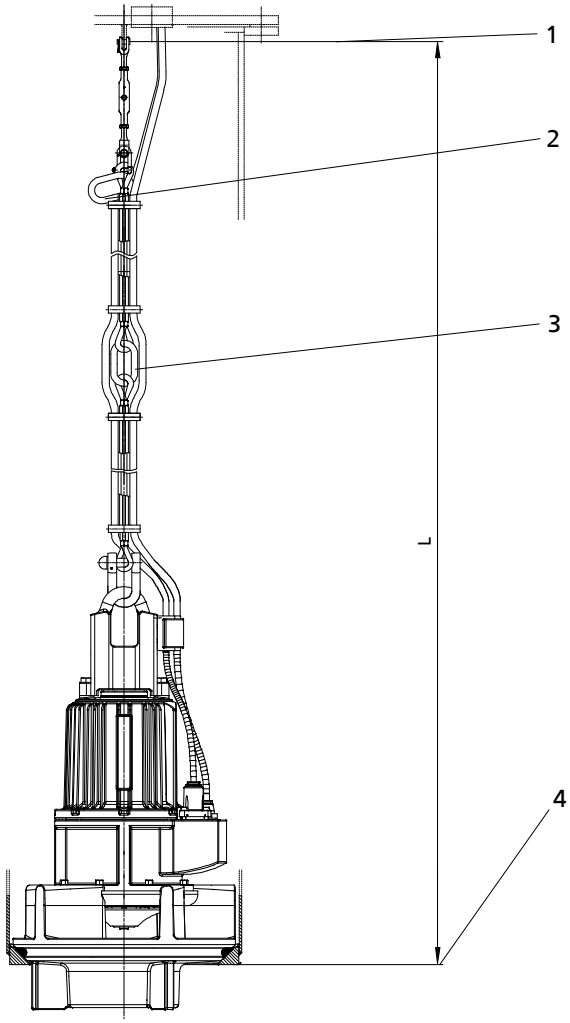
Related documents

- General Arrangement Drawings 1579.39
- Motor Data Booklet 1579.53
- Planning Information 0118.55

Specifications required for enquiries/orders

- Designation of the pump (⇨ Page 4)
- Flow rate Q, head H_{total}
- Type of fluid handled and fluid temperature
- Voltage, frequency, starting method, cable length
- Quantity and language of operating manuals
- Required accessories
  - For discharge tubes indicate all required elevations and the type of installation.
  - For flow-straightening vanes indicate the type of installation and design (with or without suction umbrella).
  - For a support rope indicate dimension "L", the number of additional lifting rings (depending on the lifting height of the lifting equipment) as well as the elevations and type of installation.

Always define dimension "L" when ordering a support rope to allow the correct length to be determined. The lifting height of the crane must be taken into account when ordering a support rope. This determines the number of lifting rings required for installing the pump set in or removing it from the discharge tube.



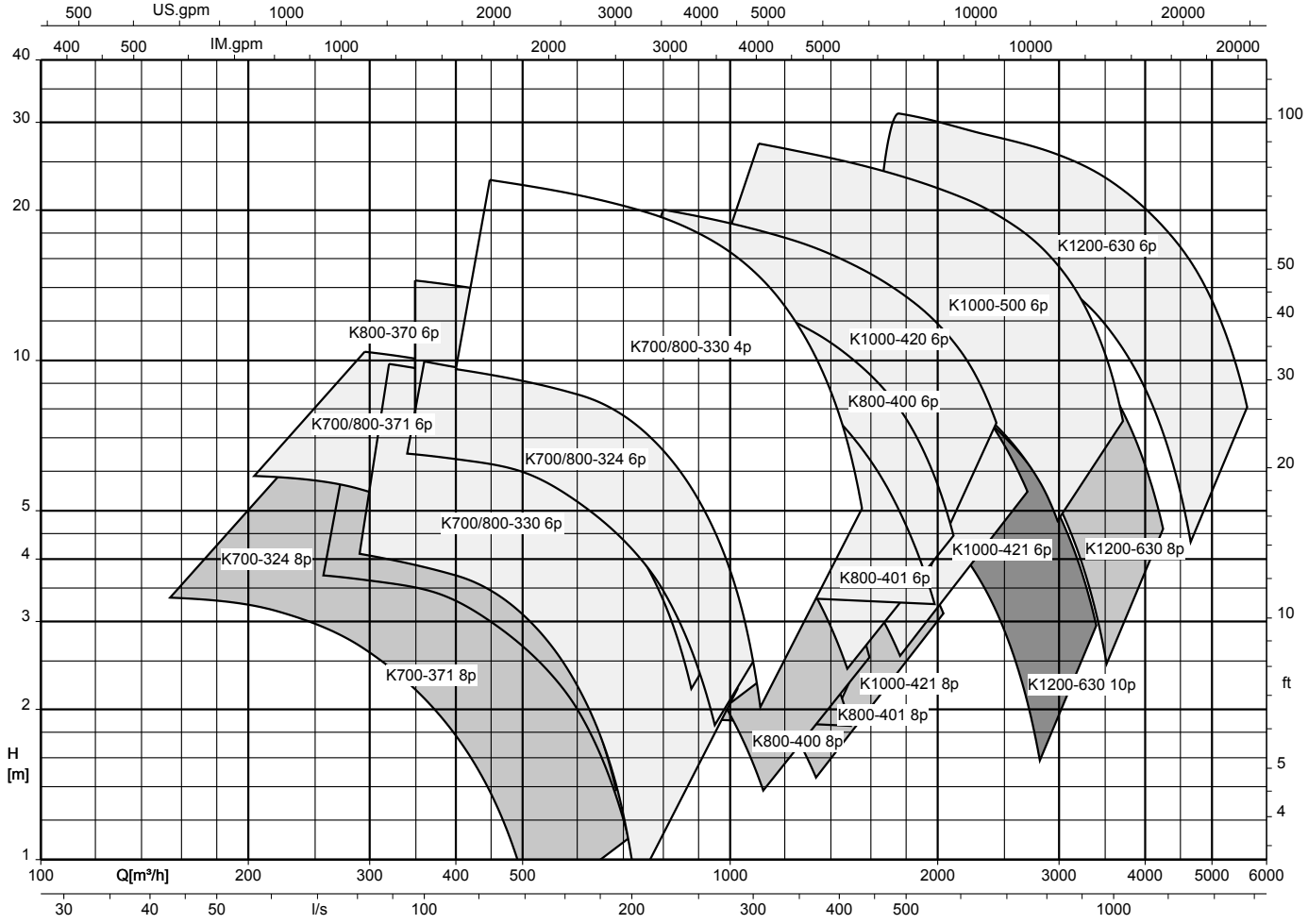
1	Suspension arrangement attached to cover (or cross beam for installation type BU)
2	Lifting ring (standard, included in the scope of supply)
3	Optional (intermediate) lifting ring
4	Lower edge of discharge tube

The support rope is an accessory and can be supplied with additional lifting rings and a support spacer as an option. The standard design is supplied without intermediate lifting ring. (⇨ Page 37)

1579.5/09-EN

Selection chart

Amacan K, n = 1450 / 960 / 725 / 580 rpm

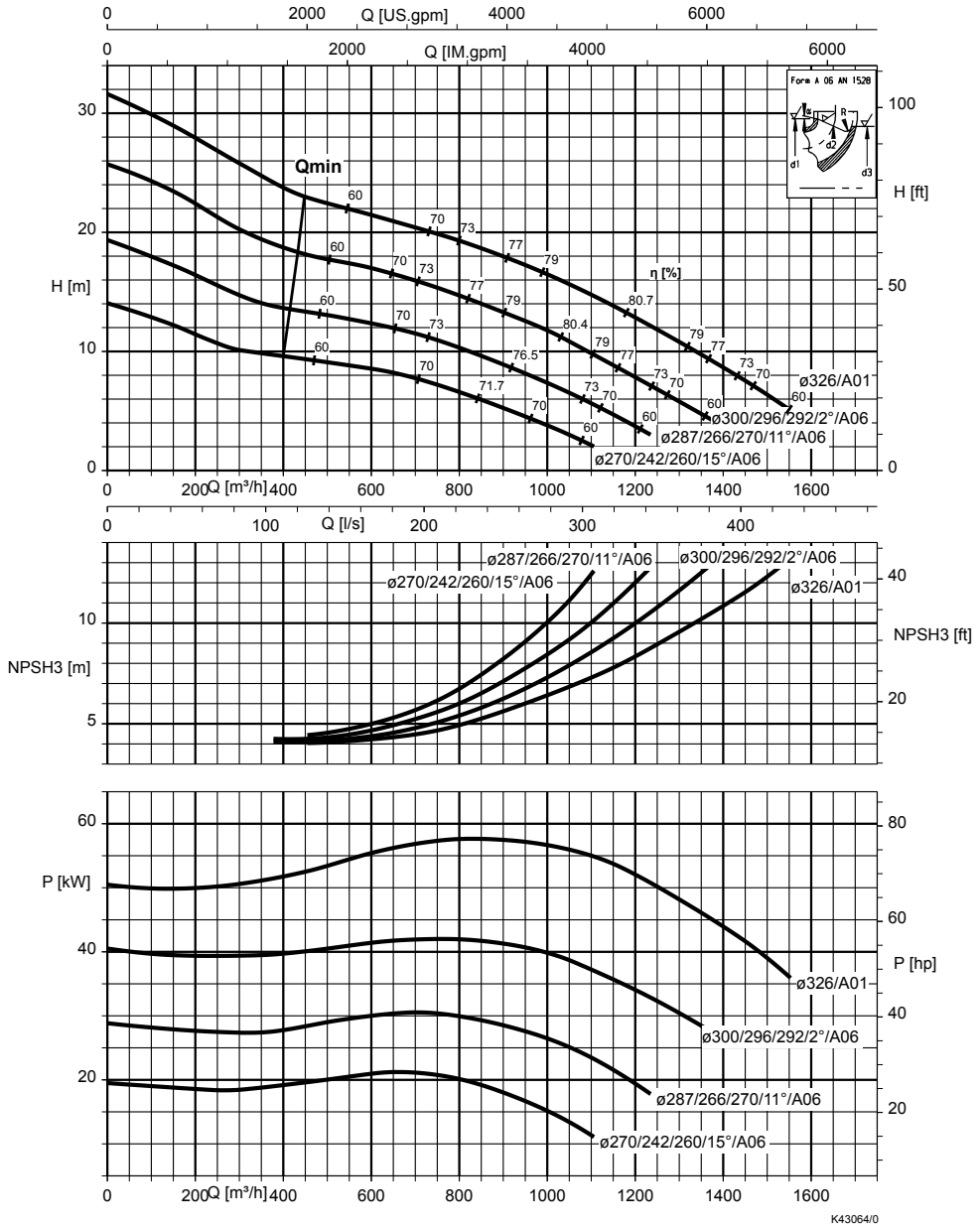


Characteristic curves

n = 1450 rpm

Amacan K 700-330/800-330, n = 1450 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 70 mm

Rated power P_2 and mass moment of inertia J [21)]

Size	Motor	P_2	J
		[kW]	[kgm²]
700-330	30 4 UE/XE	30,0	0,49
700-330	37 4 UE/XE	37,0	0,53
700-330	37 4 UE/YE - IE3	22,0	0,53
700-330	95 4 UN/YN - IE3	55,0	0,90

Size	Motor	P_2	J
		[kW]	[kgm²]
800-330	45 4 UE/XE	45,0	0,62
800-330	55 4 UE/XE	55,0	0,68
800-330	55 4 UE/YE - IE3	30,0	0,68

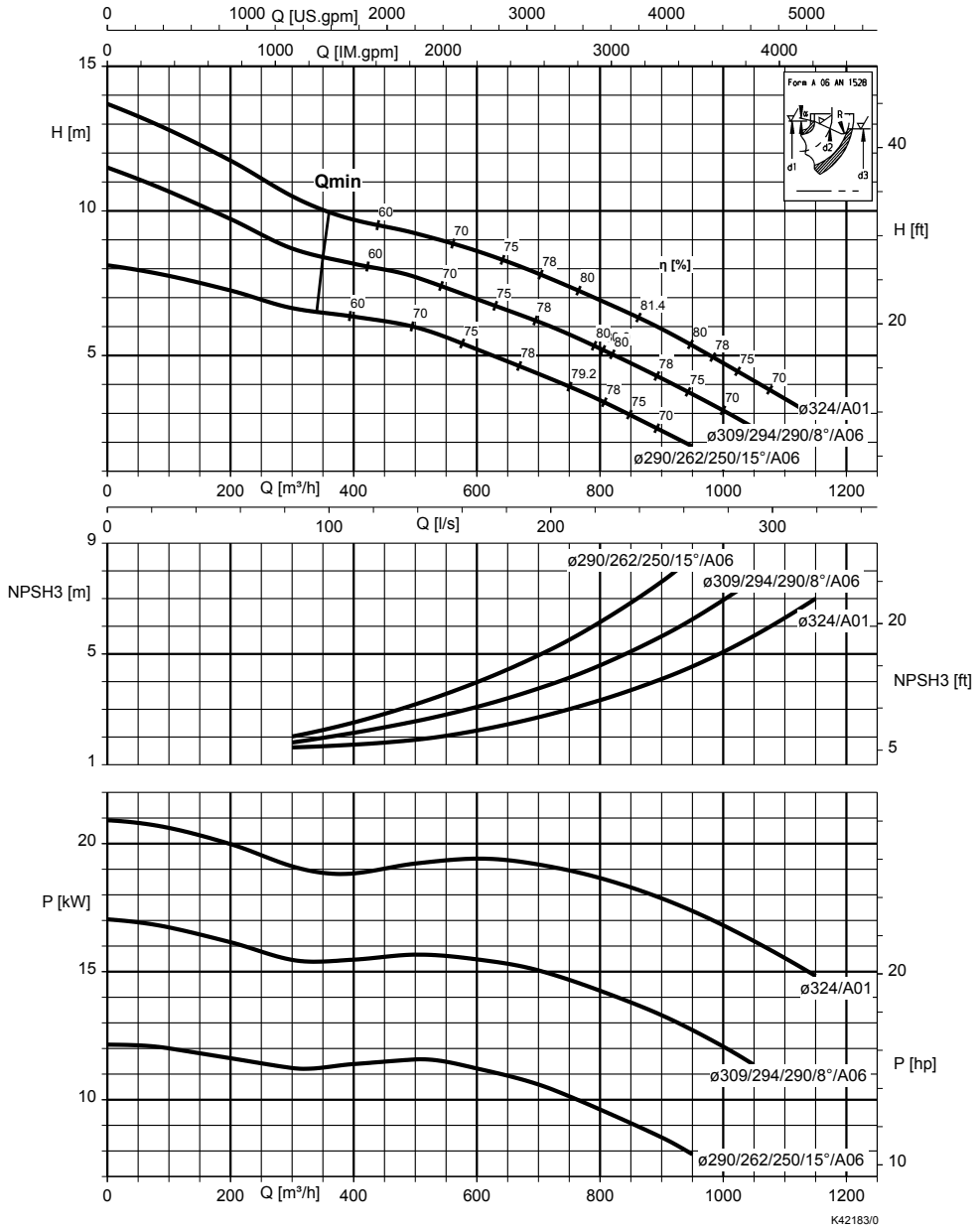
21) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Size	Motor	P_2	J
		[kW]	[kgm^2]
800-330	65 4 UE/XE	65,0	0,73
800-330	65 4 UE/YE - IE3	37,0	0,73
800-330	75 4 UE/YE - IE3	45,0	0,80

n = 960 rpm

Amacan K 700-324/800-324, n = 960 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 70 mm

Rated power P_2 and mass moment of inertia J[22)]

Size	Motor	P_2	J
		[kW]	[kgm²]
700-324	22 6 UE/XE	22,0	0,64
800-324	31 6 UE/YE - IE3	18,5	0,92
800-324	37 6 UE/YE - IE3	22,0	0,92

22) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

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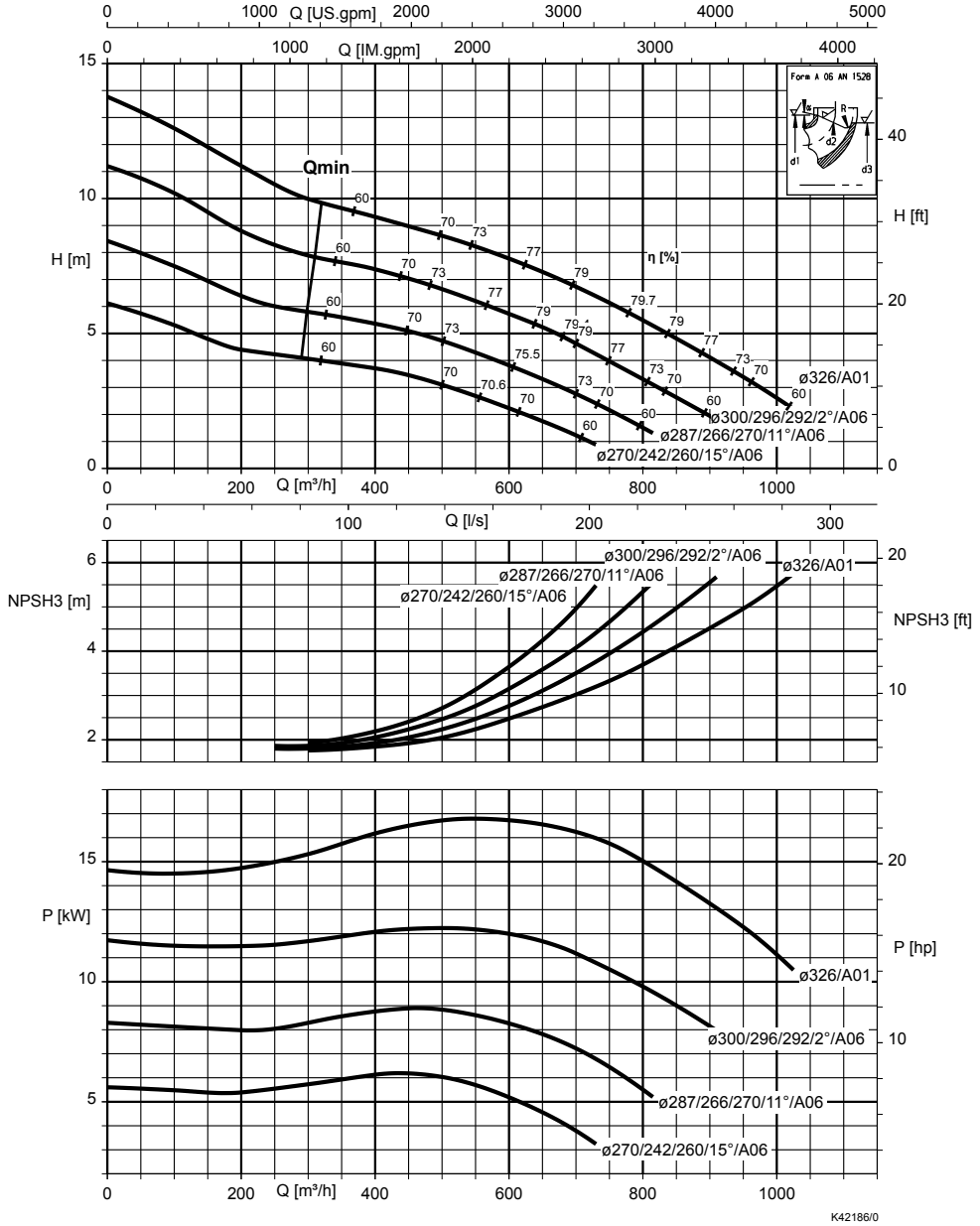
Amacan K 700-330/800-330, n = 960 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 70 mm

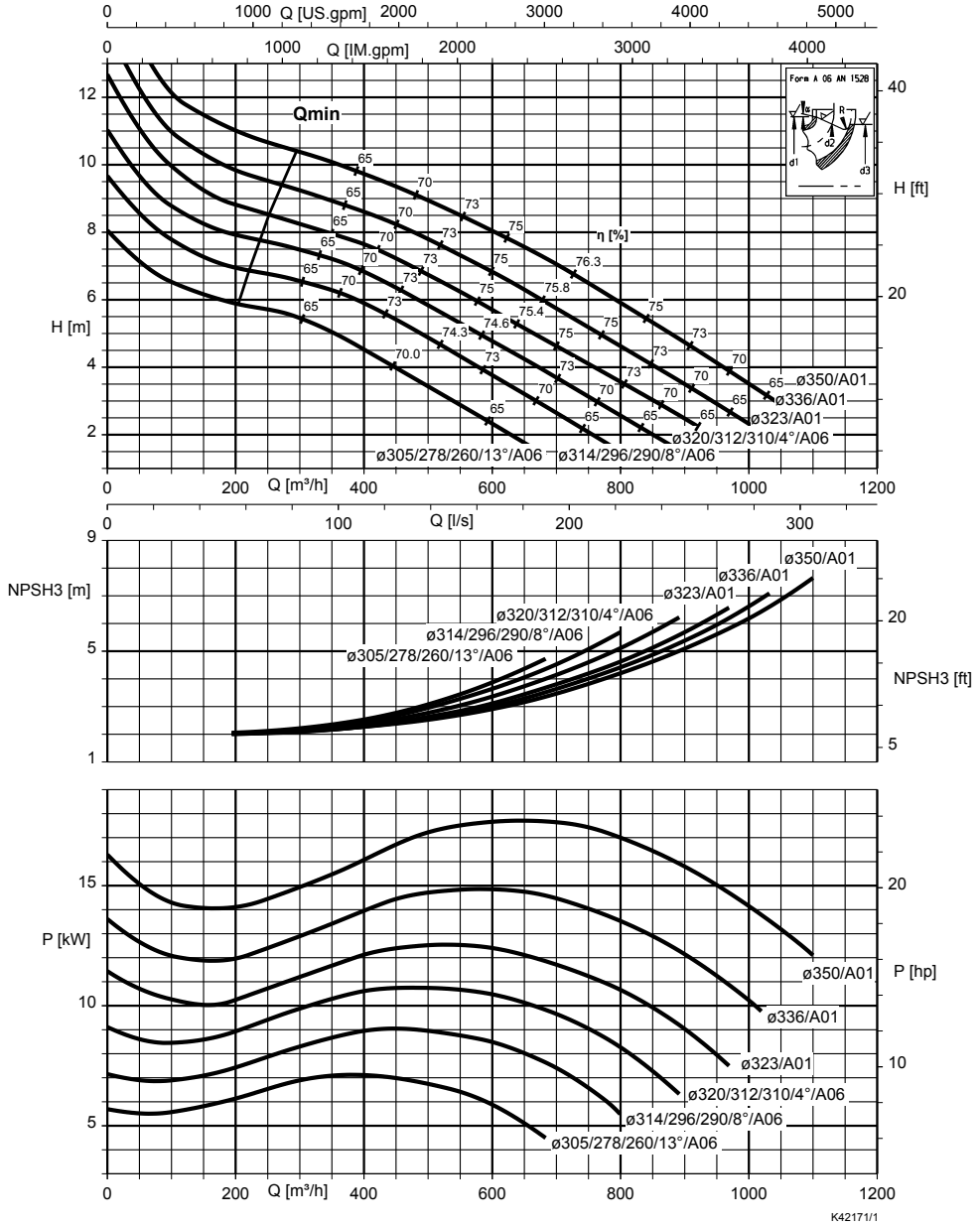
Rated power P_2 and mass moment of inertia J[23)]

Size	Motor	P_2	J
		[kW]	[kgm²]
700-330	22 6 UE/XE	22,0	0,54
800-330	31 6 UE/YE - IE3	18,5	0,82
800-330	37 6 UE/YE - IE3	22,0	0,82

23) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Amacan K 700-371/800-371, n = 960 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 105 mm

Rated power P_2 and mass moment of inertia J[24)]

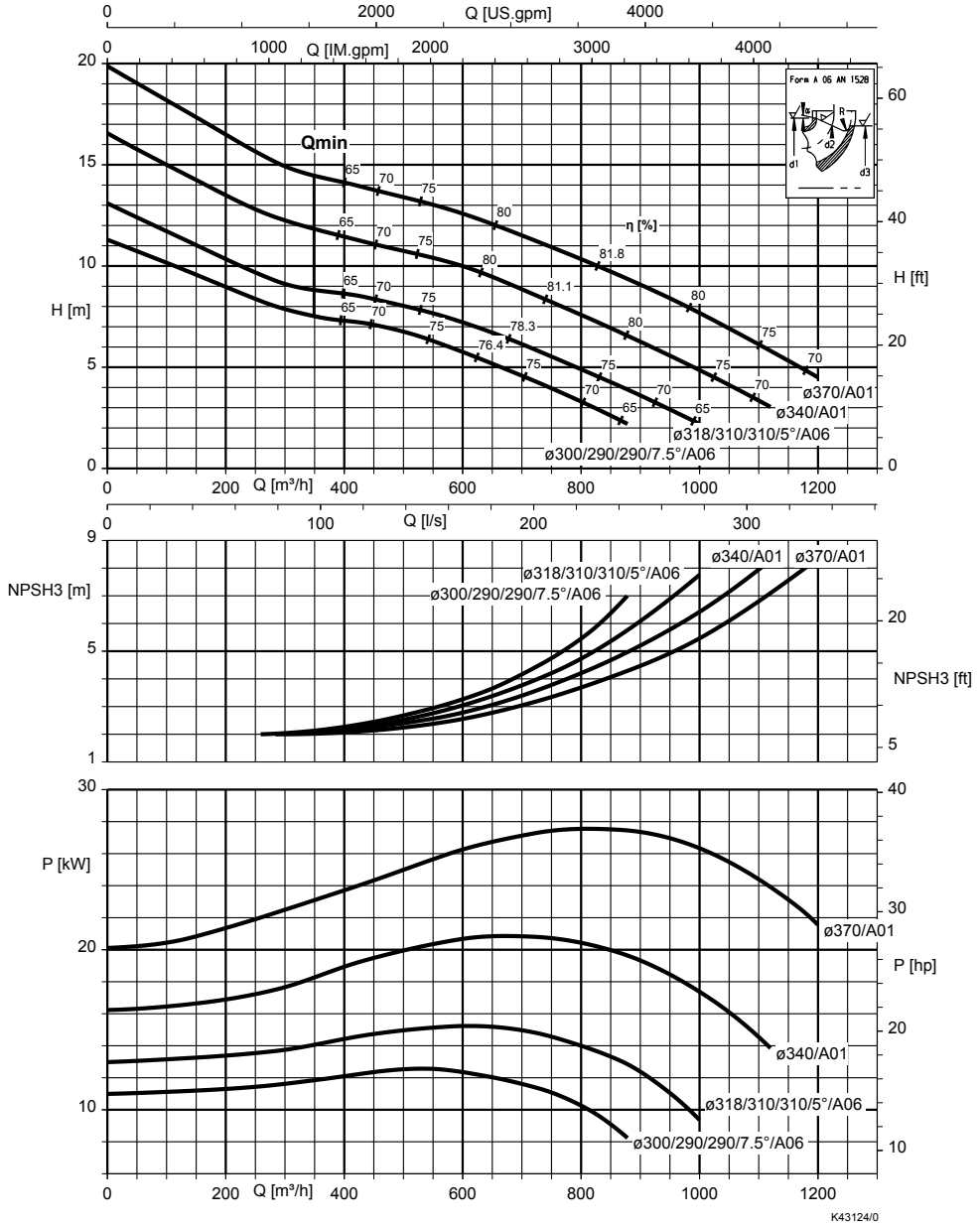
Size	Motor	P_2	J
		[kW]	[kgm²]
700-371	22 6 UE/XE	22,0	0,74
800-371	31 6 UE/YE - IE3	18,5	1,02
800-371	37 6 UE/YE - IE3	22,0	1,02

24) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

1579.5/09-EN

Amacan K 800-370, n = 960 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 85 mm

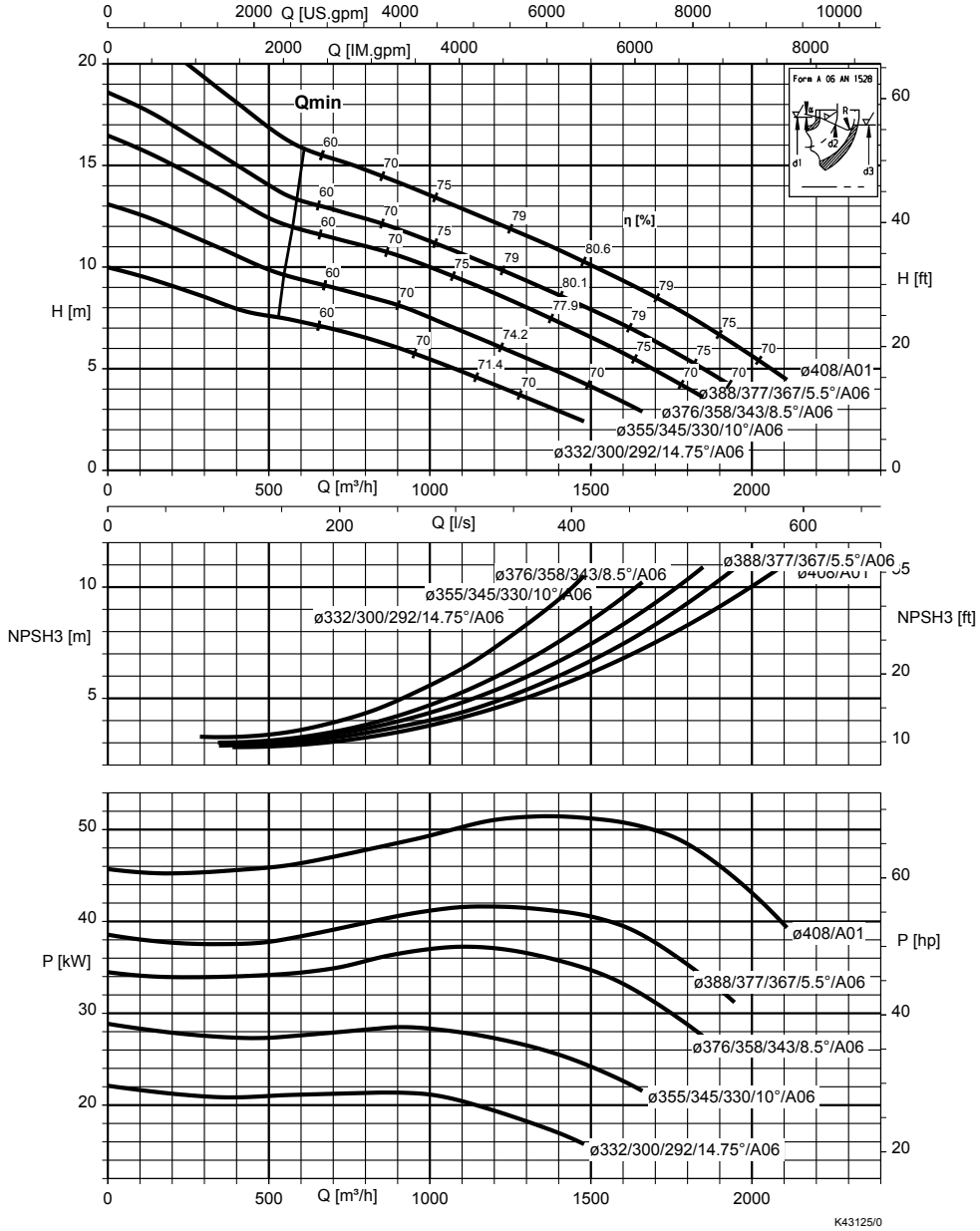
Rated power P_2 and mass moment of inertia J[25)]

Size	Motor	P_2	J
		[kW]	[kgm²]
800-370	22 6 UE/XE	22,0	0,69
800-370	22 6 UE/YE - IE3	15,0	0,69
800-370	30 6 UE/XE	30,0	0,72
800-370	31 6 UE/YE - IE3	18,5	0,97
800-370	37 6 UE/XE	37,0	0,97
800-370	37 6 UE/YE - IE3	22,0	0,97
800-370	45 6 UE/YE - IE3	30,0	1,05

25) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Amacan K 800-400, n = 960 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 100 mm

Rated power P_2 and mass moment of inertia J[26)]

Size	Motor	P_2	J
		[kW]	[kgm²]
800-400	22 6 UE/XE	22,0	0,94
800-400	30 6 UE/XE	30,0	0,97
800-400	37 6 UE/XE	37,0	1,22
800-400	37 6 UE/YE - IE3	22,0	1,22
800-400	45 6 UE/XE	45,0	1,30
800-400	45 6 UE/YE - IE3	30,0	1,30
800-400	55 6 UE/XE	55,0	1,40

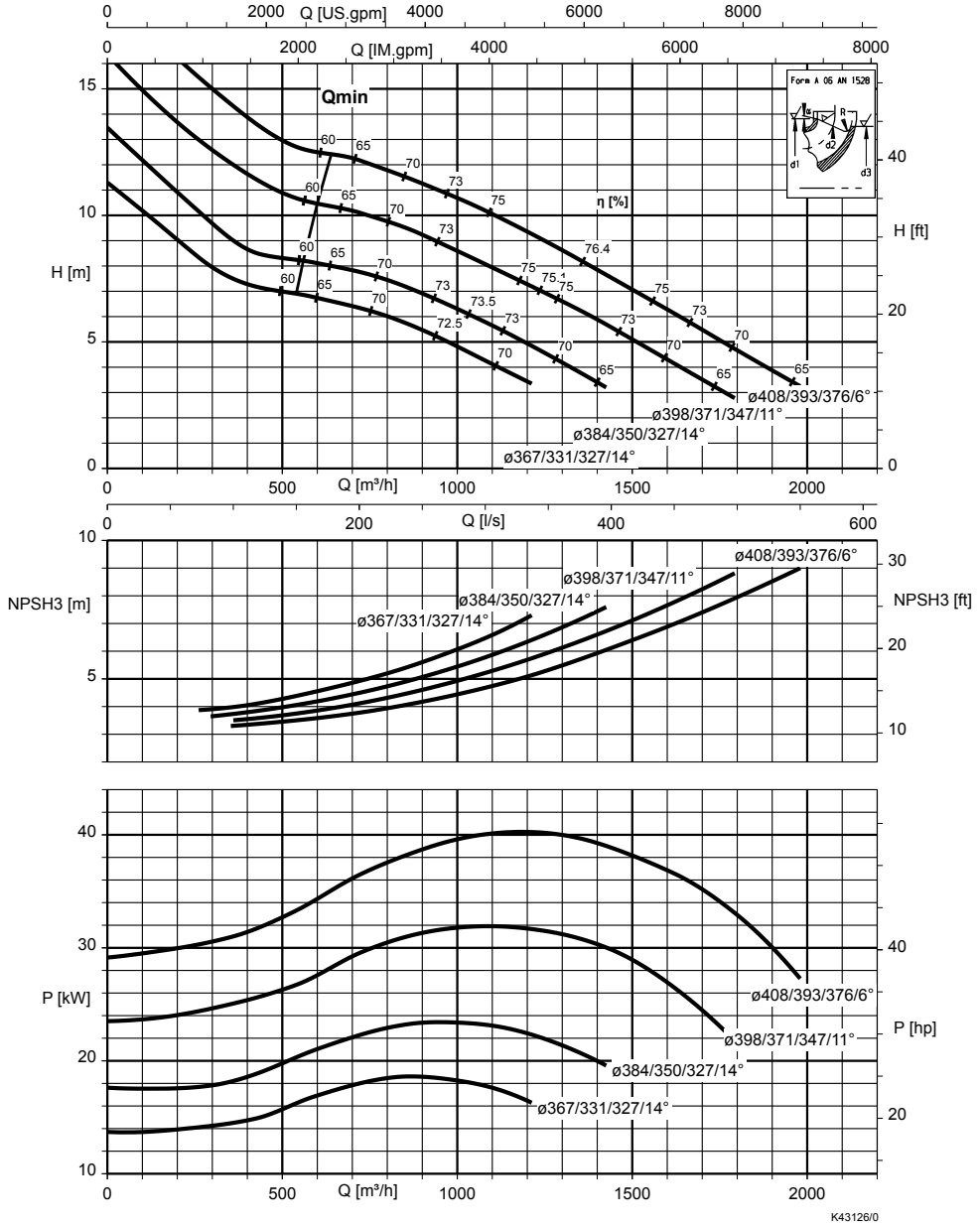
Size	Motor	P_2	J
		[kW]	[kgm²]
800-400	55 6 UE/YE - IE3	37,0	1,40
800-400	60 6 UN/XN	60,0	1,41
800-400	80 6 UN/YN - IE3	45,0	1,55

1579.5/09-EN

26) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Amacan K 800-401, n = 960 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 135 mm

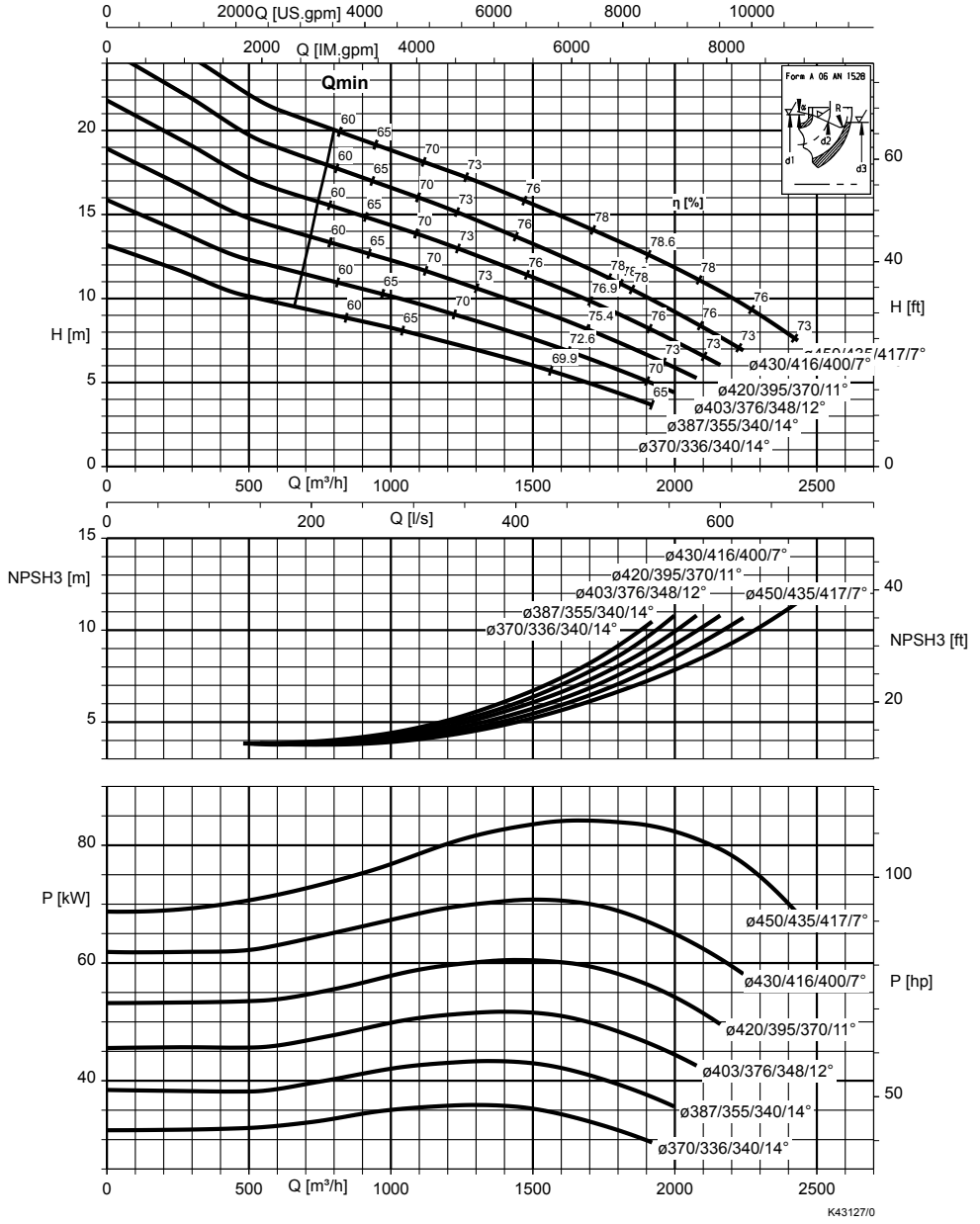
Rated power P_2 and mass moment of inertia J[27)]

Size	Motor	P_2	J
		[kW]	[kgm²]
800-401	22 6 UE/XE	22,0	0,94
800-401	30 6 UE/XE	30,0	0,97
800-401	31 6 UE/YE - IE3	18,5	1,22
800-401	37 6 UE/XE	37,0	1,22
800-401	37 6 UE/YE - IE3	22,0	1,22
800-401	45 6 UE/XE	45,0	1,30
800-401	45 6 UE/YE - IE3	30,0	1,30
800-401	55 6 UE/YE - IE3	37,0	1,40
800-401	80 6 UN/YN - IE3	45,0	1,55

27) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Amacan K 1000-420, n = 960 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 100 mm

Rated power P_2 and mass moment of inertia J[28)]

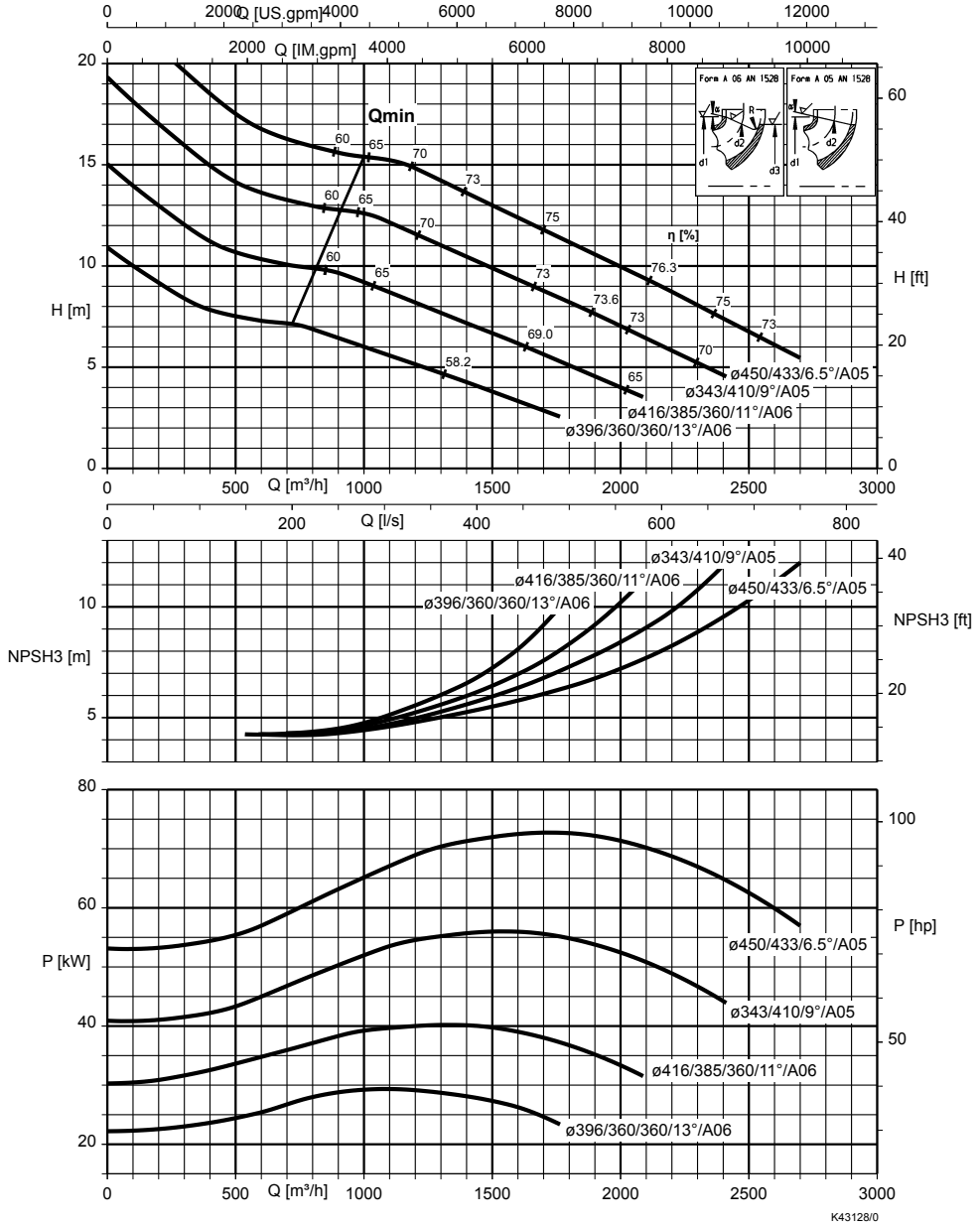
Size	Motor	P_2	J
		[kW]	[kgm²]
1000-420	60 6 UN/XN	60,0	1,88
1000-420	80 6 UN/XN	80,0	2,02
1000-420	80 6 UN/YN - IE3	45,0	2,02
1000-420	100 6 UN/XN	100,0	2,16
1000-420	120 6 UN/YN - IE3	80,0	3,20
1000-420	140 6 UN/YN - IE3	100,0	3,47

28) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

1579.5/09-EN

Amacan K 1000-421, n = 960 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 140 mm

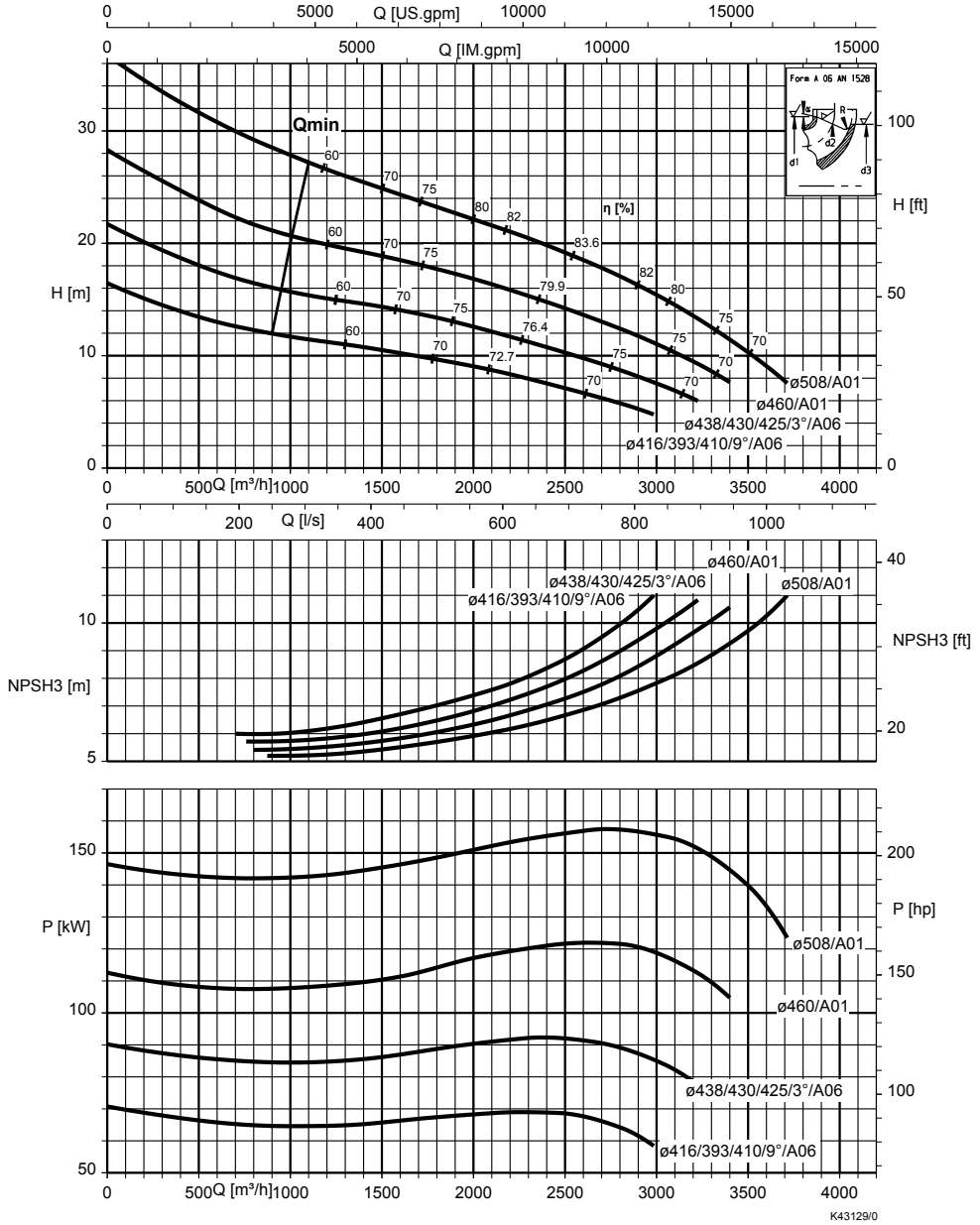
Rated power P_2 and mass moment of inertia J[29)]

Size	Motor	P_2	J
		[kW]	[kgm²]
1000-421	60 6 UN/XN	60,0	1,89
1000-421	80 6 UN/XN	80,0	2,03
1000-421	80 6 UN/YN - IE3	45,0	2,03
1000-421	100 6 UN/XN	100,0	2,17
1000-421	120 6 UN/YN - IE3	80,0	3,21
1000-421	140 6 UN/YN - IE3	100,0	3,48

29) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Amacan K 1000-500, n = 960 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 110 mm

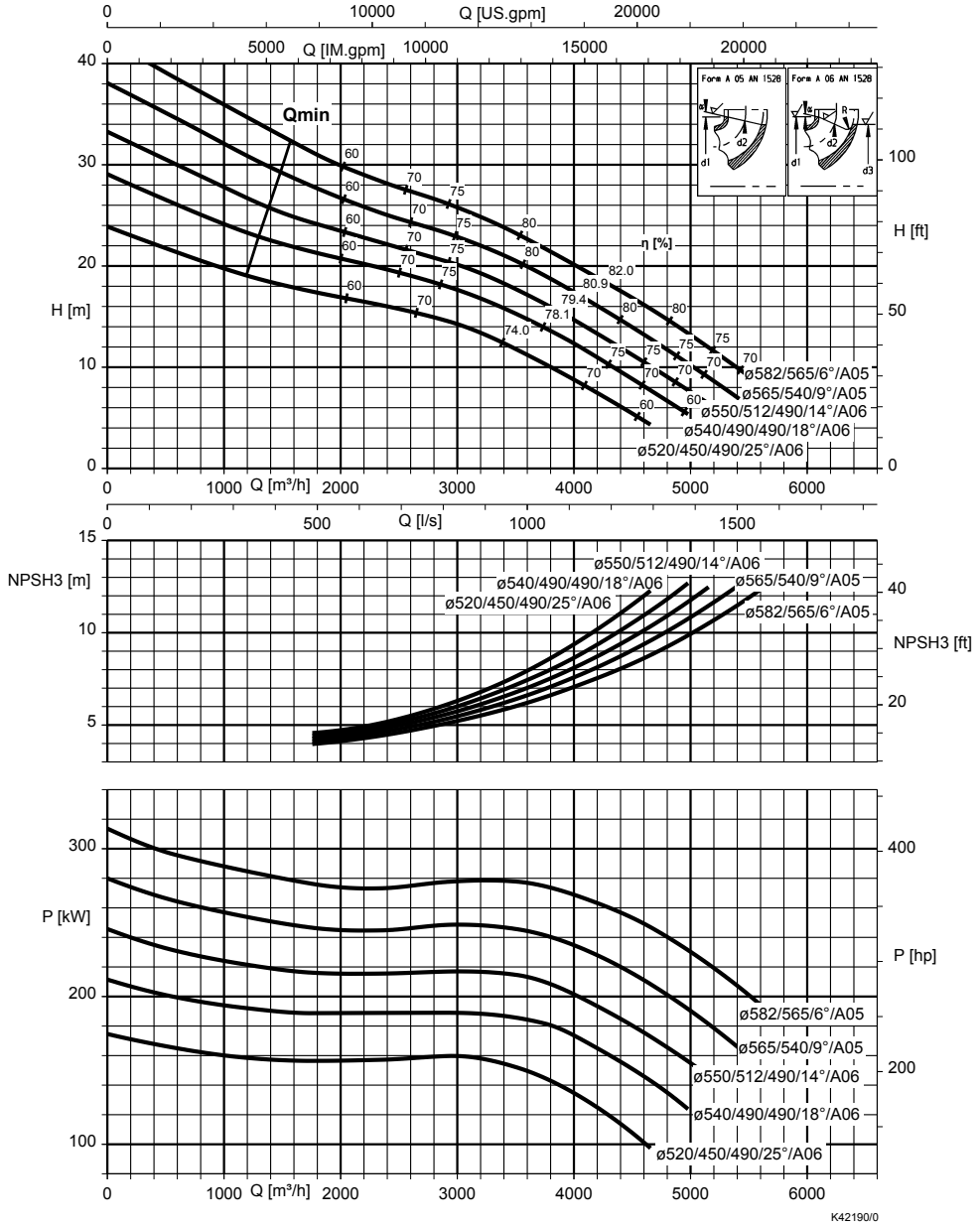
Rated power P_2 and mass moment of inertia J[30)]

Size	Motor	P_2	J
		[kW]	[kgm²]
1000-500	80 6 UN/XN	80,0	3,92
1000-500	100 6 UN/XN	100,0	4,06
1000-500	120 6 UN/XN	120,0	5,10
1000-500	120 6 UN/YN - IE3	80,0	5,10
1000-500	140 6 UN/XN	140,0	5,37
1000-500	140 6 UN/YN - IE3	100,0	5,37
1000-500	165 6 UN/XN	165,0	5,67
1000-500	190 6 UN/XN	190,0	10,42
1000-500	190 6 UN/YN - IE3	135,0	10,42
1000-500	225 6 UN/YN - IE3	150,0	11,69

30) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Amacan K 1200-630, n = 960 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 133 mm

Rated power P_2 and mass moment of inertia J[31)]

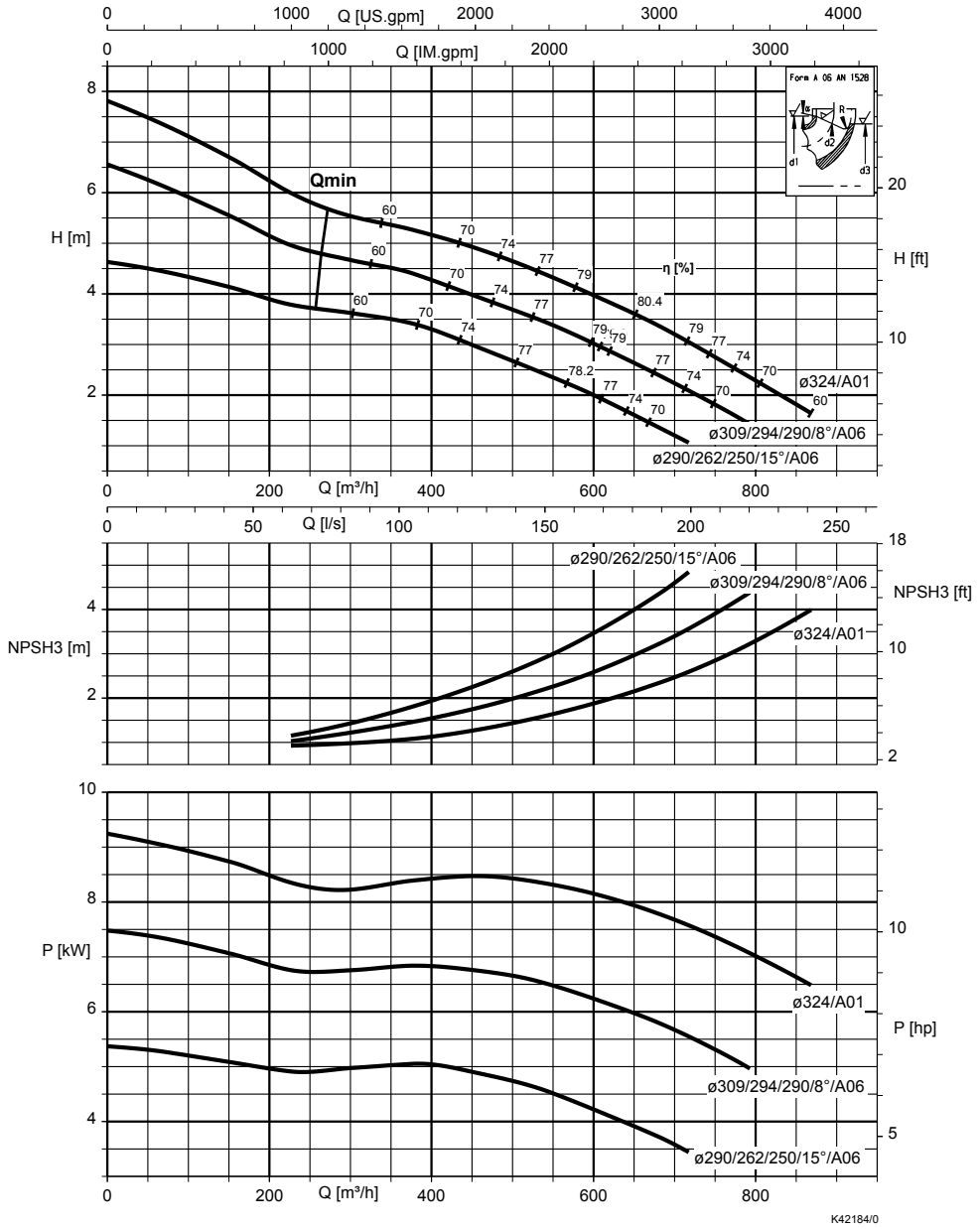
Size	Motor	P_2	J
		[kW]	[kgm²]
1200-630	190 6 UN/XN	190,0	12,52
1200-630	225 6 UN/XN	225,0	13,79
1200-630	260 6 UN/XN	260,0	15,06
1200-630	320 6 UN/XN	320,0	19,54
1200-630	320 6 UN/YN - IE3	200,0	19,54
1200-630	360 6 UN/YN - IE3	260,0	21,11
1200-630	400 6 UN/YN - IE3	300,0	22,80
1200-630	440 6 UN/YN - IE3	320,0	24,37

31) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

n = 725 rpm

Amacan K 700-324, n = 725 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 70 mm

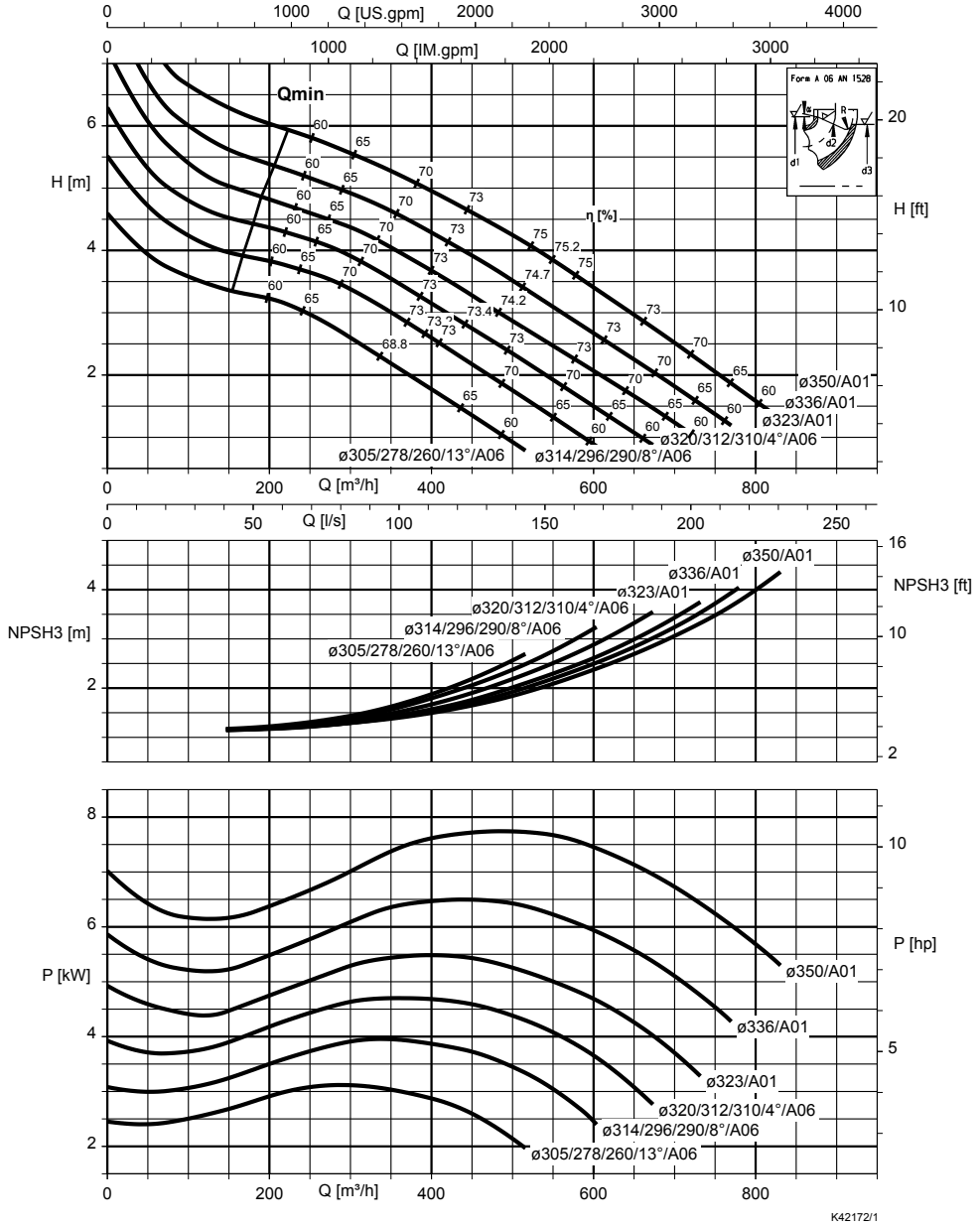
Rated power P_2 and mass moment of inertia J[32)]

Size	Motor	P_2	J
		[kW]	[kgm²]
700-324	11 8 UE/XE	11,0	0,64
700-324	15 8 UE/YE - IE3	7,5	0,64
700-324	18 8 UE/YE - IE2	11,0	0,68

32) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Amacan K 700-371, n = 725 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 105 mm

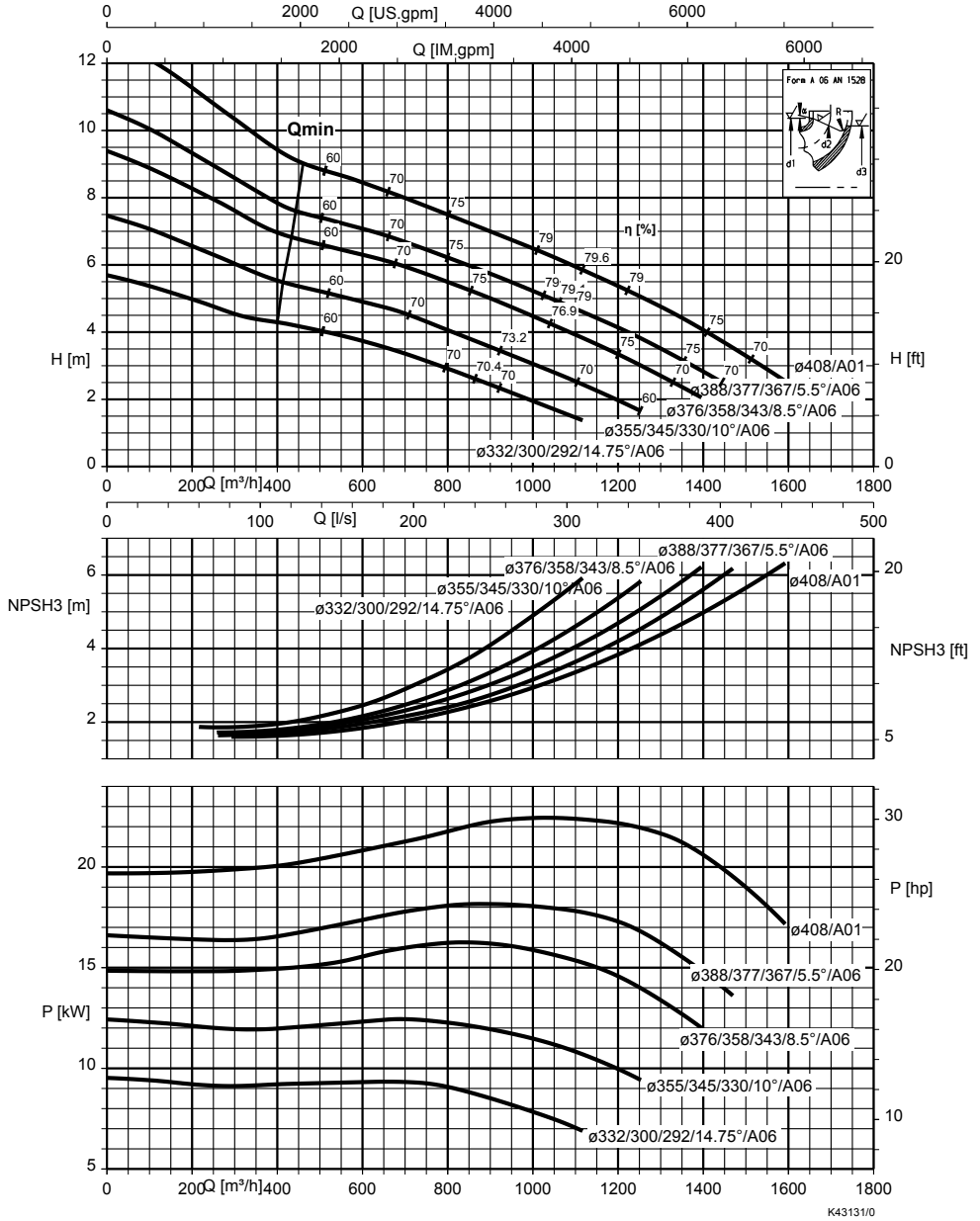
Rated power P_2 and mass moment of inertia J[33)]

Size	Motor	P_2	J
		[kW]	[kgm²]
700-371	11 8 UE/XE	11,0	0,74
700-371	15 8 UE/YE - IE3	7,5	0,74
700-371	18 8 UE/YE - IE2	11,0	0,78

33) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Amacan K 800-400, n = 725 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 100 mm

Rated power P_2 and mass moment of inertia J[34)]

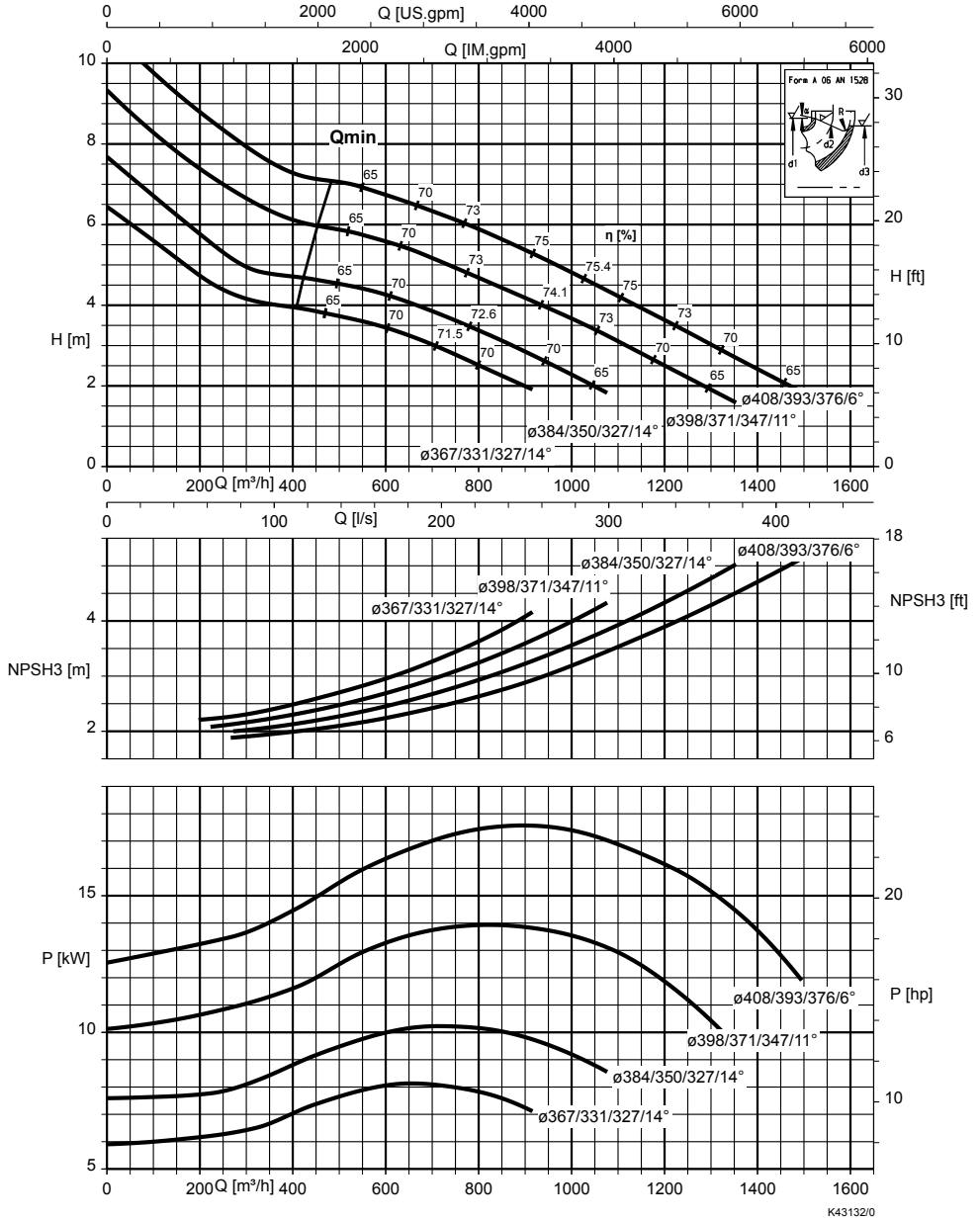
Size	Motor	P_2	J
		[kW]	[kgm²]
800-400	11 8 UE/XE	11,0	0,94
800-400	15 8 UE/XE	15,0	0,94
800-400	18 8 UE/XE	18,5	0,98
800-400	18 8 UE/YE - IE2	11,0	0,98
800-400	22 8 UE/XE	22,0	1,03
800-400	22 8 UE/YE - IE3	15,0	1,03
800-400	30 8 UE/XE	30,0	1,22

Size	Motor	P_2	J
		[kW]	[kgm²]
800-400	30 8 UE/YE - IE3	18,5	1,22
800-400	37 8 UE/YE - IE3	22,0	1,30
800-400	45 8 UE/YE - IE3	30,0	1,40

34) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Amacan K 800-401, n = 725 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 135 mm

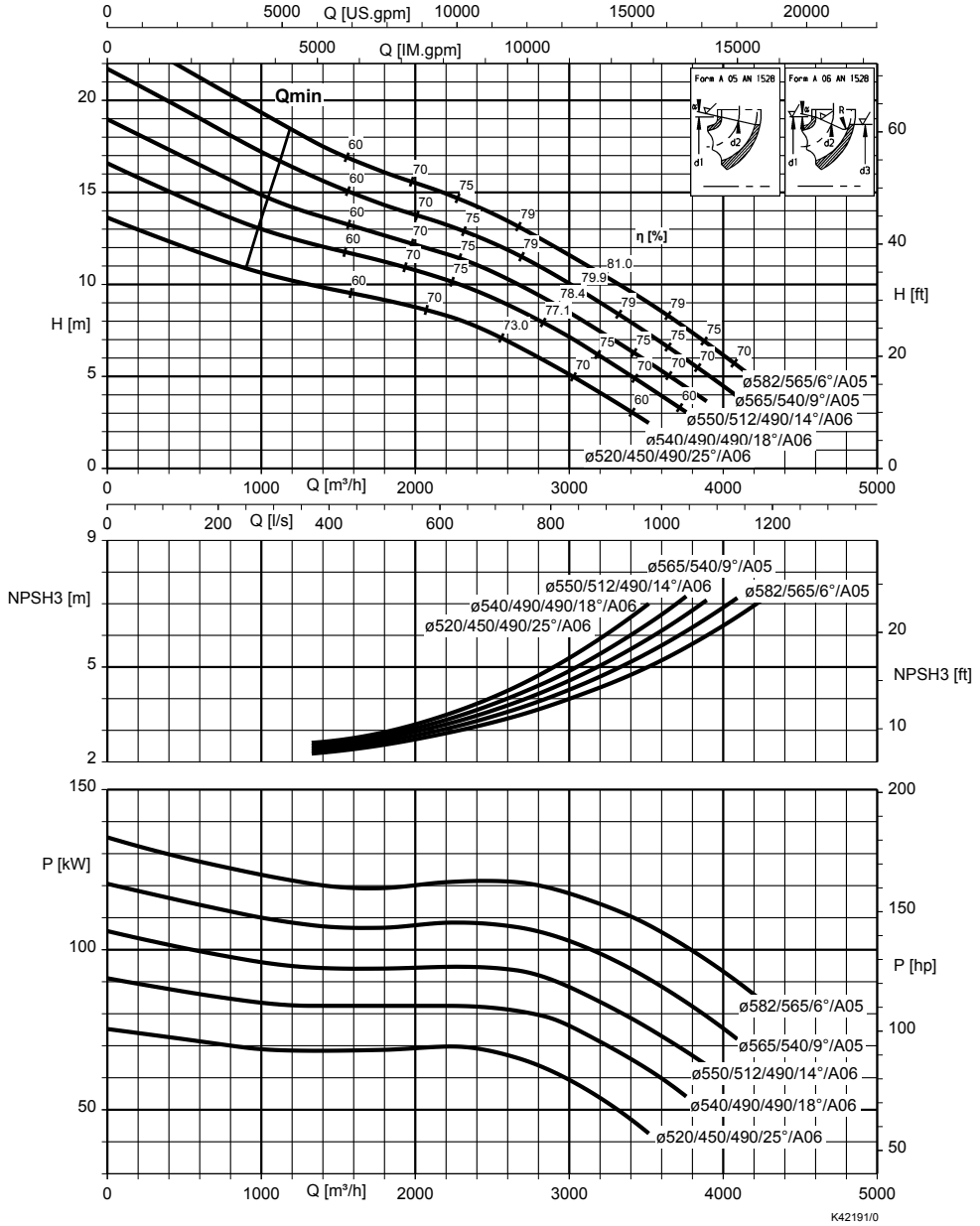
Rated power P_2 and mass moment of inertia J[35)]

Size	Motor	P_2	J
		[kW]	[kgm²]
800-401	11 8 UE/XE	11,0	0,94
800-401	15 8 UE/XE	15,0	0,94
800-401	18 8 UE/XE	18,5	0,98
800-401	18 8 UE/YE - IE2	11,0	0,98
800-401	22 8 UE/XE	22,0	1,03
800-401	22 8 UE/YE - IE3	15,0	1,03
800-401	30 8 UE/YE - IE3	18,5	1,22
800-401	37 8 UE/YE - IE3	22,0	1,30

35) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Amacan K 1200-630, n = 725 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 133 mm

Rated power P_2 and mass moment of inertia J[36)]

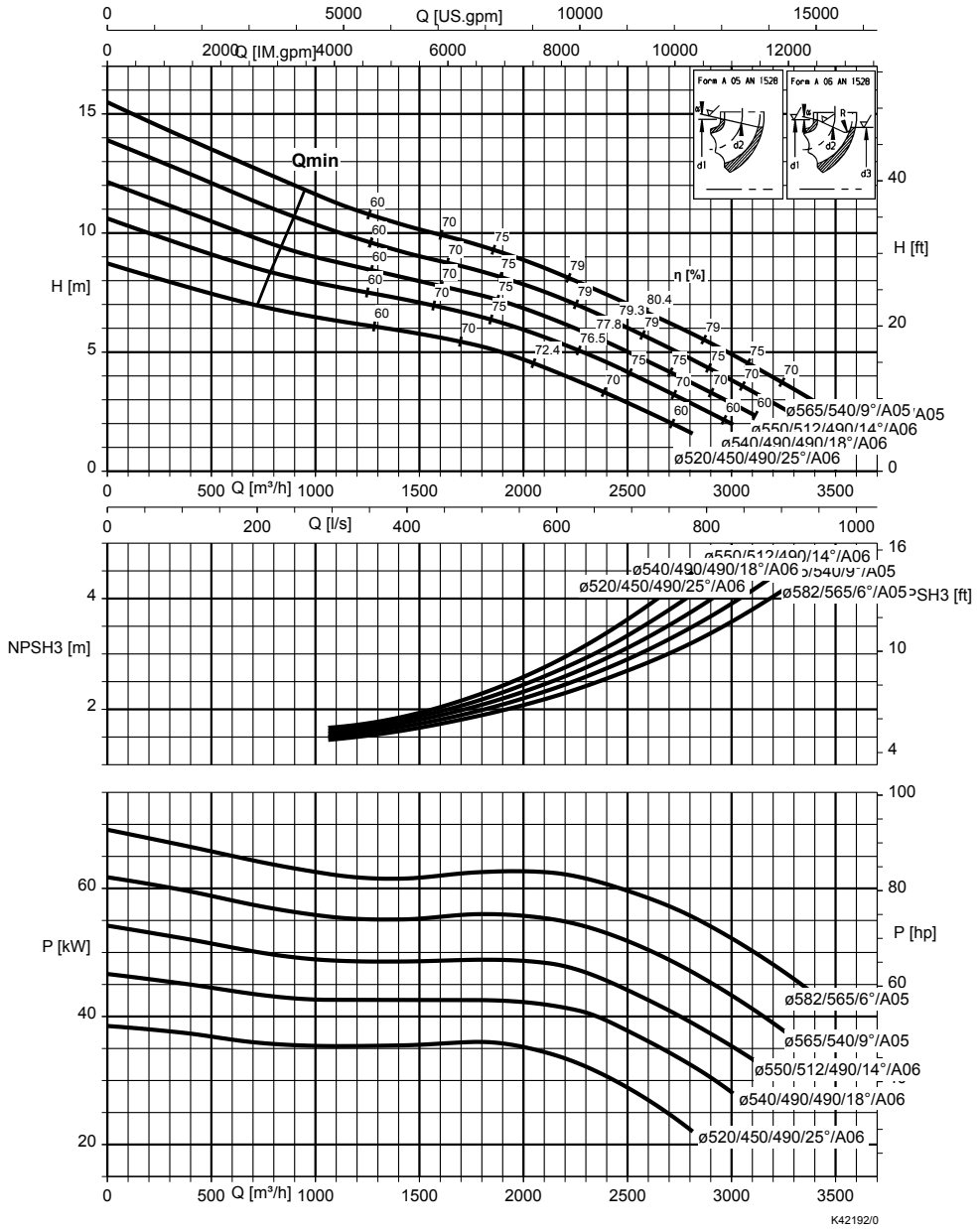
Size	Motor	P_2	J
		[kW]	[kgm²]
1200-630	90 8 UN/XN	90,0	7,20
1200-630	110 8 UN/XN	110,0	7,47
1200-630	110 8 UN/YN - IE3	75,0	7,47
1200-630	130 8 UN/XN	130,0	7,77
1200-630	150 8 UN/XN	150,0	12,52
1200-630	150 8 UN/YN - IE3	90,0	12,52
1200-630	185 8 UN/XN	110,0	13,79

36) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

n = 580 rpm

Amacan K 1200-630, n = 580 rpm

Characteristic curves in acc. with ISO 9906 / 2 / 2B. The characteristic curves correspond to the effective motor speed.



Free passage = 133 mm

Rated power P_2 and mass moment of inertia J[37)]

Size	Motor	P_2	J
		[kW]	[kgm²]
1200-630	40 10 UN/XN	40,0	6,97
1200-630	60 10 UN/XN	60,0	7,15
1200-630	75 10 UN/XN	75,0	7,42

37) These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.

Dimensions

Motor version UE, XE, YE

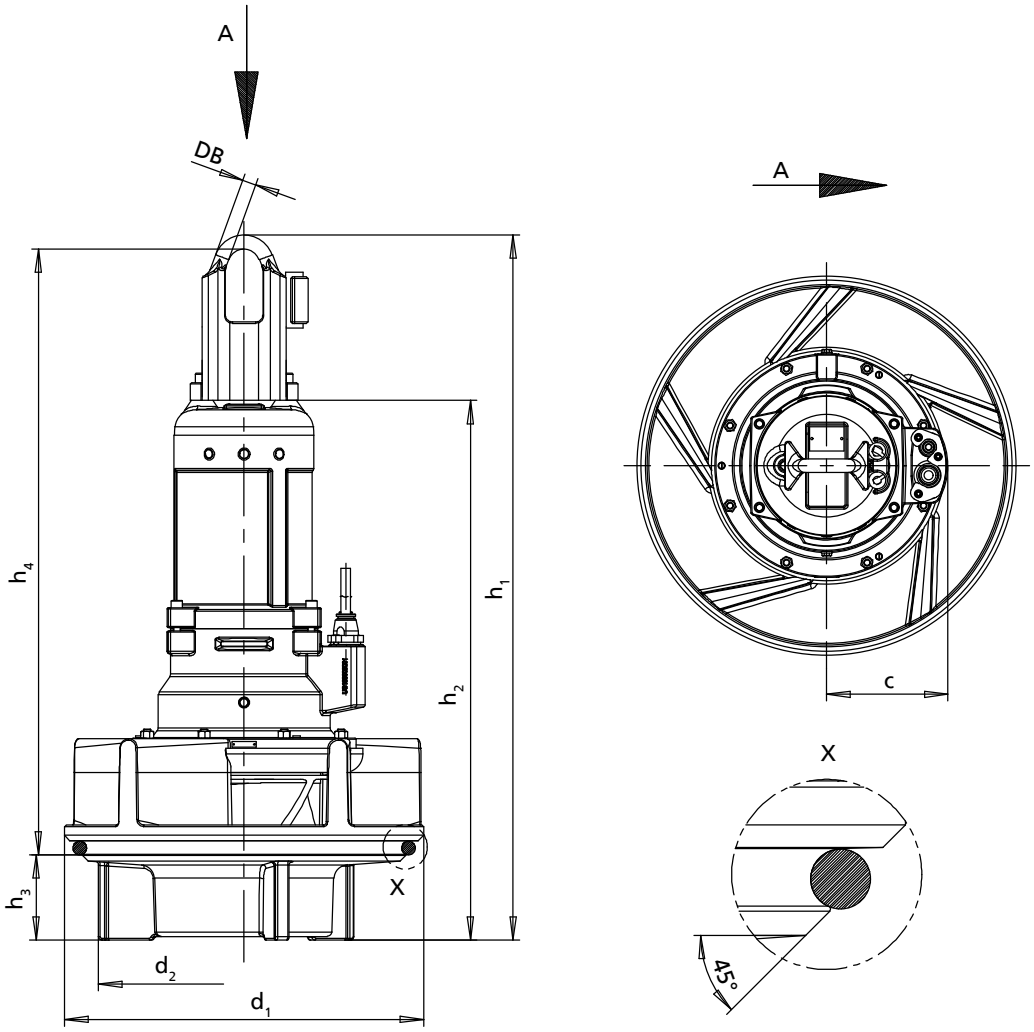


Fig. 1: Pump set dimensions

Pump set dimensions [mm]

Size	Motor	c	d_1	d_2	DB	h_1	h_2	h_3	h_4	[kg][38)]
700-324	22 6.E	260	670	556	30	1460	1105	151	1280	500
700-324	11 8.E	260	670	556	30	1460	1105	151	1280	480
700-324	15 8.E	260	670	556	30	1460	1105	151	1280	480
700-324	18 8.E	260	670	556	30	1460	1105	151	1280	500
700-330	30 4.E	260	670	556	30	1460	1105	151	1280	490
700-330	37 4.E	260	670	556	30	1460	1105	151	1280	530
700-330	22 6.E	260	670	556	30	1460	1105	151	1280	490
700-371	22 6.E	260	670	556	30	1460	1105	151	1280	520
700-371	11 8.E	260	670	556	30	1460	1105	151	1280	490
700-371	15 8.E	260	670	556	30	1460	1105	151	1280	490
700-371	18 8.E	260	670	556	30	1460	1105	151	1280	520
800-324	31 6.E	355	670	556	40	1435	1060	151	1245	650
800-324	37 6.E	355	670	556	40	1435	1060	151	1245	650
800-330	45 4.E	355	670	556	40	1435	1060	151	1245	620
800-330	55 4.E	355	670	556	40	1435	1060	151	1245	650
800-330	65 4.E	355	670	556	40	1580	1205	151	1390	710

38) Pump set with 10 m connection cable (400 V)

Size	Motor	c	d_1	d_2	DB	h_1	h_2	h_3	h_4	[kg][38)]
800-330	75 4.E	355	670	556	40	1580	1205	151	1390	740
800-330	31 6.E	355	670	556	40	1435	1060	151	1245	650
800-330	37 6.E	355	670	556	40	1435	1060	151	1245	650
800-370	22 6.E	260	760	640	30	1410	1055	148	1230	560
800-370	30 6.E	260	760	640	30	1410	1055	148	1230	590
800-370	31 6.E	355	760	640	40	1385	1010	148	1200	710
800-370	37 6.E	355	760	640	40	1385	1010	148	1200	710
800-370	45 6.E	355	760	640	40	1530	1155	148	1345	720
800-371	31 6.E	355	670	556	40	1435	1060	151	1245	670
800-371	37 6.E	355	670	556	40	1435	1060	151	1245	670
800-400	22 6.E	260	770	640	30	1515	1160	183	1300	620
800-400	30 6.E	260	770	640	30	1515	1160	183	1300	650
800-400	37 6.E	355	770	640	40	1490	1115	183	1270	770
800-400	45 6.E	355	770	640	40	1635	1260	183	1415	790
800-400	55 6.E	355	770	640	40	1635	1260	183	1415	840
800-400	11 8.E	260	770	640	30	1515	1160	183	1300	600
800-400	15 8.E	260	770	640	30	1515	1160	183	1300	600
800-400	18 8.E	260	770	640	30	1515	1160	183	1300	620
800-400	22 8.E	260	770	640	30	1515	1160	183	1300	650
800-400	30 8.E	355	770	640	40	1490	1115	183	1270	770
800-400	37 8.E	355	770	640	40	1635	1260	183	1415	790
800-400	45 8.E	355	770	640	40	1635	1260	183	1415	850
800-401	22 6.E	260	770	640	30	1515	1160	183	1300	630
800-401	30 6.E	260	770	640	30	1515	1160	183	1300	660
800-401	31 6.E	355	770	640	40	1490	1115	183	1270	780
800-401	37 6.E	355	770	640	40	1490	1115	183	1270	780
800-401	45 6.E	355	770	640	40	1635	1260	183	1415	800
800-401	55 6.E	355	770	640	40	1635	1260	183	1415	850
800-401	11 8.E	260	770	640	30	1515	1160	183	1300	610
800-401	15 8.E	260	770	640	30	1515	1160	183	1300	610
800-401	18 8.E	260	770	640	30	1515	1160	183	1300	630
800-401	22 8.E	260	770	640	30	1515	1160	183	1300	660
800-401	30 8.E	355	770	640	40	1490	1115	183	1270	780
800-401	37 8.E	355	770	640	40	1635	1260	183	1415	800

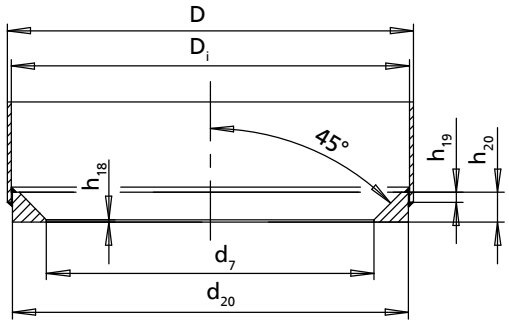


Fig. 2: Seating ring dimensions

Seating ring dimensions [mm]

Size	Motor	D[39)]	D_i	d_7	d_{20}	h_{18}	h_{19}	h_{20}
700-324	22 6.E	711	695	570	691	5	20	60
700-324	11 8.E	711	695	570	691	5	20	60
700-324	15 8.E	711	695	570	691	5	20	60
700-324	18 8.E	711	695	570	691	5	20	60
700-330	30 4.E	711	695	570	691	5	20	60
700-330	37 4.E	711	695	570	691	5	20	60

39) D for recommended wall thickness of the discharge tube (see dimension s1 in the General Arrangement Drawings)

Size	Motor	D[39)]	D_i	d_7	d_{20}	h_{18}	h_{19}	h_{20}
700-330	22 6.E	711	695	570	691	5	20	60
700-371	22 6.E	711	695	570	691	5	20	60
700-371	11 8.E	711	695	570	691	5	20	60
700-371	15 8.E	711	695	570	691	5	20	60
700-371	18 8.E	711	695	570	691	5	20	60
800-324	31 6.E	813	797	570	793	5	20	60
800-324	37 6.E	813	797	570	793	5	20	60
800-330	45 4.E	813	797	570	793	5	20	60
800-330	55 4.E	813	797	570	793	5	20	60
800-330	65 4.E	813	797	570	793	5	20	60
800-330	75 4.E	813	797	570	793	5	20	60
800-330	31 6.E	813	797	570	793	5	20	60
800-330	37 6.E	813	797	570	793	5	20	60
800-370	22 6.E	813	797	656	793	5	20	60
800-370	30 6.E	813	797	656	793	5	20	60
800-370	31 6.E	813	797	656	793	5	20	60
800-370	37 6.E	813	797	656	793	5	20	60
800-370	45 6.E	813	797	656	793	5	20	60
800-371	31 6.E	813	797	570	793	5	20	60
800-371	37 6.E	813	797	570	793	5	20	60
800-400	22 6.E	813	797	656	793	5	20	60
800-400	30 6.E	813	797	656	793	5	20	60
800-400	37 6.E	813	797	656	793	5	20	60
800-400	45 6.E	813	797	656	793	5	20	60
800-400	55 6.E	813	797	656	793	5	20	60
800-400	11 8.E	813	797	656	793	5	20	60
800-400	15 8.E	813	797	656	793	5	20	60
800-400	18 8.E	813	797	656	793	5	20	60
800-400	22 8.E	813	797	656	793	5	20	60
800-400	30 8.E	813	797	656	793	5	20	60
800-400	37 8.E	813	797	656	793	5	20	60
800-400	45 8.E	813	797	656	793	5	20	60
800-401	22 6.E	813	797	656	793	5	20	60
800-401	30 6.E	813	797	656	793	5	20	60
800-401	31 6.E	813	797	656	793	5	20	60
800-401	37 6.E	813	797	656	793	5	20	60
800-401	45 6.E	813	797	656	793	5	20	60
800-401	55 6.E	813	797	656	793	5	20	60
800-401	11 8.E	813	797	656	793	5	20	60
800-401	15 8.E	813	797	656	793	5	20	60
800-401	18 8.E	813	797	656	793	5	20	60
800-401	22 8.E	813	797	656	793	5	20	60
800-401	30 8.E	813	797	656	793	5	20	60
800-401	37 8.E	813	797	656	793	5	20	60

1579.5/09-EN

Motor version UN, XN, YN

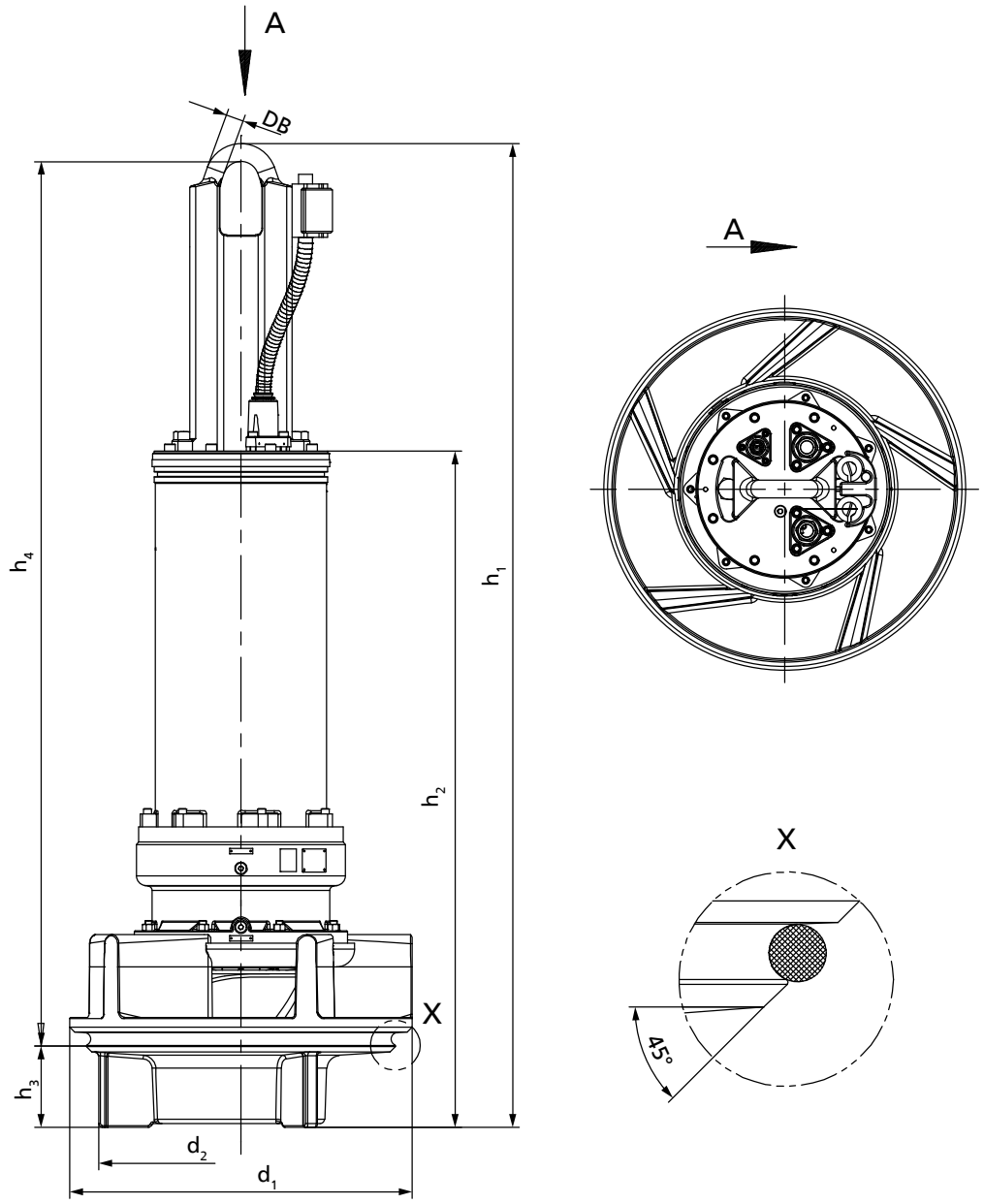


Fig. 3: Pump set dimensions

Pump set dimensions [mm]

Size	Motor	d_1	d_2	DB	h_1	h_2	h_3	h_4	[kg][40]
700-330	95 4.N	670	556	40	2355	1665	151	2165	1000
800-400	60 6.N	770	640	40	2210	1520	183	1985	1000
800-400	80 6.N	770	640	40	2410	1720	183	2185	1110
800-401	80 6.N	770	640	40	2410	1720	183	2185	1120
1000-420	60 6.N	970	840	40	2310	1620	209	2060	1280
1000-420	80 6.N	970	840	40	2510	1820	209	2260	1380
1000-420	100 6.N	970	840	40	2510	1820	209	2260	1460
1000-420	120 6.N	970	840	40	2625	1935	209	2375	1700
1000-420	140 6.N	970	840	40	2625	1935	209	2375	1750
1000-421	60 6.N	970	840	40	2310	1620	209	2060	1280
1000-421	80 6.N	970	840	40	2510	1820	209	2260	1380

40) Pump set with 10 m power cable (400 V)

Size	Motor	d_1	d_2	DB	h_1	h_2	h_3	h_4	[kg][40]
1000-421	100 6.N	970	840	40	2510	1820	209	2260	1460
1000-421	120 6.N	970	840	40	2625	1935	209	2375	1700
1000-421	140 6.N	970	840	40	2625	1935	209	2375	1750
1000-500	80 6.N	970	820	40	2515	1825	205	2270	1390
1000-500	100 6.N	970	820	40	2515	1825	205	2270	1470
1000-500	120 6.N	970	820	40	2630	1940	205	2385	1710
1000-500	140 6.N	970	820	40	2630	1940	205	2385	1760
1000-500	165 6.N	970	820	40	2630	1940	205	2385	1830
1000-500	190 6.N	970	820	50	2885	2285	205	2630	2500
1000-500	225 6.N	970	820	50	2885	2285	205	2630	2670
1200-630	190 6.N	1140	960	50	2940	2340	268	2620	2730
1200-630	225 6.N	1140	960	50	2940	2340	268	2620	2890
1200-630	260 6.N	1140	960	50	2940	2340	268	2620	3120
1200-630	320 6.N	1140	960	60	3205	2505	268	2875	3740
1200-630	360 6.N	1140	960	60	3205	2505	268	2875	3880
1200-630	400 6.N	1140	960	60	3430	2730	268	3360	4190
1200-630	440 6.N	1140	960	60	3430	2730	268	3360	4390
1200-630	90 8.N	1140	960	40	2685	1995	268	2380	1960
1200-630	110 8.N	1140	960	40	2685	1995	268	2380	2020
1200-630	130 8.N	1140	960	40	2685	1995	268	2380	2090
1200-630	150 8.N	1140	960	50	2940	2340	268	2620	2720
1200-630	185 8.N	1140	960	50	2940	2340	268	2620	2880
1200-630	40 10.N	1140	960	40	2685	1995	268	2380	1890
1200-630	60 10.N	1140	960	40	2685	1995	268	2380	1930
1200-630	75 10.N	1140	960	40	2685	1995	268	2380	1990

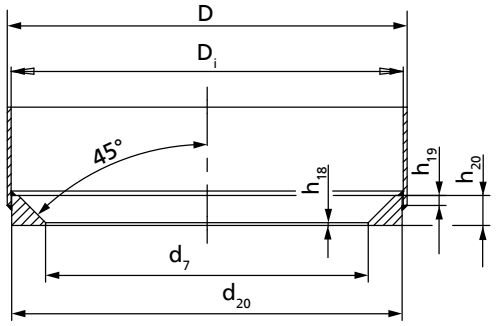


Fig. 4: Seating ring dimensions

Seating ring dimensions [mm]

Size	Motor	D[41]	D_i	d_7	d_{20}	h_{18}	h_{19}	h_{20}
700-330	95 4.N	711	695	570	691	5	20	60
800-400	60 6.N	813	797	656	793	5	20	60
800-400	80 6.N	813	797	656	793	5	20	60
800-401	80 6.N	813	797	656	793	5	20	60
1000-420	60 6.N	1016	996	856	992	5	20	60
1000-420	80 6.N	1016	996	856	992	5	20	60
1000-420	100 6.N	1016	996	856	992	5	20	60
1000-420	120 6.N	1016	996	856	992	5	20	60
1000-420	140 6.N	1016	996	856	992	5	20	60
1000-421	60 6.N	1016	996	856	992	5	20	60
1000-421	80 6.N	1016	996	856	992	5	20	60
1000-421	100 6.N	1016	996	856	992	5	20	60
1000-421	120 6.N	1016	996	856	992	5	20	60
1000-421	140 6.N	1016	996	856	992	5	20	60

41) D for recommended wall thickness of the discharge tube (see dimension s1 in the general arrangement drawings or in General Arrangement Drawings booklet 1579.39)

Size	Motor	D[41)]	D_i	d_7	d_{20}	h_{18}	h_{19}	h_{20}
1000-500	80 6.N	1016	996	856	992	5	20	60
1000-500	100 6.N	1016	996	856	992	5	20	60
1000-500	120 6.N	1016	996	856	992	5	20	60
1000-500	140 6.N	1016	996	856	992	5	20	60
1000-500	165 6.N	1016	996	856	992	5	20	60
1000-500	190 6.N	1016	996	856	992	5	20	60
1000-500	225 6.N	1016	996	856	992	5	20	60
1200-630	190 6.N	1220	1196	1015	1192	5	20	60
1200-630	225 6.N	1220	1196	1015	1192	5	20	60
1200-630	260 6.N	1220	1196	1015	1192	5	20	60
1200-630	320 6.N	1220	1196	1015	1192	5	20	60
1200-630	360 6.N	1220	1196	1015	1192	5	20	60
1200-630	400 6.N	1220	1196	1015	1192	5	20	60
1200-630	440 6.N	1220	1196	1015	1192	5	20	60
1200-630	90 8.N	1220	1196	1015	1192	5	20	60
1200-630	110 8.N	1220	1196	1015	1192	5	20	60
1200-630	130 8.N	1220	1196	1015	1192	5	20	60
1200-630	150 8.N	1220	1196	1015	1192	5	20	60
1200-630	185 8.N	1220	1196	1015	1192	5	20	60
1200-630	40 10.N	1220	1196	1015	1192	5	20	60
1200-630	60 10.N	1220	1196	1015	1192	5	20	60
1200-630	75 10.N	1220	1196	1015	1192	5	20	60

Types of installation

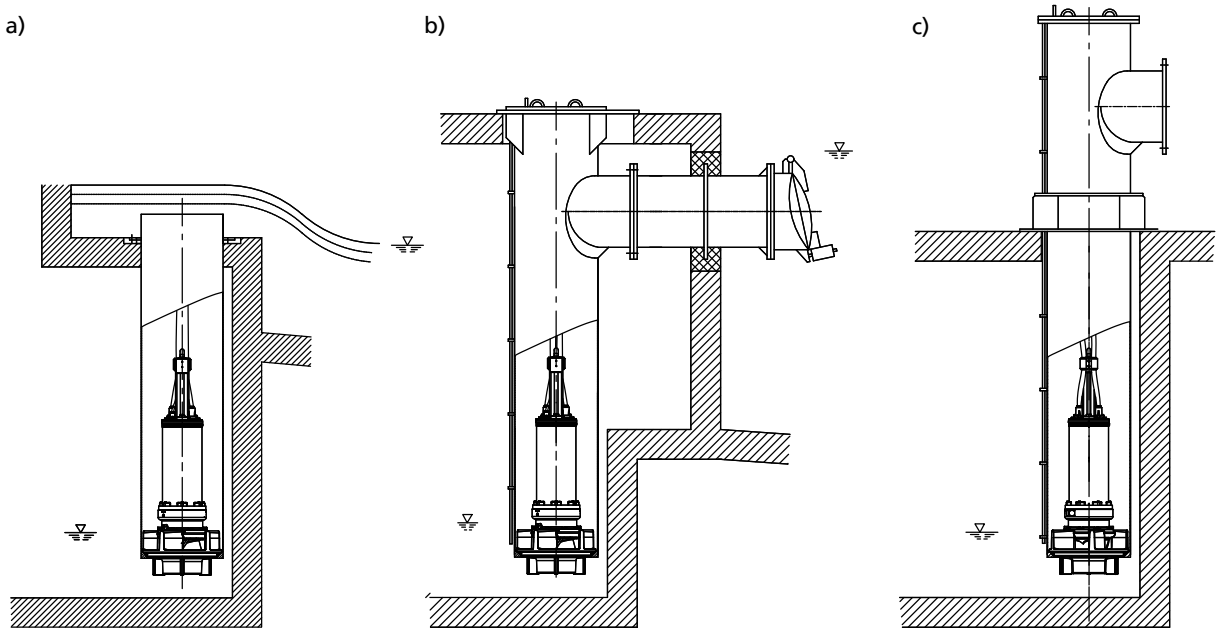


Fig. 5: Overview of installation types a) Installation type BU (overflow design) b) Installation type CU (underfloor discharge) c) Installation type DU (above-floor discharge nozzle)

Scope of supply

Depending on the model, the following items are included in the scope of supply:

- Pump set complete with connection cables
- O-ring
- Back-up name plate

Optional accessories:

- Support rope
- Accessories for installing the cable guide:
  - Special pipe part
  - Turnbuckle
  - Support
  - Shackle
  - Hose clips
- Cable support sleeves
- Discharge tube

1579.5/09-EN

Accessories

Pump set with support rope and turnbuckle in the discharge tube

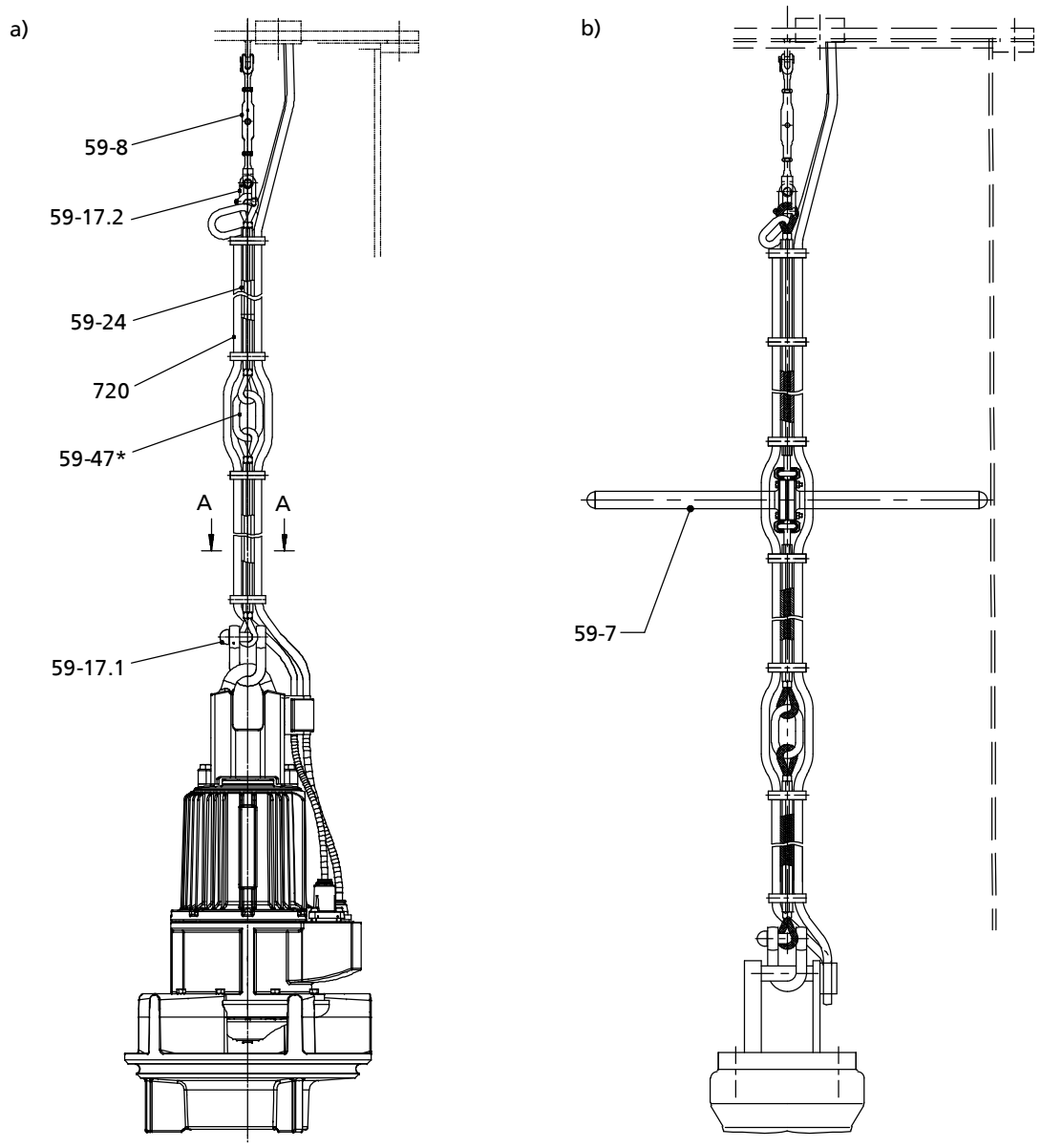


Fig. 6: a) Pump set with support rope and turnbuckle in the discharge tube b) Pump set with support rope and turnbuckle in the discharge tube, with support spacer for large installation depths

*	Optionally available. The number depends on the lifting height of the lifting equipment and on the building structure.

List of components

Part No.	Description	Material
59-17.1	Shackle	Galvanised steel (optional: stainless steel)
59-17.2	Shackle	Stainless steel
59-24	Rope	Stainless steel
59-47	Lifting ring (intermediate lifting ring)	Stainless steel
59-7	Support	GFK
59-8	Turnbuckle	Stainless steel
720	Spacer	EPDM

Cross-section of cable support

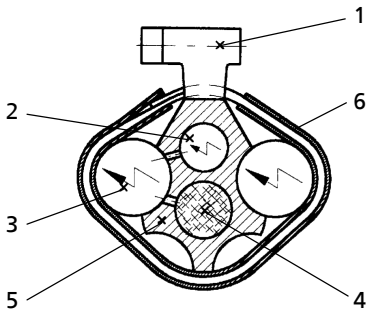


Fig. 7: Cross-section of cable support

List of components

Part No.	Description	Part No.	Description
1	Cable clamp (approximately every 400 mm)	4	Support rope 59-24
2	Control cable	5	Spacer
3	Power cable	6	Clamp cover

Discharge tube cover with cable gland

Design: with welding sleeve

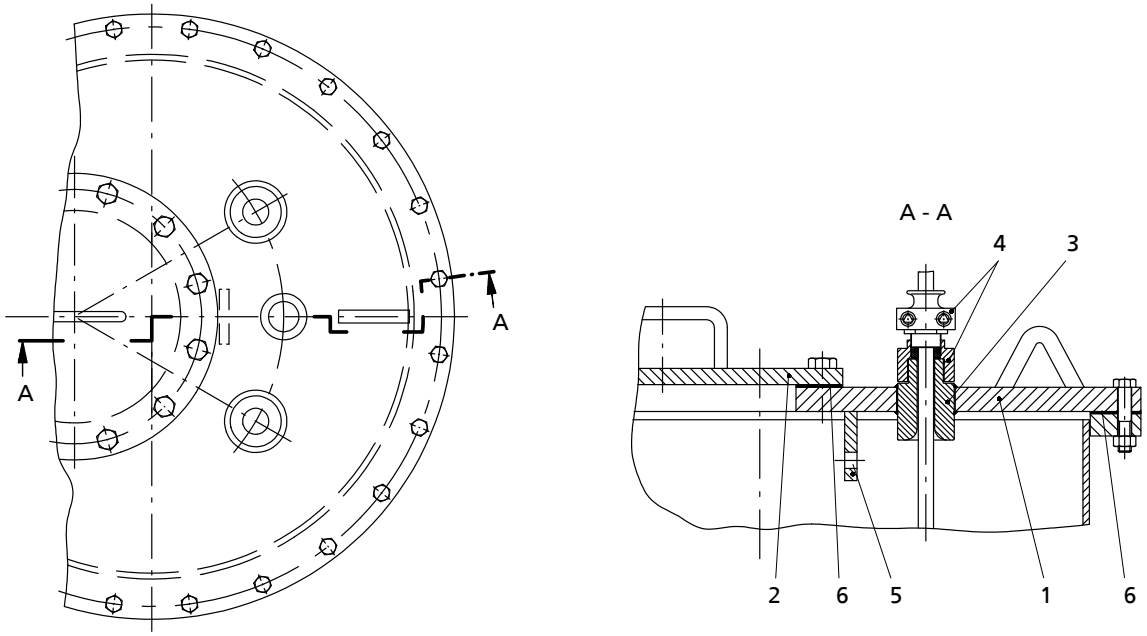


Fig. 8: Design variant with welding sleeve

List of components

Part No.	Description	Part No.	Description
1	Discharge tube cover[42)]	4	Threaded bush with cable entry to DIN 22419 with strain relief and protection against kinking and twisting
2	Cover	5	Eyeplate for fastening the cable support (support rope)
3	Welding sleeve	6	Gasket, e.g. fabric-reinforced rubber

42) Discharge tube cover also available in split design.

Design variant with transit frame (up to 1 bar)

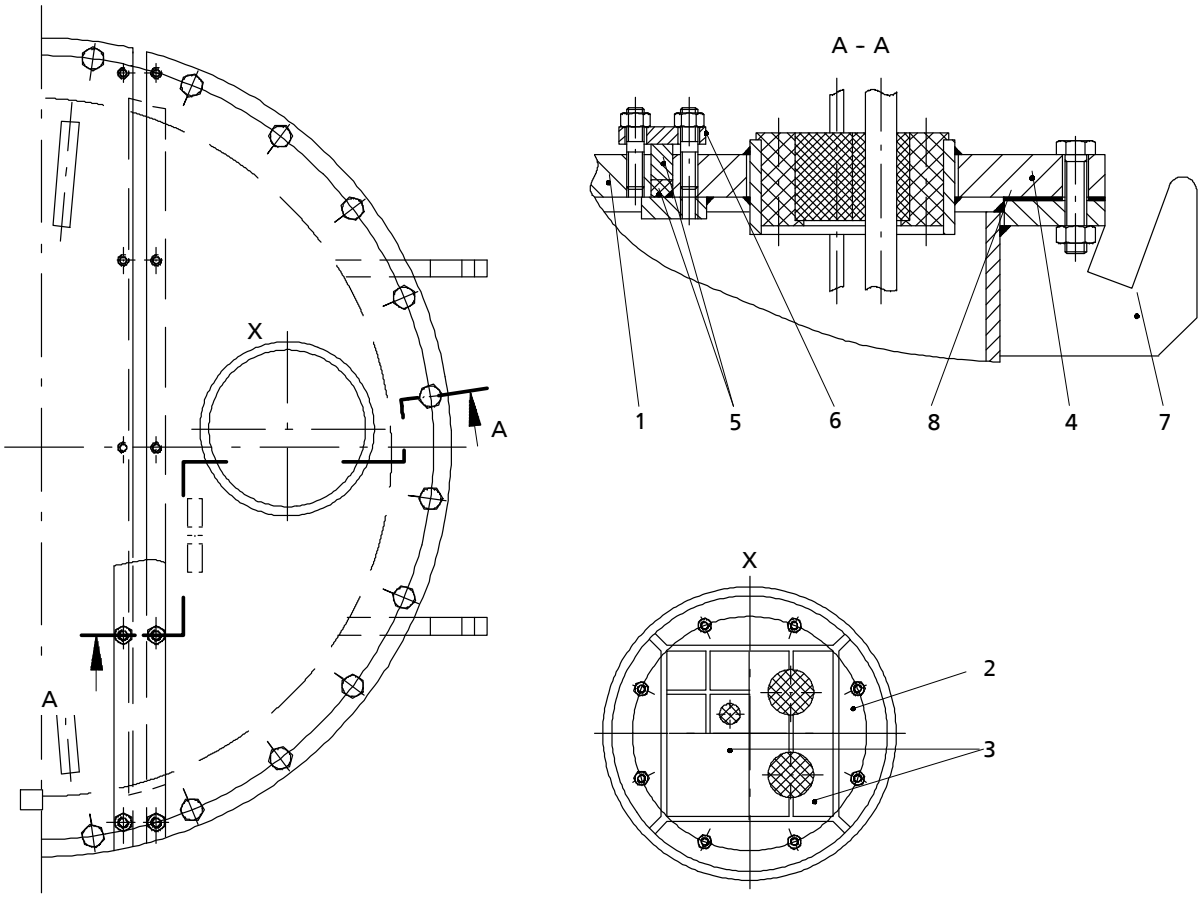


Fig. 9: Design variant with transit frame (up to 1 bar)

List of components

Part No.	Description
1	Discharge tube cover[43)]
2	Transit frame (cable gland)
3	Packing blocks and insert blocks
4	Cover segment with cable gland
5	Closed-cell profile seal in groove between the two cover parts
6	Sealing arrangement of groove between the two cover parts
7	Support brackets for cover segment with cable glands
8	Gasket (e.g. rubber with fabric reinforcement)

43) Discharge tube cover also available in single-piece design.

General assembly drawings with list of components

Motor version UE, XE, YE

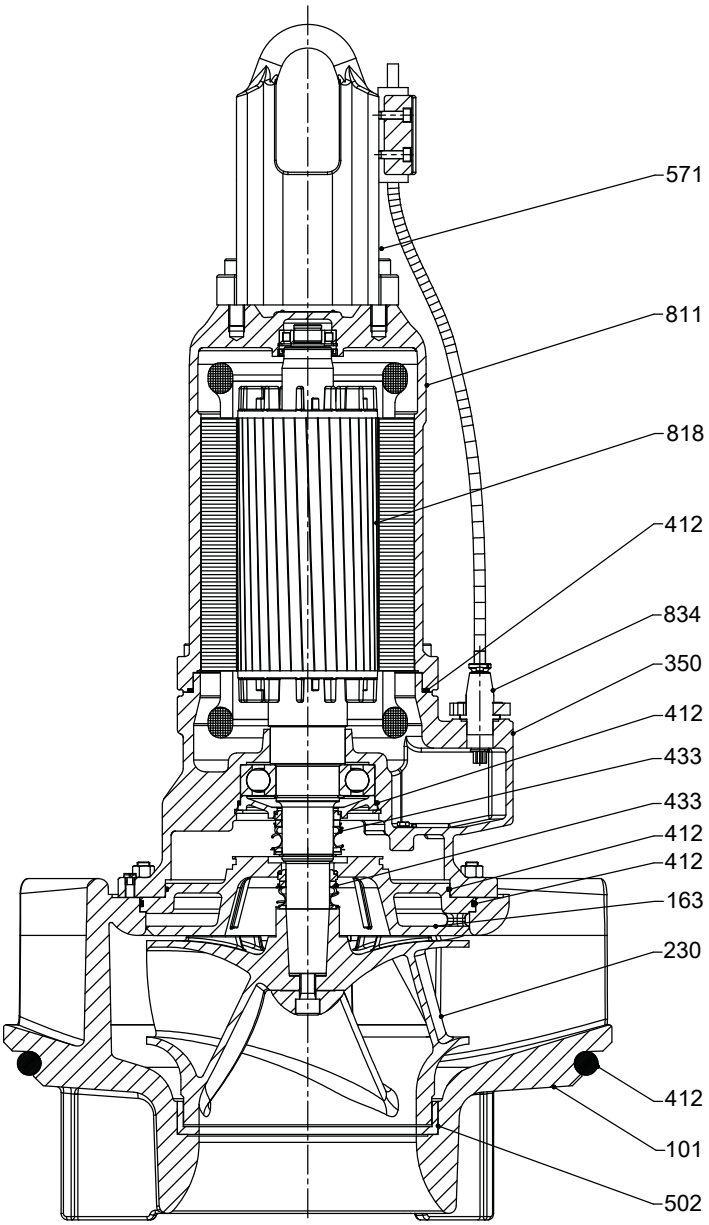


Fig. 10: General assembly drawing, motor version UE, XE, YE

List of components

Part No.	Description	Part No.	Description
101	Pump casing	502	Casing wear ring
163	Discharge cover	571	Bail
230	Impeller	811	Motor housing
350	Bearing housing	818	Rotor
412	O-ring	834	Cable gland
433	Mechanical seal		

Motor version UN, XN, YN

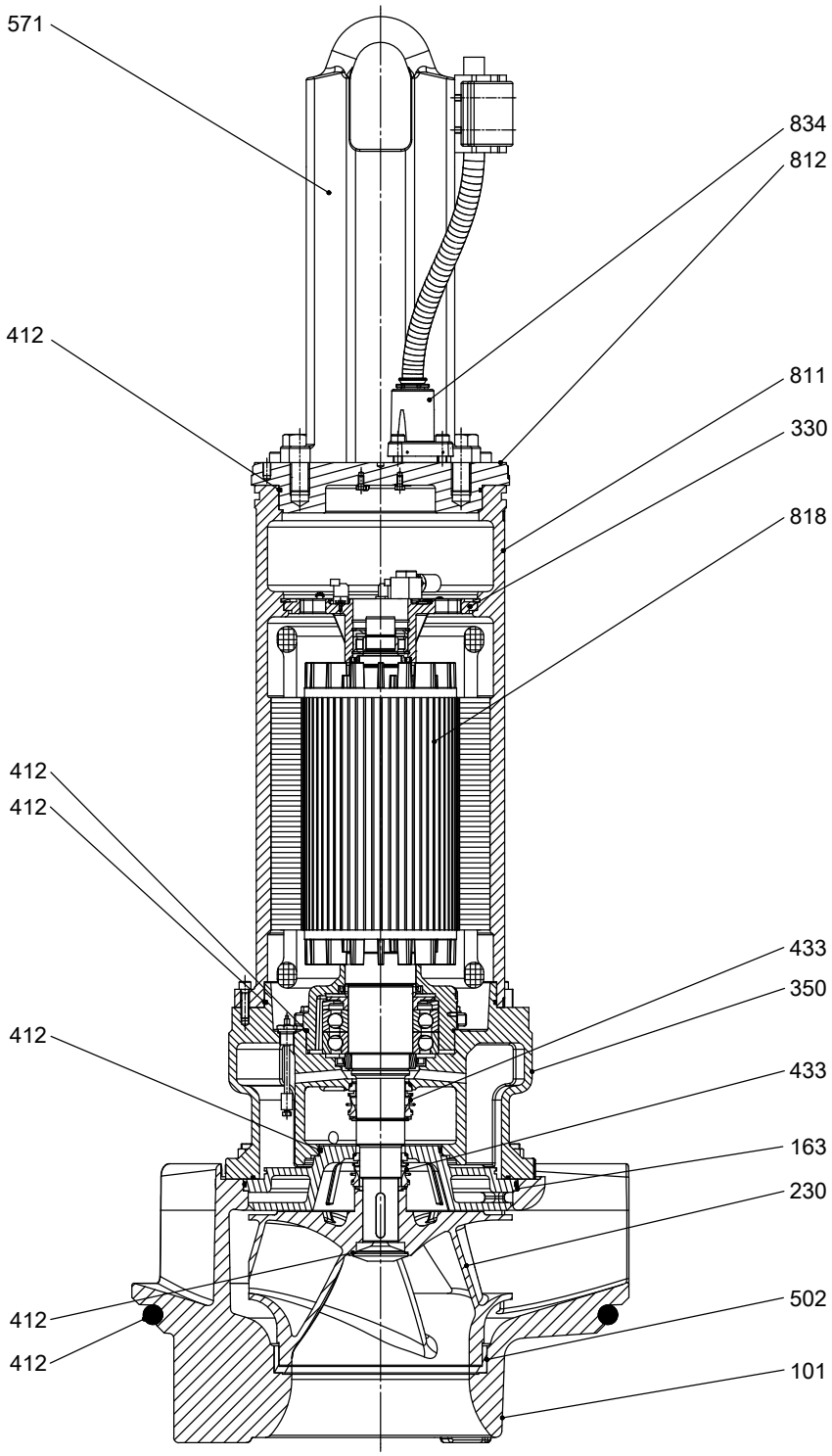


Fig. 11: General assembly drawing, motor version UN, XN, YN

List of components

Part No.	Description	Part No.	Description
101	Pump casing	502	Casing wear ring
163	Discharge cover	571	Bail
230	Impeller	811	Motor housing
330	Bearing bracket	812	Motor housing cover
350	Bearing housing	818	Rotor
412	O-ring	834	Cable gland
433	Mechanical seal		

15/04/2020

1579.5/09-EN

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