Submersible Pump in Discharge Tube

# AmaCan P

AmaCan P 400 - 290
AmaCan P 500 - 325
AmaCan P 600 - 351
AmaCan P 700 - 471
AmaCan P 800 - 471
60 Hz

# Type Series Booklet

## Legal information/Copyright

Type Series Booklet AmaCan P

# Contents

# Water Applications: Water Transport / Waste Water Transport, Flood Protection

## Submersible Pump in Discharge Tubes

# AmaCan P

### Main applications

- Irrigation pumping stations
- Drainage pumping stations
- Stormwater pumping stations
- Raw water pumps and clean water pumps in waterworks and waste water treatment plants
- Cooling water pumps in power stations and in industry
- Industrial water supply
- Water pollution control
- Flood control
- Aquaculture

### Fluids handled

- Waste water
- Sludge
- Surface water
- Stormwater
- Gray water
- Seawater
- Brackish water

### Operating data

**Table 1:** Operating properties

| Characteristic | | Value |
|---|---|---|
| Flow rate | Q [US.gpm] | ≤ 22980 |
| | Q [l/s] | ≤ 1450 |
| Head | H [ft] | ≤ 30 |
| | H [m] | ≤ 9 |
| Motor rating | $P_2$ [hp] | ≤ 218 |
| | $P_2$ [kW] | ≤ 160 |
| Fluid temperature | T [°F] | ≤ +104 |
| | T [°C] | ≤ 40 |

### Designation

### Example: AmaCan PA3 400-290 / 15 6 UW G1 IE4

**Table 2:** Designation key

| Code | Description | |
|---|---|---|
| AmaCan | Type series | |
| P | Impeller type | |
| | P | Propeller |
| A | Impeller variant | |
| | A | |
| 3 | Number of blades | |
| | 3 | |
| | 4 | |
| 400 | Nominal diameter of the discharge tube [mm] | |
| 290 | Nominal impeller diameter [mm] | |
| 15 | Motor size | |
| 6 | Number of motor poles | |
| UW | Motor version | |
| | UT, UV | Three-phase asynchronous motor, non-explosion-proof |
| | XT, XV | Three-phase asynchronous motor, explosion-proof |
| | UW | Three-phase synchronous motor, non-explosion-proof |
| | XW | Three-phase synchronous motor, explosion-proof |
| G1 | Material variant | |
| | G1 | Gray cast iron, standard material variant |
| | G2 | Gray cast iron, casing wear ring made of stainless steel |
| | G3 | Gray cast iron with Zn anodes, shaft made of A 276 type 431 stainless steel |
| IE4 | Motor efficiency classification[1] | |
| | -[2] | No efficiency classification |
| | IE3 | Premium Efficiency |
| | IE4 | Super Premium Efficiency |

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

2 Blank

## Design details

### Design

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

### Drive

- Motor versions UT, UV, XT, XV
  - Three-phase asynchronous squirrel-cage motor
  - Motors integrated in explosion-proof pump sets are supplied in Explosionproof Class I Division 1, Groups C&D, T3.
- Motor versions UW, XW
  - Three-phase synchronous motor with permanent-magnet rotor
  - Motors integrated in explosion-proof pump sets are supplied in Explosionproof Class I Division 1, Groups C&D, T3.

### Shaft seal

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

### Impeller type

- Axial propeller in ECB design[3)]

### Bearings

- Grease-packed rolling element bearings

### Monitoring equipment

Various sensor packages are available for pump/pump set monitoring:

- **Basic**
  - Motor temperature monitoring (PTC thermistor)
  - Leakage sensor in the motor space
  - Mechanical seal leakage sensor (float switch)
  - Bearing temperature monitoring, pump end (Pt100)[4)]
- **Basic+**[5)]
  - Motor temperature monitoring (PTC thermistor)
  - Leakage sensor in the motor space
  - Mechanical seal leakage sensor (float switch)
  - Bearing temperature monitoring, drive end (Pt100)[6)]
  - Bearing temperature monitoring, pump end (Pt100)
- **Premium**
  - Motor temperature monitoring (PTC thermistor)
  - Leakage sensor in the motor space
  - Mechanical seal leakage sensor (float switch)
  - Bearing temperature monitoring, drive end (Pt100)
  - Bearing temperature monitoring, pump end (Pt100)
  - Vibration monitoring
  - Motor temperature measurement (Pt100)

The sensor information can optionally be evaluated via AmaControl using the live diagnosis function:

- Directly on site with the KSB INTspector app
- In additional external systems via ModBus

3 ECB = Self-cleaning blade profile (EverCleanBlade)
4 Exception: Size 400-290 is not fitted with pump-end bearing temperature monitoring.
5 Exception: Sizes 500-325 and 600-351 are not available with the sensor package Basic+.
6 Exception: Size 400-290 is not fitted with motor-end bearing temperature monitoring.

## Materials

**Table 3:** Overview of materials depending on material variant

| Part No. | Description | Material variant | | |
|---|---|---|---|---|
| | | G1[7] | G2 | G3[8] (seawater variant) |
| 112 | Pump bowl | EN: EN-GJL-250 / ASTM: A 48 Class 35 B | | |
| 138 | Bellmouth | EN: EN-GJL-250 / ASTM: A 48 Class 35 B | | |
| 230 | Impeller | EN: 1.4517 / ASTM: A 890 | | |
| 350/330 | Bearing housing / bearing bracket | EN: EN-GJL-250 / ASTM: A 48 Class 35 B | | |
| 360 | Bearing cover | EN: EN-GJL-250 / ASTM: A 48 Class 35 B | | |
| 412 | O-ring | EN/ASTM: NBR[9]<br>EN: (Viton-FPM)[10] / ASTM: (Viton-FKM)[10] | | |
| 433 | Mechanical seal (pump end) | SiC/SiC | | |
| | Mechanical seal (drive end) | Carbon/SiC | | |
| 502 | Casing wear ring | EN: EN-GJL-250 / ASTM: A 48 Class 35 B | Stainless steel | |
| 571 | Bail | EN: Stainless steel / EN-GJS-500-7 / EN-GJS-400-15[11]/<br>ASTM: Stainless steel / A536: 70-50-05 / A 536: 60–40–18[11] | | |
| 811 | Motor housing | EN: EN-GJL-250 / ASTM: A 48 Class 35 B | | |
| 812 | Motor housing cover | EN: EN-GJL-250 / ASTM: A 48 Class 35 B | | |
| 818 | Shaft (rotor) | EN: 1.4021/20Cr13/ ASTM: A 276 Type 420 | | EN: 1.4057/ ASTM: A 276 Type 431 |
| 834 | Cable gland | - | | |
| | Cable gland housing | EN: EN-GJL-250 / ASTM: A 48 Class 35 B | | |
| Var. | Bolts/screws | Stainless steel | | |
| 99-16 | Anode | - | | Zn |
| Other materials on request | | | | |

**Duplex stainless steel (1.4517 or technically equivalent material)**

This type of cast 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 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 phosphorus 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), gray 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).

## Product benefits

- The pump's own weight ensures self-centering seating in the discharge tube, and an O-ring seals it; quick to install or remove without additional anchoring or anti-rotation device.
- Optimum hydraulic and energy efficiency by high-efficiency motors and variable hydraulic systems
- The slim motor keeps discharge tube flow losses down.
- 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 optimized bellmouth for vortex-free inflow.

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7 Only possible for sizes 400-290 and 500-325
8 Pump set with cathodic protection (anodes to be checked every 6 to 12 months) and top coat of 250 µm
9 Nitrile rubber (Perbunan)
10 FPM/FKM fluorocarbon rubber variant available as an option against a surcharge
11 Size 400-290: stainless steel; size 500-325: EN-GJS-500-7; from size 600-351: EN-GJS-400-15

- Absolutely water-tight resin-sealed cable entries prevent any water from entering the motor – even in the event of a damaged connection cable.
- Highest operating reliability by casing wear ring with groove for flushing
- IIoT[12]-capable: Internal sensor module and AmaControl analyzing device can be used.

## Acceptance tests and warranty

### Functional test

- Every pump undergoes functional testing to KSB standard ZN 56535.
- Hydraulic values are guaranteed to EN ISO 9906 Class 2B or Hydraulic Institute, Level B.

### Acceptance tests

- Acceptance testing to ISO/DIN or comparable standards is 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

### Information for pump selection

The guaranteed point of submersible pumps in discharge tubes is measured at a head of 1.65 ft [0.5 m] above the motor. 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 $\rho = 7.48$ lbs/ft$^3$ [1 kg/dm$^3$] and a kinematic viscosity v of up to 20 mm$^2$/s.

- Adjust the power input to the density of the fluid handled: $P_2$ (required) = $\rho$ [kg/dm$^3$] (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.

**Table 4:** Recommended motor power reserve[13]

| $P_2$ | | Reserve | | |
|---|---|---|---|---|
| [hp] | [kW] | Mains operation | With frequency inverter | |
| | | | Motor version | |
| | | | UV, XV, UT, XT | UW, XW |
| ≤ 40 | ≤ 30 | 10 % | 15 % | 10 % |
| > 40 | ≤ 30 | 5 % | 10 % | 5 % |

### Intake chamber

Determine the minimum water level $t_{lmin}$ (diagram in general arrangement drawing):
The minimum water level $t_{lmin}$ is the water level required in the pump's suction chamber to ensure the following:

- The hydraulic system (impeller) is sufficiently submerged (shown in diagram depending on pump size).
- The pump does not draw in air-entraining vortices (shown in diagram depending on flow rate).
- The hydraulic system is free from cavitation (check against the $NPSH_{required}$ value indicated the technical literature). The following conditions must be met:
  - $NPSH_{available} > NPSH_{required}$ + safety margin
  - $NPSH_{available} = 33$ ft [10.0 m] + ($t_1 - t_3 - h_7/2$)
  - Safety margin:
    up to $Q_{opt} \Rightarrow$1.65 ft [0.5 m]
    larger than $Q_{opt} \Rightarrow$ 3.3 ft [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 suction-side water level and overflow edge
- With discharge elbow: difference between suction-side and discharge-side water level

$\Delta H_V$ (losses in the system)

- Starting 1.65 ft [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 (1.65 ft [0.5 m] above the motor) are taken into account in the documented characteristic curves.
- Inlet losses and elbow losses are system losses. These losses must be taken into account for selection.
- For information on structural requirements, pump installation and pump sump design please refer to the KSB know-how brochure "Planning Information: Amacan Submersible Pumps in Discharge Tubes" 1581.025.

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12 IIoT = Industrial Internet of Things

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

## Overview of product features / selection tables

### Overview of fluids handled

**Table 5:** Selection aid for material variants and fluid temperature per fluid

| Fluid handled[14] | Max. permissible fluid temperature [°F] | Max. permissible fluid temperature [°C] | Material variant | Increased clearance | Casing wear ring with a groove for flushing[15] | Screen[16] | Comments, further recommendations |
|---|---|---|---|---|---|---|---|
| **Waste water** | | | | | | | |
| ▪ Industrial, corrosive, non-abrasive, slightly acidic; pH value ≥ 6 | 104 | 40 | G2 | ○ | ○ | ✓ | Two-component high solid epoxy finish coat (RAL 5002) 250 µm required |
| ▪ Industrial, corrosive, non-abrasive, with lacquer/paint/varnish suspensions | 104 | 40 | G2 | ○ | ○ | ○ | Lacquer/paint/varnish suspension = free of solvents |
| ▪ Industrial, corrosive, non-abrasive fluids containing feces | 104 | 40 | G2 | ✓ | ✓ | ✓ | - |
| ▪ Industrial, corrosive, non-abrasive fluids not containing feces | 104 | 40 | G2 | ○ | ○ | ✓ | - |
| ▪ Treated municipal waste water | 104 | 40 | G1 | ○ | ○ | ✓ | - |
| **Suspended solids, water/sand mixture** | 104 | 40 | G2 | ✓ | ○ | ○ | Up to 200 mg/l |
| **Sludge** | 104 | 40 | G1 | ✓ | ✓ | ○ | Up to 2 % dry solids content |
| **Water, seawater and brackish water** | 77[17] | 25[17] | G3 | ○ | ○ | ○ | Anodes[18] and two-component high solid epoxy finish coat (RAL 5002) 250 µm required |
| **Water, cooling water** | 104 | 40 | G1 | ○ | ○ | ○ | - |
| **Water, surface water** | | | | | | | |
| ▪ River water | 104 | 40 | G1 | ✓ | ✓ | ✓ | - |
| ▪ No details specified | 104 | 40 | G1 | ✓ | ✓ | ✓ | - |
| ▪ Lake water, fresh water | 104 | 40 | G1 | ○ | ○ | ✓ | - |
| ▪ Lake water, dam water | 104 | 40 | G1 | ○ | ○ | ○ | - |
| **Water, stormwater** | | | | | | | |
| ▪ With strainer | 104 | 40 | G1 | ○ | ○ | ○ | - |
| ▪ Without strainer | 104 | 40 | G1 | ✓ | ✓ | ✓ | - |
| **Water, contaminated water** | | | | | | | |
| ▪ Slightly contaminated water | 104 | 40 | G1 | ○ | ○ | ○ | - |
| ▪ Combined sewage, with strainer | 104 | 40 | G1 | ○ | ○ | ○ | - |
| ▪ Combined sewage, without strainer | 104 | 40 | G1 | ✓ | ✓ | ✓ | - |
| ▪ Combined sewage containing feces | 104 | 40 | G1 | ✓ | ✓ | ✓ | - |
| ▪ Combined sewage not containing feces | 104 | 40 | G1 | ✓ | ✓ | ✓ | - |
| **Water, clean water** | 104 | 40 | G1 | ○ | ○ | ○ | - |

14 Fluids to be pumped which are not listed in this table usually require higher-grade materials. Contact the manufacturer.
15 Using a casing wear ring with a groove for flushing will reduce the efficiency by 2 % to 3 %.
16 See table (⇨ Table 7)
17 For t > 77 °F [25 °C] contact KSB (stainless steel variant).
18 Efficiency reduced by 2 % to 3 %; anode to be checked every 6 to 12 months

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**Table 6:** Symbols key

| Symbol | Description |
|---|---|
| ✓ | Required |
| ○ | Optional |
| - | Not required |

**Table 7:** Space between screen bars

| Size | Required space between screen bars | |
|---|---|---|
| | [inch] | [mm] |
| 400-290 | 1 3/16 | 30 |
| 500-325 | 1 3/16 | 30 |
| 600-351 | 1 3/16 | 30 |
| 700-471 | 1 9/16 | 40 |
| 800-471 | 1 9/16 | 40 |

## Overview of product features

**Table 8:** Material variants (G1, G2, G3)

| Feature | Motor version | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | UVG/XVG | | | UWG/XWG | | | UTG/XTG | |
| **Motor size** | | | | | | | | |
| 4-pole | 15 4 ... 21 4 | 22 4 ... 40 4 | - | - | - | - | - | - |
| 6-pole | 7 6 ... 11 6 | 18 6 | 22 6 ... 40 6 | 18 6 (90 Hz)<br>7 6 ... 11 6 (60 Hz) | 30 6 ... 40 6 (90 Hz)<br>16 6 ... 23 6 (60 Hz) | - | 60 6 ... 120 6 | 155 6 |
| 8-pole | - | - | - | - | - | 26 8 ... 38 8 (80 Hz) | 30 8 ... 95 8 | 120 8 ... 140 8 |
| **Explosion protection** | | | | | | | | |
| Version U... | Non-explosion-proof | | | | | | | |
| Version X... | or Explosion-proof Class I, Division 1, Groups C & D, T3 | | | | | | | |
| **Motor** | | | | | | | | |
| Starting method | DOL or star-delta (690 V only DOL) | DOL | | Frequency inverter, PumpDrive R | | | DOL or star-delta (690 V only DOL) | |
| Voltage | 460 V[19)] | | | | | | | |
| Cooling | Cooled by surrounding fluid | | | | | | | |
| Immersion depth | 100 ft [30 m] max. | | | | | | | |
| **Power cables** | | | | | | | | |
| Type | See (⇨ Table 9) | | | | | | | |
| Length | 33 ft [10 m][20)] | | | | | | | |
| Cable entry | Absolutely water-tight | | | | | | | |
| **Sealing elements** | | | | | | | | |
| Elastomers | Nitrile butadiene rubber NBR[21)] | | | | | | | |
| Shaft seal | Bellows-type mechanical seal[22)] | | | | | | | |
| **Monitoring equipment** | | | | | | | | |
| **Sensor package** | Basic/Basic+/Premium | | | | | | | |
| **Coating** | Environmentally friendly KSB standard coating, color RAL 5002[23)] | | | | | | | |
| **Installation** | BU, BUS, BG, CU, CUS, CD, DU, DUS, DG | | | | | | | |
| **Maximum fluid temperature** | | | | | | | | |
| Material variant G1 | 104 °F [40 °C] | | | | | | | |
| Material variant G2 | 104 °F [40 °C] | | | | | | | |
| Material variant G3 | 77 °F [25 °C] | | | | | | | |
| **Tests/inspections** | | | | | | | | |
| Hydraulic system | KSB standard (ZN 56525)[24)] | | | | | | | |
| General | KSB standard (ZN 56525)[24)] | | | | | | | |

**19** Optional: 380 V, 575 V
**20** Optional: up to 165 ft [50 m]
**21** Optional: Viton = fluorocarbon rubber FPM
**22** Optional: Mechanical seal with covered spring
**23** Optional: 250 µm
**24** Optional: Hydraulic Institute, Level B

**Table 9:** Power cable overview

| Feature | Power cable and sensor cable | | Sensor cable |
|---|---|---|---|
| | S1BN8-F | S07RC4N8-F | S05BN8-F |
| Design | Standard | Optional | Optional |
| Rated voltage | 1000 V | 750 V | - |
| EMC screening | - | ✓ | ✓ |
| Insulation material | EPR[25)] | EPR[25)] | Elastomer mixture |
| Maximum continuous temperature of insulation | 194 °F [90 °C] | 194 °F [90 °C] | 194 °F [90 °C] |
| For permanent immersion in waste water to DIN VDE 0282-16/HD22.16 | ✓ | ✓ | ✓ |

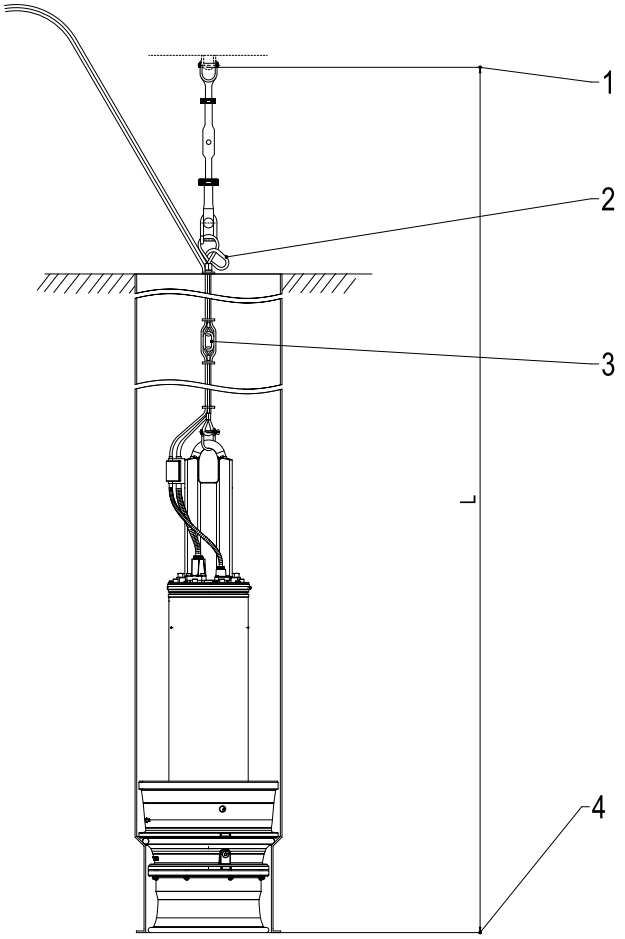
## Related documents

- General Arrangement Drawings 1580.399
- Motor Data Booklet 1580.505
- Planning Information 1581.025

## Purchase order specifications

- Designation of the pump
- 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 tube drawings and discharge tubes, a drawing of the building indicating all required elevations and the type of installation is required.
  - 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 in or removing it from the discharge tube.




| | |
|---|---|
| 1 | Suspension arrangement attached to cross-beam (BU/BUS/BG) or cover (CU/CUS/CG/DU/DUS/DG) |
| 2 | Lifting ring (standard, included in the scope of supply) |
| 3 | Optional (intermediate) lifting ring(s) |
| 4 | Lower edge of discharge tube = lower edge of pump |

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(s).

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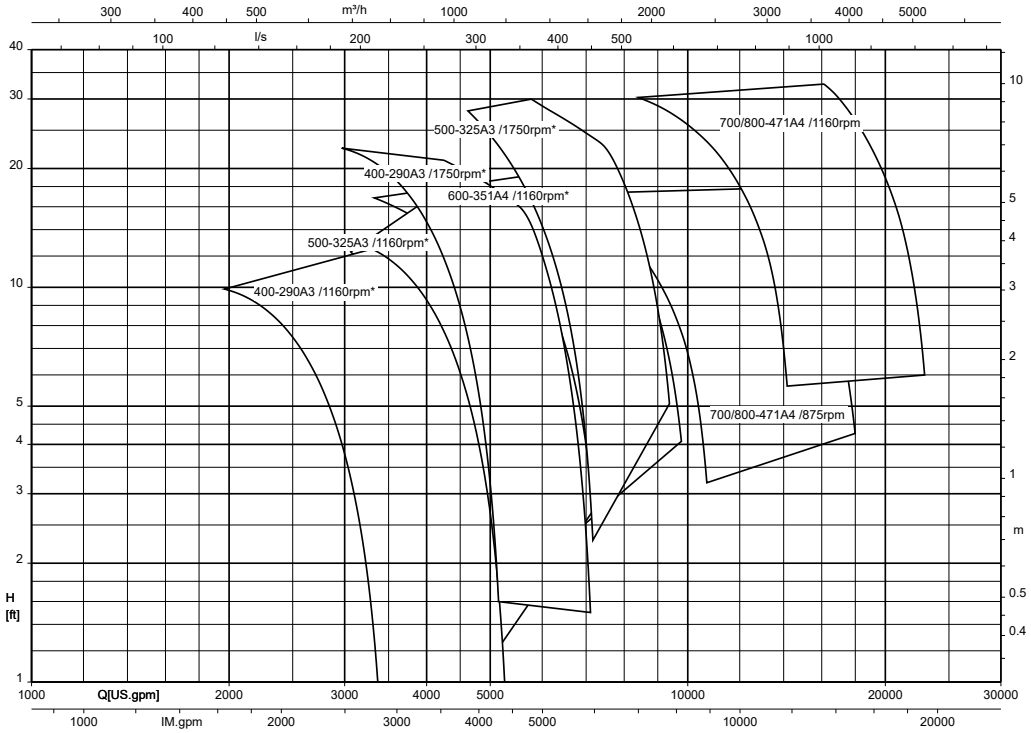
25 EPR = ethylene propylene rubber

## Selection chart




| | |
|---|---|
| * | Hydraulic systems with UV/XV three-phase asynchronous motor n = 1750 rpm, 1160 rpm<br>Hydraulic systems with UW/XW three-phase synchronous motor (efficiency class IE4) n = 1800 rpm, 1200 rpm |

## Characteristic curves

### n = 1750 rpm

### AmaCan PA3 400-290, n = 1750 rpm

Characteristic curves to ISO 9906 / 2 / 2B. n = rated speed

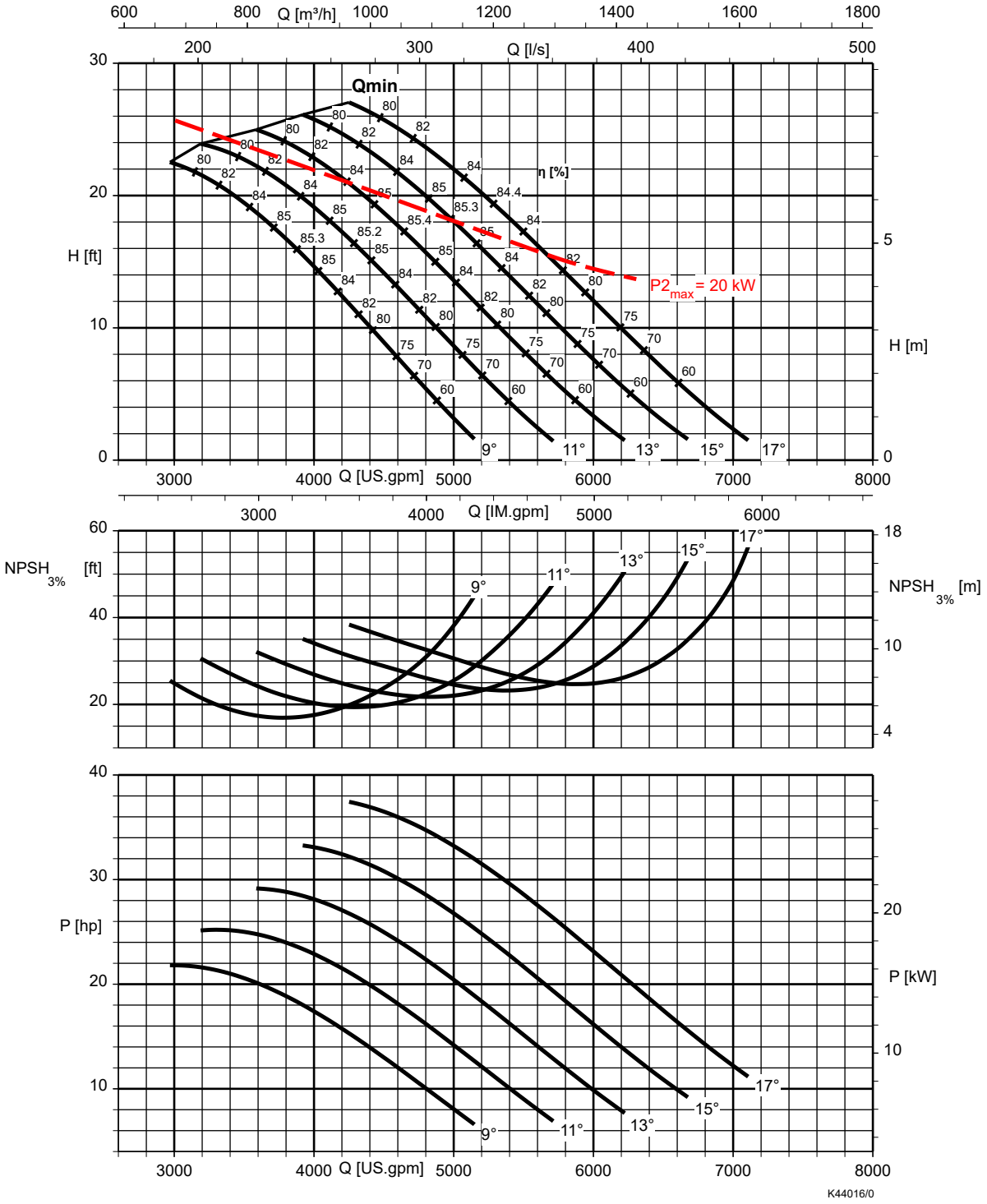





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**Table 10:** Free passage

| Angle | Free passage | | Angle | Free passage | |
|---|---|---|---|---|---|
| | [inch] | [mm] | | [inch] | [mm] |
| 9 | 2 5/9 | 65 | 15 | 2 5/9 | 65 |
| 11 | 2 5/9 | 65 | 17 | 2 5/9 | 65 |
| 13 | 2 5/9 | 65 | | | |

**Table 11:** Rated power $P_2$ and mass moment of inertia J[26)]

| Size | Motor | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | -[27)] | | [kgm²] |
| | | [hp] | [kW] | |
| PA3 400-290 | 154UV/XV | 20 | 15 | 0.11 |
| PA3 400-290 | 184UV/XV | 25 | 18.5 | 0.11 |
| PA3 400-290 | 214UV/XV | 30 | 22 | 0.12 |

**Table 12:** Rated power $P_2$ and mass moment of inertia J[26)]

| Size | Motor[28)] | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | IE4 | | [kgm²] |
| | | [hp] | [kW] | |
| PA3 400-290 | 186UW/XW | 25 | 18.5 | 0.15 |



26 These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.
27 - = No efficiency classification
28 Motor version UW/XW is a synchronous motor with a synchronous speed of 1800 rpm.

## AmaCan PA3 500-325, n = 1750 rpm

Characteristic curves to ISO 9906 / 2 / 2B. n = rated speed

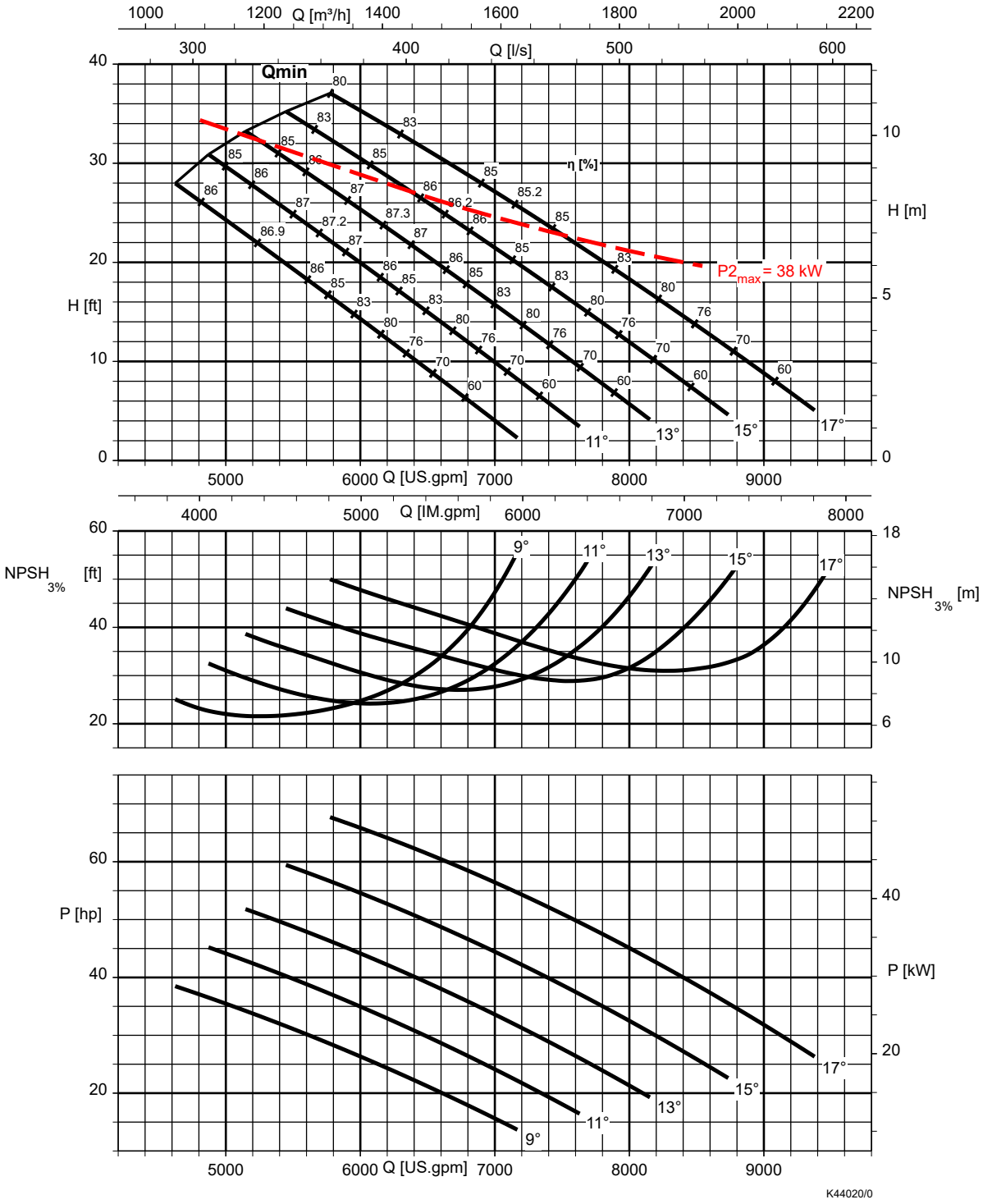




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**Table 13:** Free passage

| Angle | Free passage | | Angle | Free passage | |
|---|---|---|---|---|---|
| | [inch] | [mm] | | [inch] | [mm] |
| 9 | 2 5/9 | 65 | 15 | 2 5/9 | 65 |
| 11 | 2 5/9 | 65 | 17 | 2 5/9 | 65 |
| 13 | 2 5/9 | 65 | | | |

**Table 14:** Rated power $P_2$ and mass moment of inertia J[29)]

| Size | Motor | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | -[30)] | | [kgm²] |
| | | [hp] | [kW] | |
| PA3 500-325 | 224UV/XV | 30 | 22 | 0.20 |
| PA3 500-325 | 304UV/XV | 37 | 28 | 0.21 |
| PA3 500-325 | 344UV/XV | 45 | 34 | 0.24 |

**Table 15:** Rated power $P_2$ and mass moment of inertia J[29)]

| Size | Motor[31)] | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | IE4 | | [kgm²] |
| | | [hp] | [kW] | |
| PA3 500-325 | 306UW/XW | 40 | 32 | 0.29 |
| PA3 500-325 | 406UW/XW | 55 | 42 | 0.33 |



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

30 - = No efficiency classification

31 Motor version UW/XW is a synchronous motor with a synchronous speed of 1800 rpm.

**n = 1160 rpm**

## AmaCan PA3 400-290, n = 1160 rpm

Characteristic curves to ISO 9906 / 2 / 2B. n = rated speed

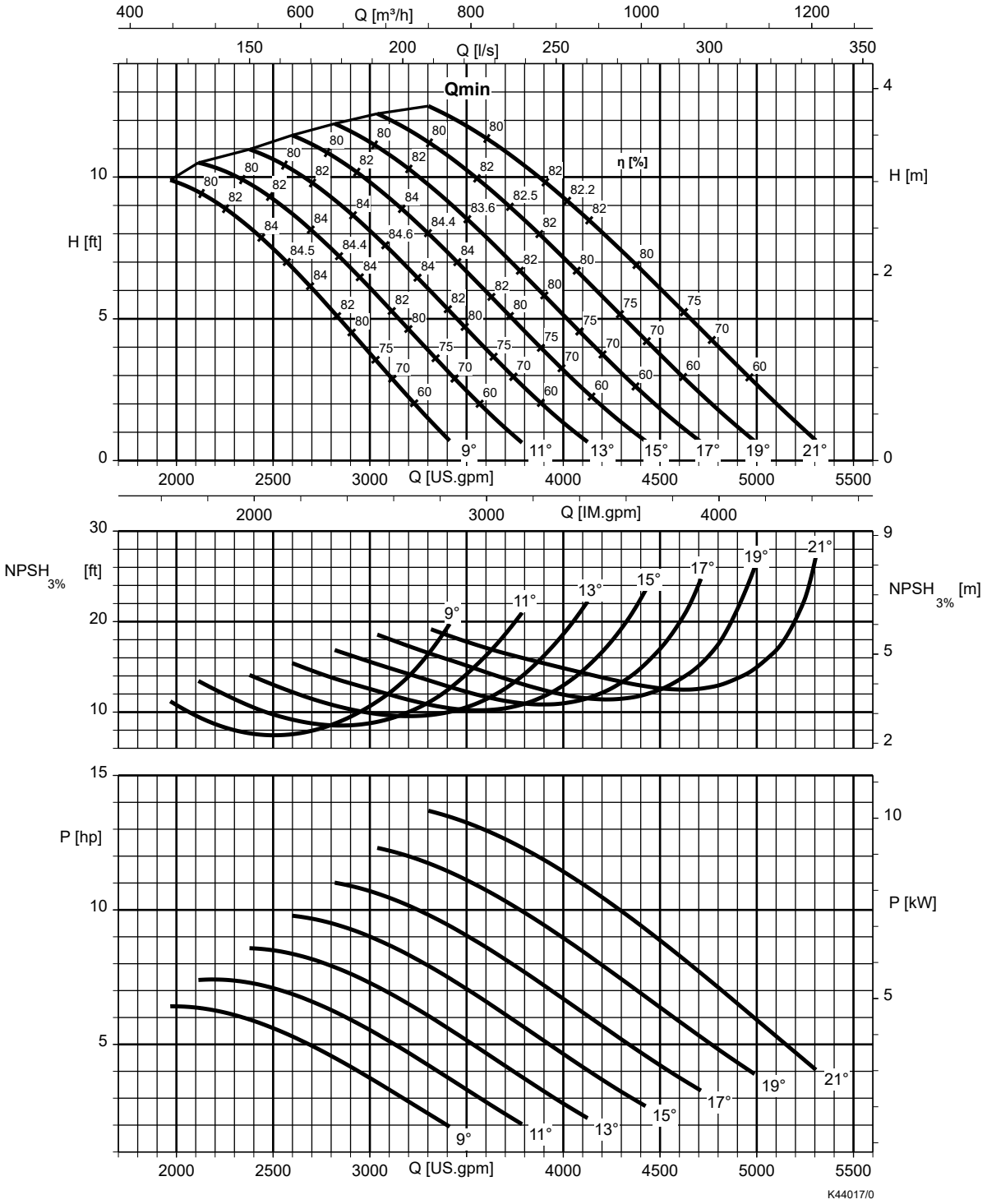


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**Table 16:** Free passage

| Angle | Free passage | | Angle | Free passage | |
|---|---|---|---|---|---|
| | [inch] | [mm] | | [inch] | [mm] |
| 9 | 2 5/9 | 65 | 17 | 2 5/9 | 65 |
| 11 | 2 5/9 | 65 | 19 | 2 5/9 | 65 |
| 13 | 2 5/9 | 65 | 21 | 2 5/9 | 65 |
| 15 | 2 5/9 | 65 | | | |

**Table 17:** Rated power $P_2$ and mass moment of inertia J[32)]

| Size | Motor | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | -[33)] | | [kgm²] |
| | | [hp] | [kW] | |
| PA3 400-290 | 76UV/XV | 10 | 7.5 | 0.11 |
| PA3 400-290 | 116UV/XV | 15 | 11 | 0.12 |

**Table 18:** Rated power $P_2$ and mass moment of inertia J[32)]

| Size | Motor[34)] | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | IE4 | | [kgm²] |
| | | [hp] | [kW] | |
| PA3 400-290 | 76UW/XW | 10 | 7.5 | 0.12 |
| PA3 400-290 | 116UW/XW | 15 | 11 | 0.12 |

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

**33** - = No efficiency classification

**34** Motor version UW/XW is a synchronous motor with a synchronous speed of 1200 rpm.

## AmaCan PA3 500-325, n = 1160 rpm

Characteristic curves to ISO 9906 / 2 / 2B. n = rated speed

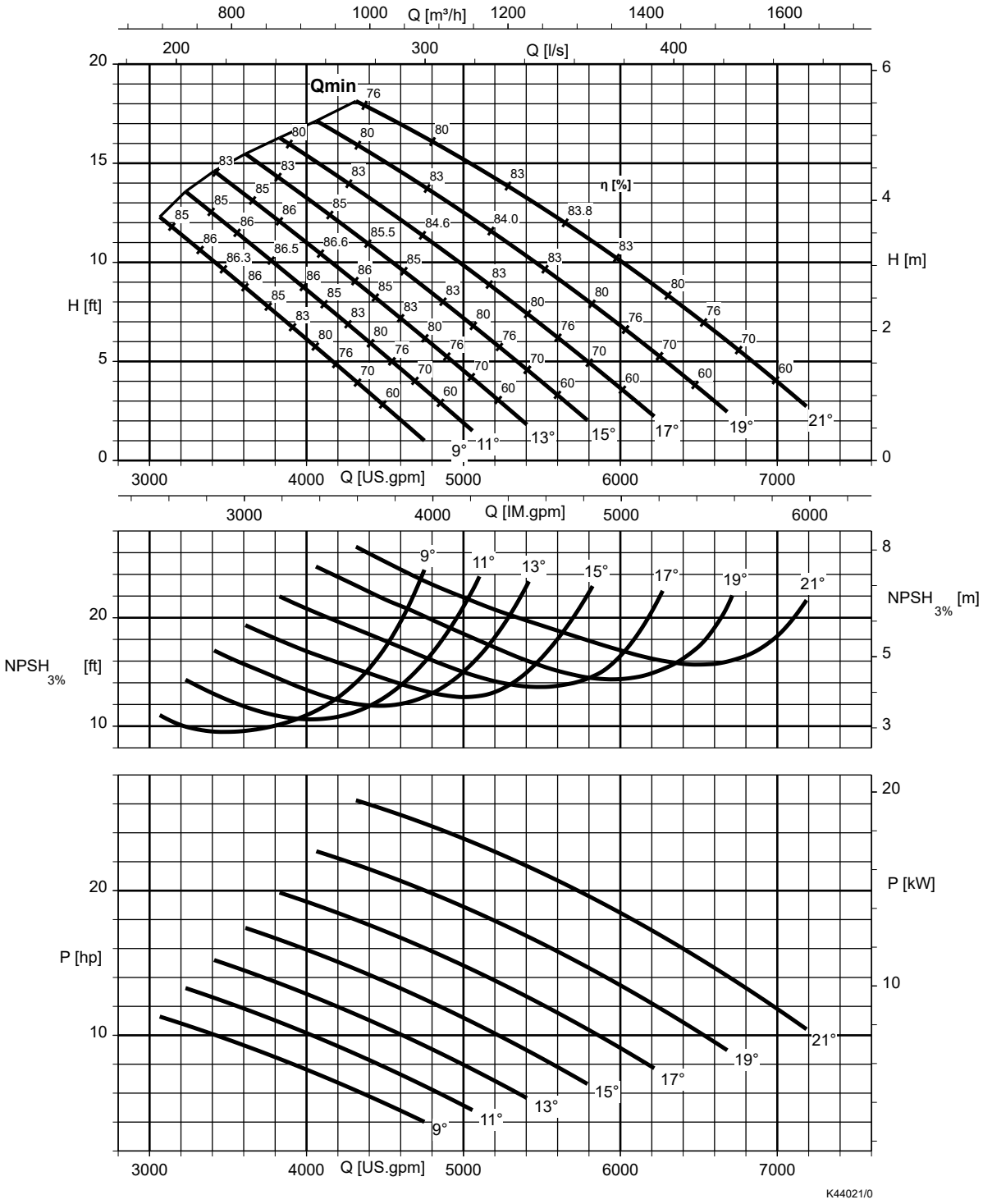


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**Table 19:** Free passage

| Angle | Free passage | | Angle | Free passage | |
|---|---|---|---|---|---|
| | [inch] | [mm] | | [inch] | [mm] |
| 9 | 2 5/9 | 65 | 17 | 2 5/9 | 65 |
| 11 | 2 5/9 | 65 | 19 | 2 5/9 | 65 |
| 13 | 2 5/9 | 65 | 21 | 2 5/9 | 65 |
| 15 | 2 5/9 | 65 | | | |

**Table 20:** Rated power $P_2$ and mass moment of inertia J[35]

| Size | Motor | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | -[36] | | [kgm²] |
| | | [hp] | [kW] | |
| PA3 500-325 | 186UV/XV | 25 | 18 | 0.23 |

**Table 21:** Rated power $P_2$ and mass moment of inertia J[35]

| Size | Motor[37] | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | IE4 | | [kgm²] |
| | | [hp] | [kW] | |
| PA3 500-325 | 166UW/XW | 20 | 16 | 0.25 |
| PA3 500-325 | 236UW/XW | 30 | 22 | 0.29 |



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

**36** - = No efficiency classification

**37** Motor version UW/XW is a synchronous motor with a synchronous speed of 1200 rpm.

## AmaCan PA4 600-351, n = 1160 rpm

Characteristic curves to ISO 9906 / 2 / 2B. n = rated speed

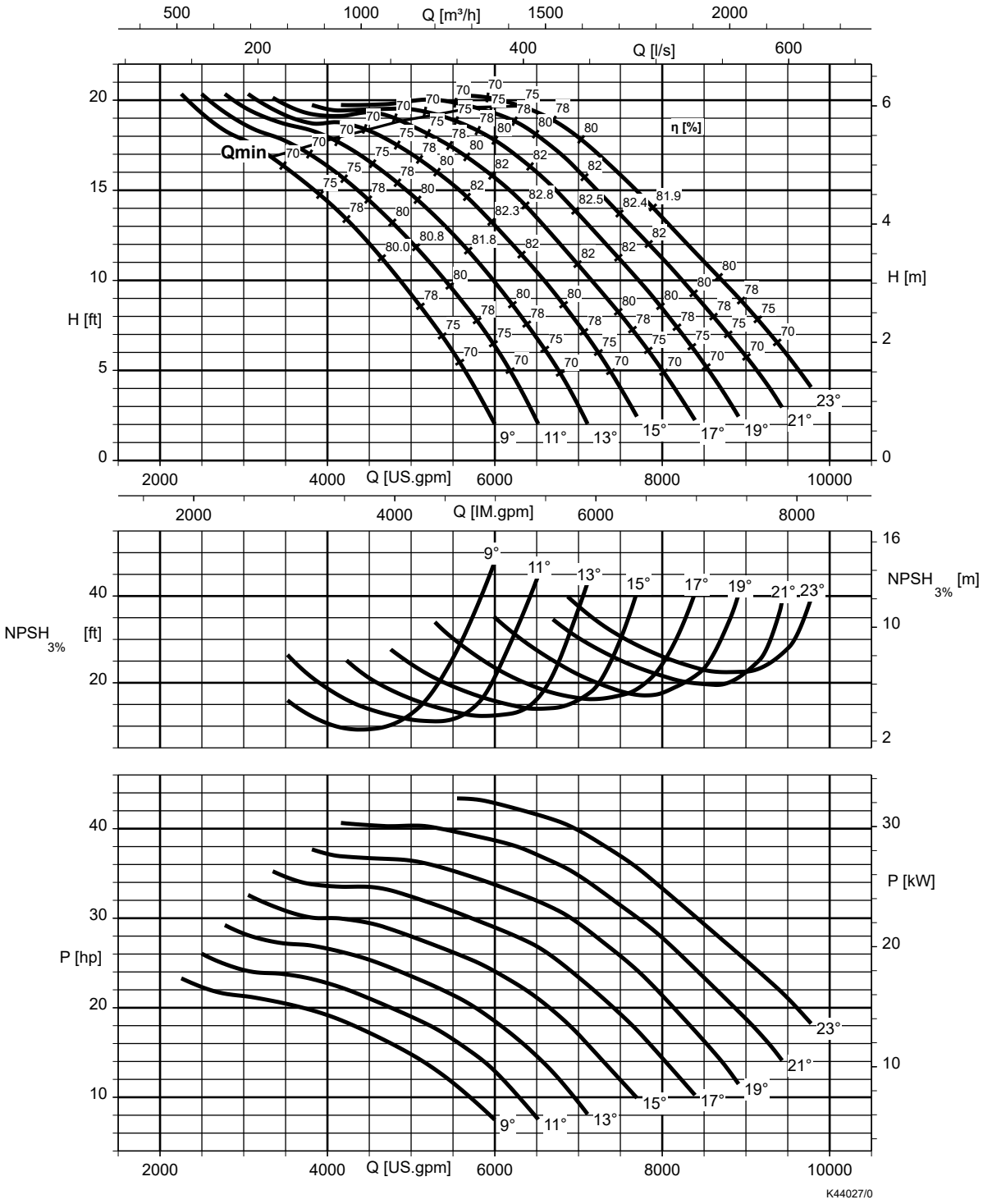

**Table 22:** Free passage

| Angle | Free passage | | Angle | Free passage | |
|---|---|---|---|---|---|
| | [inch] | [mm] | | [inch] | [mm] |
| 9 | 2 | 50 | 17 | 2 3/4 | 70 |
| 11 | 2 1/6 | 55 | 19 | 3 | 75 |
| 13 | 2 1/3 | 60 | 21 | 3 1/7 | 80 |
| 15 | 2 5/9 | 65 | 23 | 3 1/3 | 85 |

**Table 23:** Rated power $P_2$ and mass moment of inertia J[38)]

| Size | Motor | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | -[39)] | | [kgm²] |
| | | [hp] | [kW] | |
| PA4 600-351 | 256UV/XV | 33 | 24 | 0.42 |
| PA4 600-351 | 306UV/XV | 40 | 30 | 0.42 |
| PA4 600-351 | 356UV/XV | 47 | 35 | 0.45 |

**Table 24:** Rated power $P_2$ and mass moment of inertia J[38)]

| Size | Motor[40)] | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | IE4 | | [kgm²] |
| | | [hp] | [kW] | |
| PA4 600-351 | 268UW/XW | 35 | 26 | 0.47 |
| PA4 600-351 | 388UW/XW | 50 | 37 | 0.52 |



38 These values are valid for a density = 1 kg/dm³ and a kinematic viscosity of up to 20 mm²/s.
39 - = No efficiency classification
40 Motor version UW/XW is a synchronous motor with a synchronous speed of 1200 rpm.

## AmaCan PA4 700/800-471, n = 1160 rpm

Characteristic curves to ISO 9906 / 2 / 2B. n = rated speed

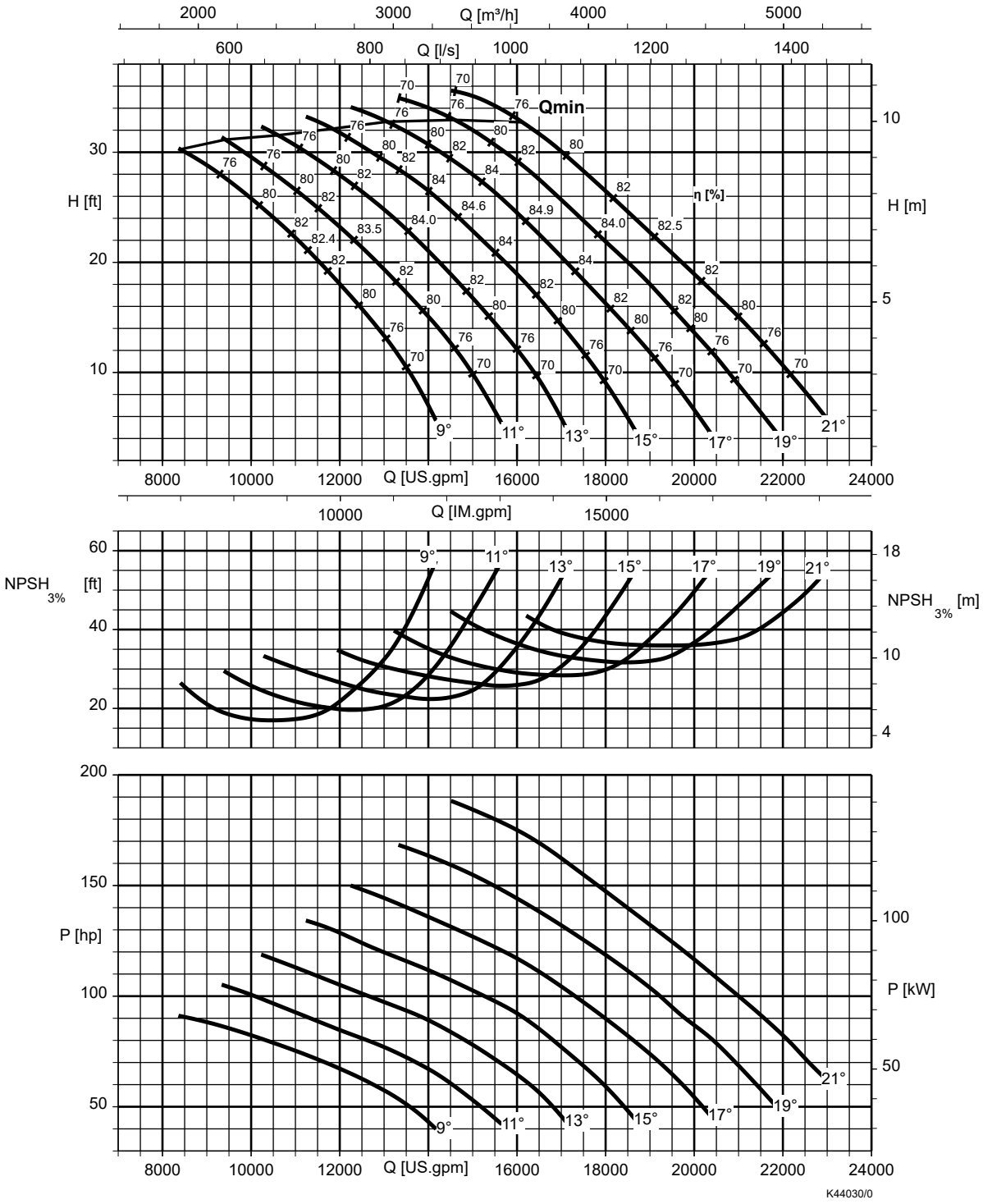

**Table 25:** Free passage

| Angle | Free passage | | Angle | Free passage | |
|---|---|---|---|---|---|
| | [inch] | [mm] | | [inch] | [mm] |
| 9 | 2 1/3 | 60 | 17 | 3 2/3 | 93 |
| 11 | 2 2/3 | 68 | 19 | 4 | 100 |
| 13 | 3 | 75 | 21 | 3/7 | 11 |
| 15 | 3 1/3 | 85 | 23 | 5 5/7 | 120 |

**Table 26:** Rated power $P_2$ and mass moment of inertia J[41)]

| Size | Motor | Rated power $P_2$ | | Mass moment of inertia J |
|---|---|---|---|---|
| | | -[42)] | | [kgm²] |
| | | [hp] | [kW] | |
| PA4 700-471 | 606UT/XT | 80 | 60 | 1.52 |
| PA4 700-471 | 806UT/XT | 100 | 80 | 1.70 |
| PA4 700-471 | 1006UT/XT | 135 | 100 | 1.83 |
| PA4 700-471 | 1206UT/XT | 155 | 115 | 1.97 |
| PA4 800-471 | 1556UT/XT | 200 | 155 | 3.03 |

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

42 - = No efficiency classification

**n = 875 rpm**

### AmaCan PA4 700/800-471, n = 875 rpm

Characteristic curves to ISO 9906 / 2 / 2B. n = rated speed

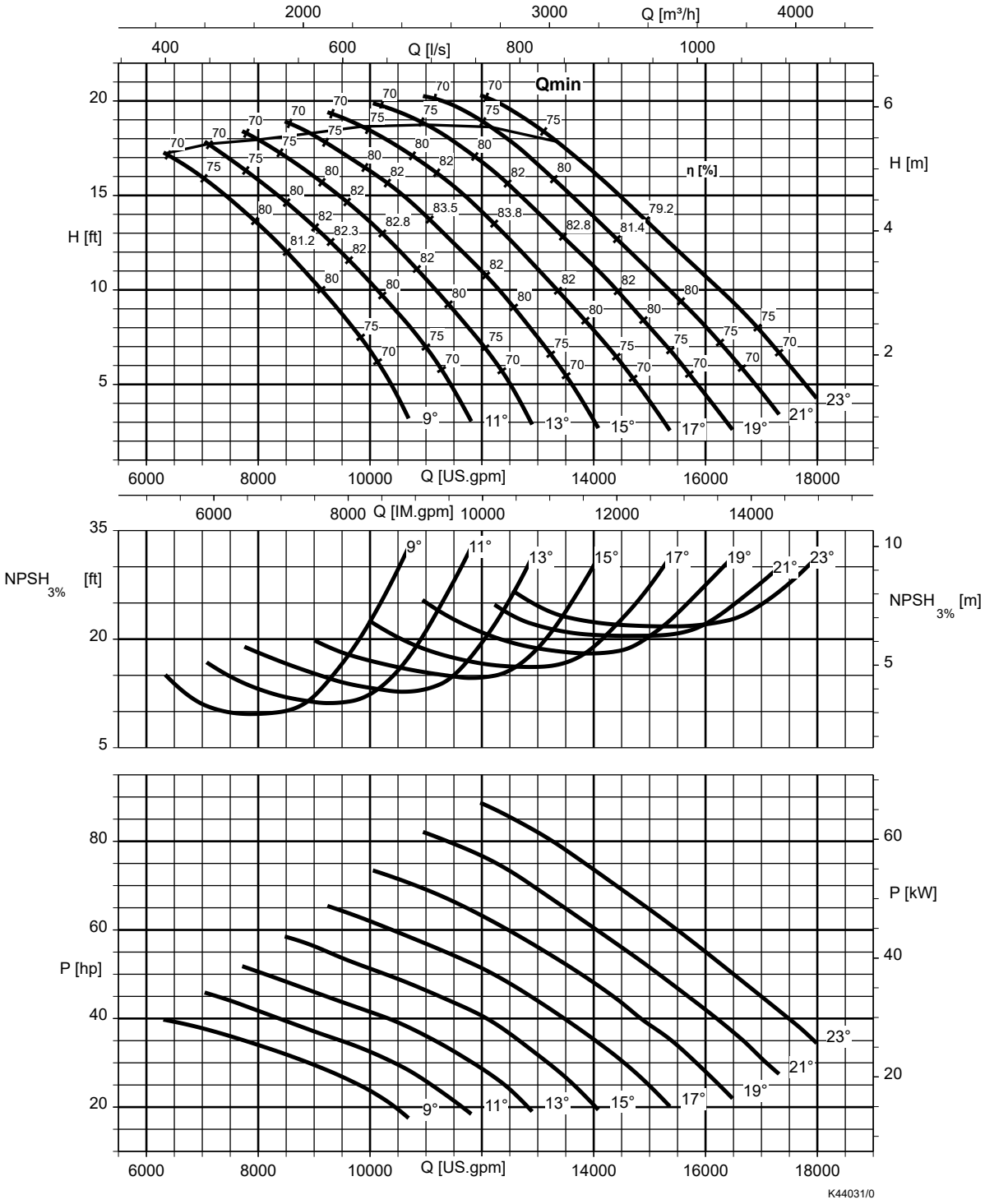

**Table 27:** Free passage

| Angle | Free passage | | Angle | Free passage | |
|---|---|---|---|---|---|
| | [inch] | [mm] | | [inch] | [mm] |
| 9 | 2 1/3 | 60 | 17 | 3 2/3 | 93 |
| 11 | 2 2/3 | 68 | 19 | 4 | 100 |
| 13 | 3 | 75 | 21 | 3/7 | 11 |
| 15 | 3 1/3 | 85 | 23 | 4 5/7 | 120 |

**Table 28:** Rated power $P_2$ and mass moment of inertia J[43)]

| Size | Motor | Rated power $P_2$ | | | | Mass moment of inertia J |
|---|---|---|---|---|---|---|
| | | -[44)] | | IE3 | | [kgm²] |
| | | [hp] | [kW] | [hp] | [kW] | |
| PA4 700-471 | 308UT/XT | 40 | 30 | - | - | 1.52 |
| PA4 700-471 | 408UT/XT | 55 | 40 | - | - | 1.52 |
| PA4 700-471 | 508UT/XT | - | - | 30 | 20 | 1.60 |
| PA4 700-471 | 558UT/XT | 75 | 55 | - | - | 1.70 |
| PA4 700-471 | 708UT/XT | 95 | 70 | 40 | 30 | 1.70 |
| PA4 700-471 | 958UT/XT | - | - | 60 | 45 | 1.97 |
| PA4 800-471 | 1208UT/XT | - | - | 80 | 60 | 3.03 |
| PA4 800-471 | 1408UT/XT | - | - | 100 | 75 | 3.31 |



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

44 - = No efficiency classification

## Pump set dimensions

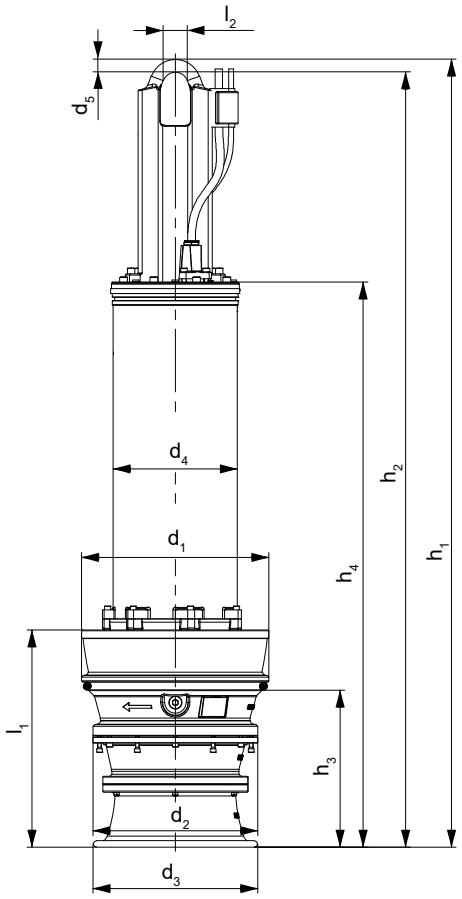


**Fig. 1:** Pump set dimensions

**Table 29:** Pump set dimensions [inch]

| Size | Motor size | Number of poles | Motor version | $d_1$ | $d_2$ | $d_3$ | $d_4$ | $d_5$ | $h_1$ | $h_2$ | $h_3$ | $h_4$ | $l_1$ | $l_2$ | [lbs][45] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | [inch] | | | | | | | | | | | |
| 400-290 | 15 | 4 | UV/XV | 15 1/5 | 13 2/9 | 13 2/9 | 8 8/9 | 1/3 | 62 5/9 | 62 1/4 | 9 1/7 | 44 7/8 | 15 2/7 | 2 3/4 | 525 |
| 400-290 | 18 | 4 | UV/XV | 15 1/5 | 13 2/9 | 13 2/9 | 8 8/9 | 1/3 | 62 5/9 | 62 1/4 | 9 1/7 | 44 7/8 | 15 2/7 | 2 3/4 | 545 |
| 400-290 | 21 | 4 | UV/XV | 15 1/5 | 13 2/9 | 13 2/9 | 8 8/9 | 1/3 | 62 5/9 | 62 1/4 | 9 1/7 | 44 7/8 | 15 2/7 | 2 3/4 | 555 |
| 400-290 | 7 | 6 | UV/XV/ UW/XW | 15 1/5 | 13 2/9 | 13 2/9 | 8 8/9 | 1/3 | 62 5/9 | 62 1/4 | 9 1/7 | 44 7/8 | 15 2/7 | 2 3/4 | 485 |
| 400-290 | 11 | 6 | UV/XV/ UW/XW | 15 1/5 | 13 2/9 | 13 2/9 | 8 8/9 | 1/3 | 62 5/9 | 62 1/4 | 9 1/7 | 44 7/8 | 15 2/7 | 2 3/4 | 520 |
| 400-290 | 18 | 6 | UW/XW | 15 1/5 | 13 2/9 | 13 2/9 | 8 8/9 | 1/3 | 62 5/9 | 62 1/4 | 9 1/7 | 44 7/8 | 15 2/7 | 2 3/4 | 555 |
| 500-325 | 22 | 4 | UV/XV | 18 8/9 | 14 2/3 | 16 1/2 | 10 5/8 | 1 1/6 | 68 1/5 | 61 2/7 | 17 | 48 1/2 | 24 2/5 | 2 3/4 | 800 |
| 500-325 | 30 | 4 | UV/XV | 18 8/9 | 14 2/3 | 16 1/2 | 10 5/8 | 1 1/6 | 68 1/5 | 61 2/7 | 17 | 48 1/2 | 24 2/5 | 2 3/4 | 850 |
| 500-325 | 34 | 4 | UV/XV | 18 8/9 | 14 2/3 | 16 1/2 | 10 5/8 | 1 1/6 | 68 1/5 | 61 2/7 | 17 | 48 1/2 | 24 2/5 | 2 3/4 | 900 |
| 500-325 | 40 | 4 | UV/XV | 18 8/9 | 14 2/3 | 16 1/2 | 10 5/8 | 1 1/6 | 68 1/5 | 61 2/7 | 17 | 48 1/2 | 24 2/5 | 2 3/4 | 955 |
| 500-325 | 16 | 6 | UW/XW | 18 8/9 | 14 2/3 | 16 1/2 | 10 5/8 | 1 1/6 | 68 1/5 | 61 2/7 | 17 | 48 1/2 | 24 2/5 | 2 3/4 | 800 |
| 500-325 | 18 | 6 | UV/XV | 18 8/9 | 14 2/3 | 16 1/2 | 10 5/8 | 1 1/6 | 68 1/5 | 61 2/7 | 17 | 48 1/2 | 24 2/5 | 2 3/4 | 795 |
| 500-325 | 23 | 6 | UW/XW | 18 8/9 | 14 2/3 | 16 1/2 | 10 5/8 | 1 1/6 | 68 1/5 | 61 2/7 | 17 | 48 1/2 | 24 2/5 | 2 3/4 | 850 |
| 500-325 | 30 | 6 | UW/XW | 18 8/9 | 14 2/3 | 16 1/2 | 10 5/8 | 1 1/6 | 68 1/5 | 61 2/7 | 17 | 48 1/2 | 24 2/5 | 2 3/4 | 850 |
| 500-325 | 40 | 6 | UW/XW | 18 8/9 | 14 2/3 | 16 1/2 | 10 5/8 | 1 1/6 | 68 1/5 | 61 2/7 | 17 | 48 1/2 | 24 2/5 | 2 3/4 | 955 |
| 600-351 | 25 | 6 | UV/XV | 22 4/9 | 19 | 19 | 12 | 1 | 70 3/4 | 69 5/6 | 22 | 53 8/9 | 32 2/7 | 2 3/4 | 1220 |
| 600-351 | 30 | 6 | UV/XV | 22 4/9 | 19 | 19 | 12 | 1 | 70 3/4 | 69 5/6 | 22 | 53 8/9 | 32 2/7 | 2 3/4 | 1220 |
| 600-351 | 35 | 6 | UV/XV | 22 4/9 | 19 | 19 | 12 | 1 | 70 3/4 | 69 5/6 | 22 | 53 8/9 | 32 2/7 | 2 3/4 | 1260 |
| 600-351 | 40 | 6 | UV/XV | 22 4/9 | 19 | 19 | 12 | 1 | 70 3/4 | 69 5/6 | 22 | 53 8/9 | 32 2/7 | 2 3/4 | 1320 |

45 Pump set in material variant G3, with 33 ft [10 m] power cable and 16.4 ft [5 m] support rope. The indicated weights are reference values only. Refer to the data sheet for the exact weight.

| Size | Motor size | Number of poles | Motor version | $d_1$ | $d_2$ | $d_3$ | $d_4$ | $d_5$ | $h_1$ | $h_2$ | $h_3$ | $h_4$ | $l_1$ | $l_2$ | [lbs][45] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | [inch] | | | | | | | | | | | |
| 600-351 | 26 | 8 | UW/XW | 22 4/9 | 19 | 19 | 12 | 1 | 70 3/4 | 69 5/6 | 22 | 53 8/9 | 32 2/7 | 2 3/4 | 1210 |
| 600-351 | 38 | 8 | UW/XW | 22 4/9 | 19 | 19 | 12 | 1 | 70 3/4 | 69 5/6 | 22 | 53 8/9 | 32 2/7 | 2 3/4 | 1270 |
| 700-471 | 60 | 6 | UT/XT | 26 4/7 | 23 | 23 | 15 1/6 | 1 4/7 | 86 2/9 | 84 2/3 | 16 8/9 | 59 | 29 | 3 1/7 | 2120 |
| 700-471 | 80 | 6 | UT/XT | 26 4/7 | 23 | 23 | 15 1/6 | 1 4/7 | 94 | 92 1/2 | 16 8/9 | 66 8/9 | 29 | 3 1/7 | 2405 |
| 700-471 | 100 | 6 | UT/XT | 26 4/7 | 23 | 23 | 15 1/6 | 1 4/7 | 94 | 92 1/2 | 16 8/9 | 66 8/9 | 29 | 3 1/7 | 2505 |
| 700-471 | 120 | 6 | UT/XT | 26 4/7 | 23 | 23 | 15 1/6 | 1 4/7 | 94 | 92 1/2 | 16 8/9 | 66 8/9 | 29 | 3 1/7 | 2550 |
| 700-471 | 30 | 8 | UT/XT | 26 4/7 | 23 | 23 | 15 1/6 | 1 4/7 | 86 2/9 | 84 2/3 | 16 8/9 | 59 | 29 | 3 1/7 | 2120 |
| 700-471 | 40 | 8 | UT/XT | 26 4/7 | 23 | 23 | 15 1/6 | 1 4/7 | 86 2/9 | 84 2/3 | 16 8/9 | 59 | 29 | 3 1/7 | 2145 |
| 700-471 | 50 | 8 | UT/XT | 26 4/7 | 23 | 23 | 15 1/6 | 1 4/7 | 86 2/9 | 84 2/3 | 16 8/9 | 59 | 29 | 3 1/7 | 2175 |
| 700-471 | 55 | 8 | UT/XT | 26 4/7 | 23 | 23 | 15 1/6 | 1 4/7 | 94 | 92 1/2 | 16 8/9 | 66 8/9 | 29 | 3 1/7 | 2405 |
| 700-471 | 70 | 8 | UT/XT | 26 4/7 | 23 | 23 | 15 1/6 | 1 4/7 | 94 | 92 1/2 | 16 8/9 | 66 8/9 | 29 | 3 1/7 | 2405 |
| 700-471 | 95 | 8 | UT/XT | 26 4/7 | 23 | 23 | 15 1/6 | 1 4/7 | 94 | 92 1/2 | 16 8/9 | 66 8/9 | 29 | 3 1/7 | 2545 |
| 800-471 | 155 | 6 | UT/XT | 26 4/7 | 23 | 23 | 18 5/7 | 1 4/7 | 106 3/4 | 105 1/6 | 16 8/9 | 79 1/2 | 29 | 3 1/7 | 3470 |
| 800-471 | 120 | 8 | UT/XT | 26 4/7 | 23 | 23 | 18 5/7 | 1 4/7 | 106 3/4 | 105 1/6 | 16 8/9 | 79 1/2 | 29 | 3 1/7 | 3245 |
| 800-471 | 140 | 8 | UT/XT | 26 4/7 | 23 | 23 | 18 5/7 | 1 4/7 | 106 3/4 | 105 1/6 | 16 8/9 | 79 1/2 | 29 | 3 1/7 | 3425 |

**Table 30:** Pump set dimensions

| Size | Motor size | Number of poles | Motor version | $d_1$ | $d_2$ | $d_3$ | $d_4$ | $d_5$ | $h_1$ | $h_2$ | $h_3$ | $h_4$ | $l_1$ | $l_2$ | [kg][46] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | [mm] | | | | | | | | | | | |
| 400-290 | 15 | 4 | UV/XV | 386 | 336 | 336 | 226 | 8 | 1589 | 1581 | 232 | 1140 | 388 | 70 | 236 |
| 400-290 | 18 | 4 | UV/XV | 386 | 336 | 336 | 226 | 8 | 1589 | 1581 | 232 | 1140 | 388 | 70 | 246 |
| 400-290 | 21 | 4 | UV/XV | 386 | 336 | 336 | 226 | 8 | 1589 | 1581 | 232 | 1140 | 388 | 70 | 250 |
| 400-290 | 7 | 6 | UV/XV/ UW/XW | 386 | 336 | 336 | 226 | 8 | 1589 | 1581 | 232 | 1140 | 388 | 70 | 219 |
| 400-290 | 11 | 6 | UV/XV/ UW/XW | 386 | 336 | 336 | 226 | 8 | 1589 | 1581 | 232 | 1140 | 388 | 70 | 236 |
| 400-290 | 18 | 6 | UW/XW | 386 | 336 | 336 | 226 | 8 | 1589 | 1581 | 232 | 1140 | 388 | 70 | 250 |
| 500-325 | 22 | 4 | UV/XV | 480 | 372 | 420 | 270 | 30 | 1732 | 1557 | 433 | 1232 | 620 | 70 | 361 |
| 500-325 | 30 | 4 | UV/XV | 480 | 372 | 420 | 270 | 30 | 1732 | 1557 | 433 | 1232 | 620 | 70 | 385 |
| 500-325 | 34 | 4 | UV/XV | 480 | 372 | 420 | 270 | 30 | 1732 | 1557 | 433 | 1232 | 620 | 70 | 407 |
| 500-325 | 40 | 4 | UV/XV | 480 | 372 | 420 | 270 | 30 | 1732 | 1557 | 433 | 1232 | 620 | 70 | 432 |
| 500-325 | 16 | 6 | UW/XW | 480 | 372 | 420 | 270 | 30 | 1732 | 1557 | 433 | 1232 | 620 | 70 | 362 |
| 500-325 | 18 | 6 | UV/XV | 480 | 372 | 420 | 270 | 30 | 1732 | 1557 | 433 | 1232 | 620 | 70 | 359 |
| 500-325 | 23 | 6 | UW/XW | 480 | 372 | 420 | 270 | 30 | 1732 | 1557 | 433 | 1232 | 620 | 70 | 385 |
| 500-325 | 30 | 6 | UW/XW | 480 | 372 | 420 | 270 | 30 | 1732 | 1557 | 433 | 1232 | 620 | 70 | 385 |
| 500-325 | 40 | 6 | UW/XW | 480 | 372 | 420 | 270 | 30 | 1732 | 1557 | 433 | 1232 | 620 | 70 | 432 |
| 600-351 | 25 | 6 | UV/XV | 570 | 485 | 485 | 303 | 23 | 1797 | 1774 | 559 | 1369 | 820 | 70 | 552 |
| 600-351 | 30 | 6 | UV/XV | 570 | 485 | 485 | 303 | 23 | 1797 | 1774 | 559 | 1369 | 820 | 70 | 552 |
| 600-351 | 35 | 6 | UV/XV | 570 | 485 | 485 | 303 | 23 | 1797 | 1774 | 559 | 1369 | 820 | 70 | 570 |
| 600-351 | 40 | 6 | UV/XV | 570 | 485 | 485 | 303 | 23 | 1797 | 1774 | 559 | 1369 | 820 | 70 | 597 |
| 600-351 | 26 | 8 | UW/XW | 570 | 485 | 485 | 303 | 23 | 1797 | 1774 | 559 | 1369 | 820 | 70 | 548 |
| 600-351 | 38 | 8 | UW/XW | 570 | 485 | 485 | 303 | 23 | 1797 | 1774 | 559 | 1369 | 820 | 70 | 575 |
| 700-471 | 60 | 6 | UT/XT | 675 | 585 | 585 | 385 | 40 | 2190 | 2150 | 429 | 1499 | 735 | 80 | 960 |
| 700-471 | 80 | 6 | UT/XT | 675 | 585 | 585 | 385 | 40 | 2390 | 2350 | 429 | 1699 | 735 | 80 | 1089 |
| 700-471 | 100 | 6 | UT/XT | 675 | 585 | 585 | 385 | 40 | 2390 | 2350 | 429 | 1699 | 735 | 80 | 1136 |
| 700-471 | 120 | 6 | UT/XT | 675 | 585 | 585 | 385 | 40 | 2390 | 2350 | 429 | 1699 | 735 | 80 | 1155 |
| 700-471 | 30 | 8 | UT/XT | 675 | 585 | 585 | 385 | 40 | 2190 | 2150 | 429 | 1499 | 735 | 80 | 960 |
| 700-471 | 40 | 8 | UT/XT | 675 | 585 | 585 | 385 | 40 | 2190 | 2150 | 429 | 1499 | 735 | 80 | 972 |
| 700-471 | 50 | 8 | UT/XT | 675 | 585 | 585 | 385 | 40 | 2190 | 2150 | 429 | 1499 | 735 | 80 | 986 |
| 700-471 | 55 | 8 | UT/XT | 675 | 585 | 585 | 385 | 40 | 2390 | 2350 | 429 | 1699 | 735 | 80 | 1089 |
| 700-471 | 70 | 8 | UT/XT | 675 | 585 | 585 | 385 | 40 | 2390 | 2350 | 429 | 1699 | 735 | 80 | 1090 |
| 700-471 | 95 | 8 | UT/XT | 675 | 585 | 585 | 385 | 40 | 2390 | 2350 | 429 | 1699 | 735 | 80 | 1153 |

**46** Pump set in material variant G3, with 10-meter power cable and 5-meter support rope. The indicated weights are reference values only. Refer to the data sheet for the exact weight.

| Size | Motor size | Number of poles | Motor version | $d_1$ | $d_2$ | $d_3$ | $d_4$ | $d_5$ | $h_1$ | $h_2$ | $h_3$ | $h_4$ | $l_1$ | $l_2$ | [kg][46] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | [mm] | | | | | | | | | | | |
| 800-471 | 155 | 6 | UT/XT | 675 | 585 | 585 | 475 | 40 | 2711 | 2671 | 429 | 2020 | 735 | 80 | 1574 |
| 800-471 | 120 | 8 | UT/XT | 675 | 585 | 585 | 475 | 40 | 2711 | 2671 | 429 | 2020 | 735 | 80 | 1472 |
| 800-471 | 140 | 8 | UT/XT | 675 | 585 | 585 | 475 | 40 | 2711 | 2671 | 429 | 2020 | 735 | 80 | 1552 |

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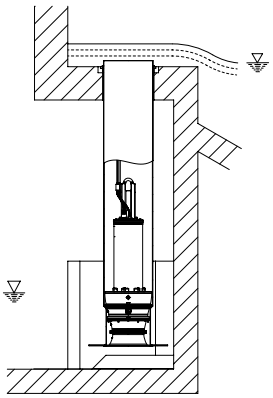
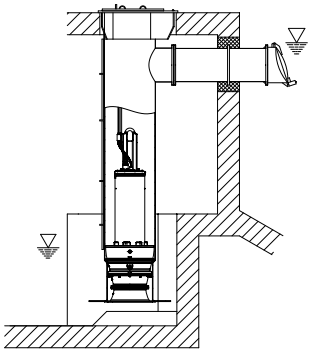
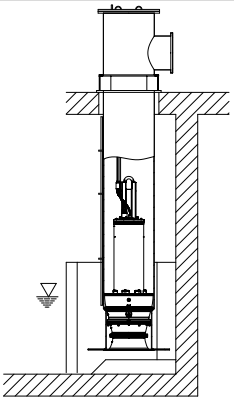
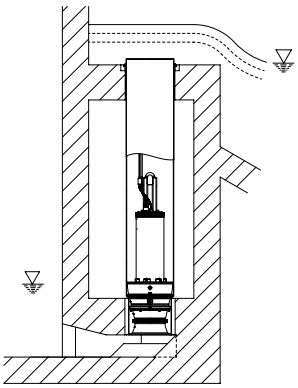
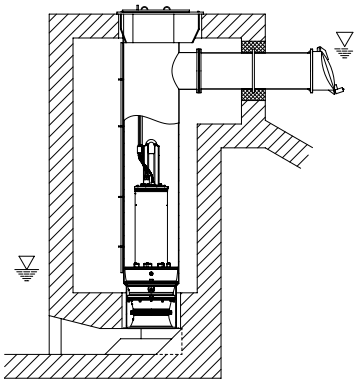
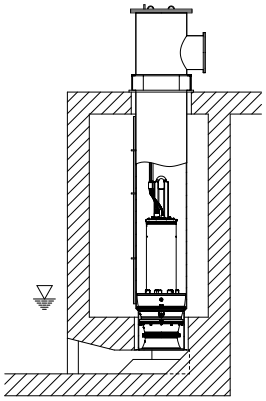
## Installation types

Nine design variants are available[47]:

**Table 31:** Overview of installation types

| | | |
|---|---|---|
|  |  |  |
| BU[48]/BUS[49] discharge tube | CU[48]/CUS[49] discharge tube | DU[48]/DUS[49] discharge tube |
| Overflow design for installation in open intake chamber | Design with underfloor discharge line for installation in open intake chamber | Design with above floor discharge nozzle for installation in open intake chamber |
|  |  |  |
| BG[48] discharge tube | CG[48] discharge tube | DG[48] discharge tube |
| Overflow design for installation in covered intake chamber for low suction-side water levels | Design with underfloor discharge line for installation in covered intake chamber for low suction-side water levels | Design with above-floor discharge nozzle for installation in covered intake chamber for low suction-side water levels |

## Scope of supply

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

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

Optional accessories:

- Support rope
- Accessories for installing the cable guide:
  - Spacer
  - Turnbuckle
  - Support
  - Shackle
  - Cable clamps
- Cable support sleeves
- Flow-straightening vane to prevent floor vortices

47 For information on the various designs (foundation dimensions, intake chamber, etc.) refer to the general arrangement drawings.
48 Design without suction umbrella
49 Design with suction umbrella

## Accessories

## Dimensions of the flow-straightening vane

## Design of the intake chamber wall surfaces (to prevent vortex formation)

The flow-straightening vane is indispensable for the inlet conditions of the pump set. It prevents the development of a submerged vortex (floor vortex) which could cause a drop in performance, for example. In addition, the floor and wall surfaces of the intake chamber should be designed as a rough concrete surface. Rough surfaces minimize the separation of boundary layers that may cause wall and floor vortices.

## Flow-straightening vane and intake chamber

- The anti-swirl baffles in the bellmouth must be aligned with the flow-straightening vane.
- The bail of the pump is oriented in the same direction as the anti-swirl baffles in the bellmouth.

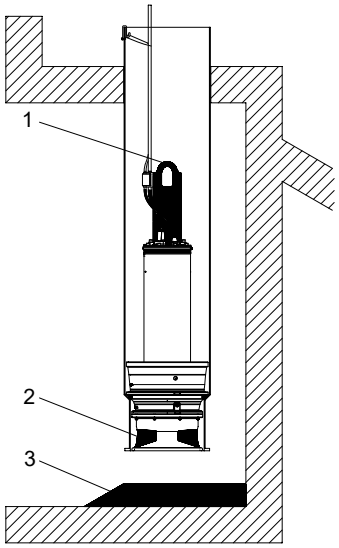
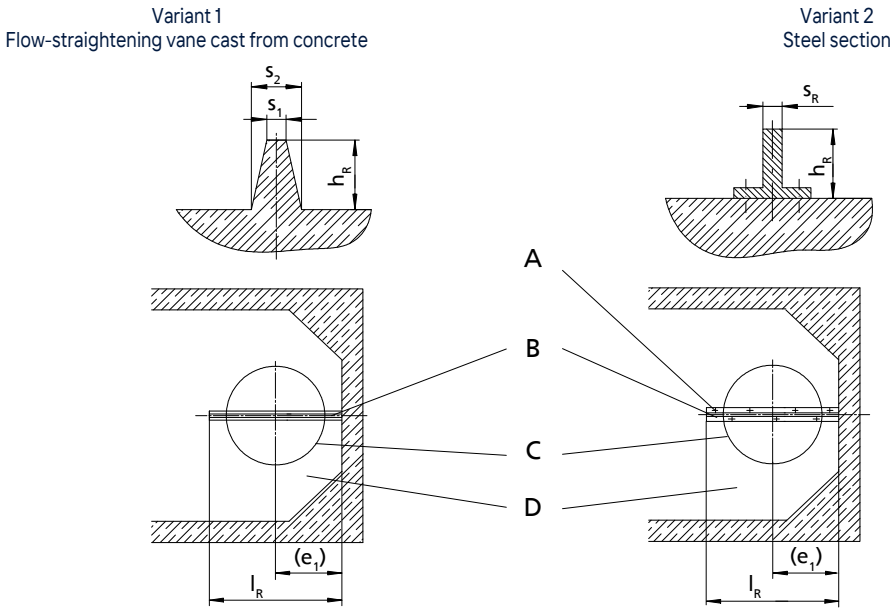



**Fig. 2:** Installation position of the pump set

| | |
|---|---|
| 1 | Bail |
| 2 | Anti-swirl baffles |
| 3 | Flow-straightening vane |




| | |
|---|---|
| A | Bolted to the floor of the intake chamber |
| B | Flow-straightening vane centered beneath the discharge tube |
| C | Discharge tube |
| D | Intake chamber |



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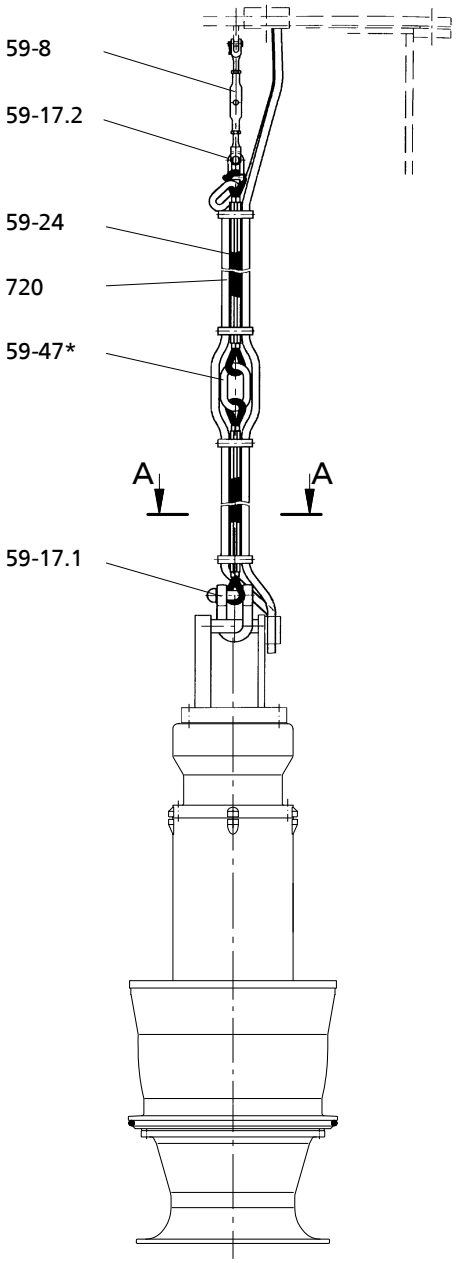
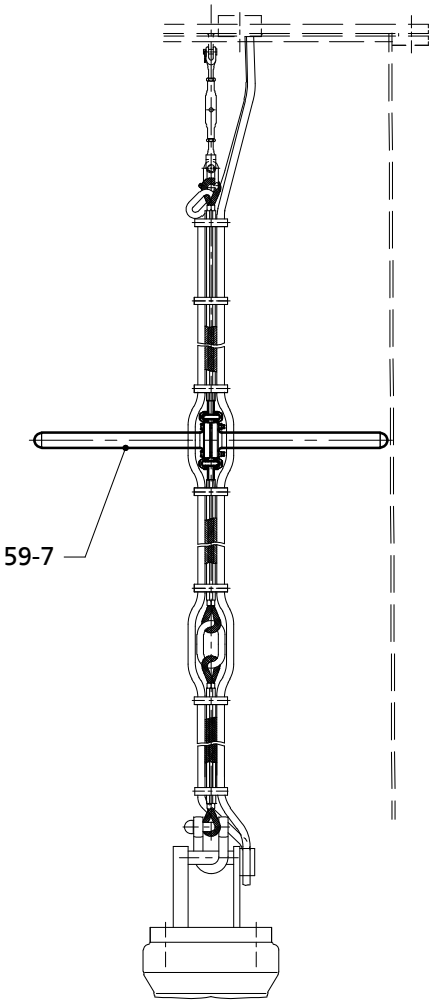
### Support rope and turnbuckle in the discharge tube




**For large installation depths**
(with support spacer)




*= The number of (intermediate) lifting rings depends on the lifting height of the hoisting tackle and on the building structure. (Intermediate lifting rings are supplied as an option).

**Table 32:** List of components

| Part No. | Description | Material |
|---|---|---|
| 59-8 | Turnbuckle | Stainless steel |
| 59-17.2 | Shackle | Stainless steel |
| 59-47 | (Intermediate) lifting ring(s) | Stainless steel |
| 59-24 | Rope, low-rotation design | Stainless steel |

| Part No. | Description | Material |
|---|---|---|
| 720 | Spacer | EPDM |
| 59-17.1 | Shackle | Stainless steel (material option from a total weight of 4250 kg: steel) |
| 59-7 | Support | GFRP |

**Cross-section of cable support**

**A-A**

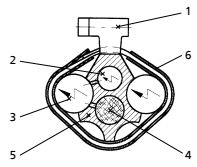



**Table 33:** List of components

| Part No. | Description | Part No. | Description |
|---|---|---|---|
| 1 | Cable clamp | 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

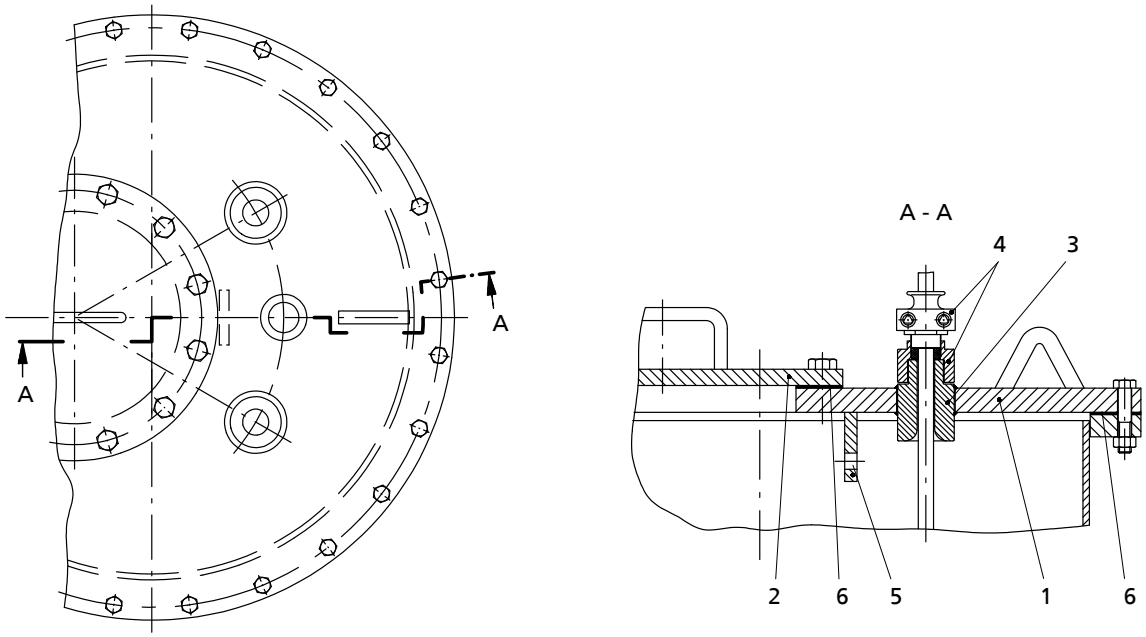



**Fig. 3:** Design variant with welding sleeve

**Table 34:** List of components

| Part No. | Description | Part No. | Description |
|---|---|---|---|
| 1 | Discharge tube cover[50)] | 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 |

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**50** Discharge tube cover also available in split design

### Design variant with transit frame (up to 1 bar)

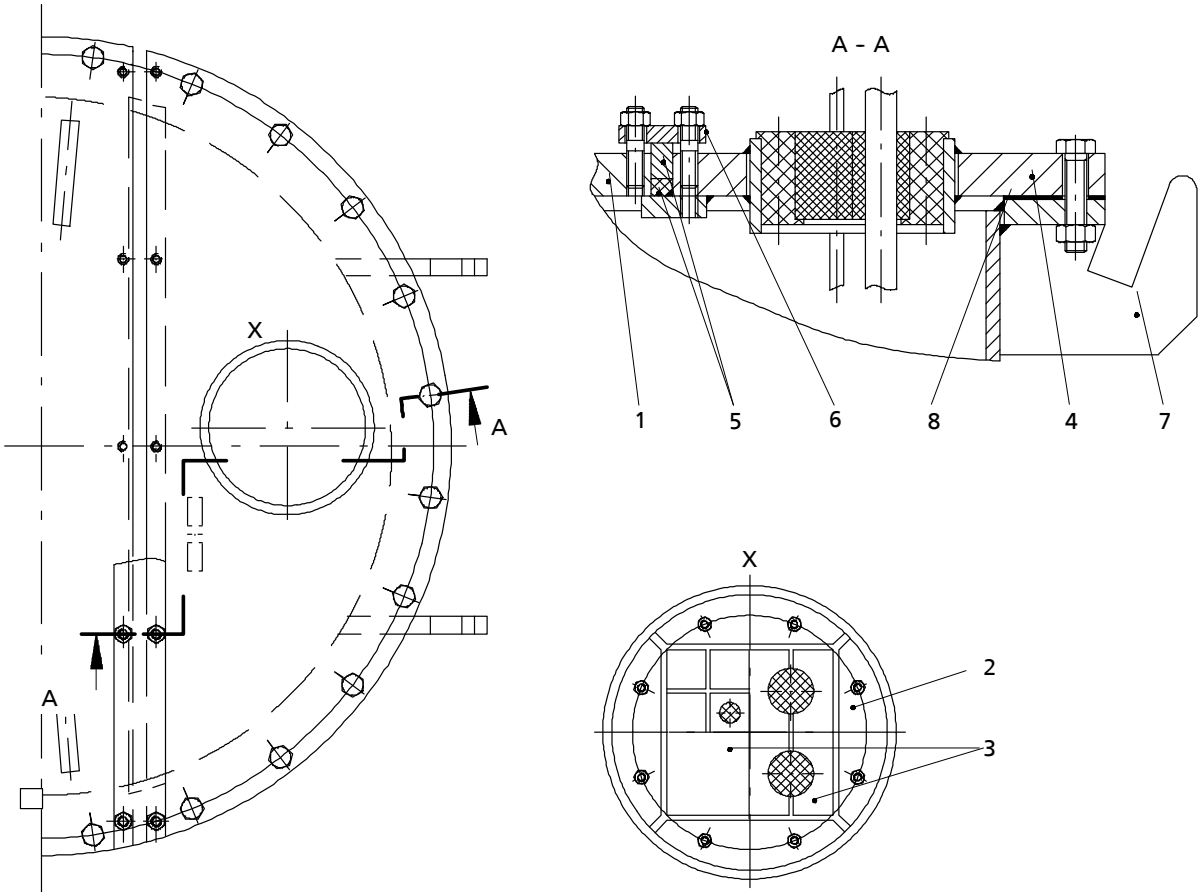


**Fig. 4:** Design variant with transit frame (up to 1 bar)

**Table 35:** List of components

| Part No. | Description |
|---|---|
| 1 | Discharge tube cover[51)] |
| 2 | Transit frame (cable gland) |
| 3 | Packing blocks and insert blocks |
| 4 | Cover segment with cable gland |
| 5 | Sealing of split cover with closed cell profile gasket |
| 6 | Gap cover |
| 7 | Support brackets for cover segment with cable glands |
| 8 | Gasket (e.g. rubber with fabric reinforcement) |

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51 Discharge tube cover also available in single-piece design

## General assembly drawings

**AmaCan P 400-290**
**AmaCan P 500-325**

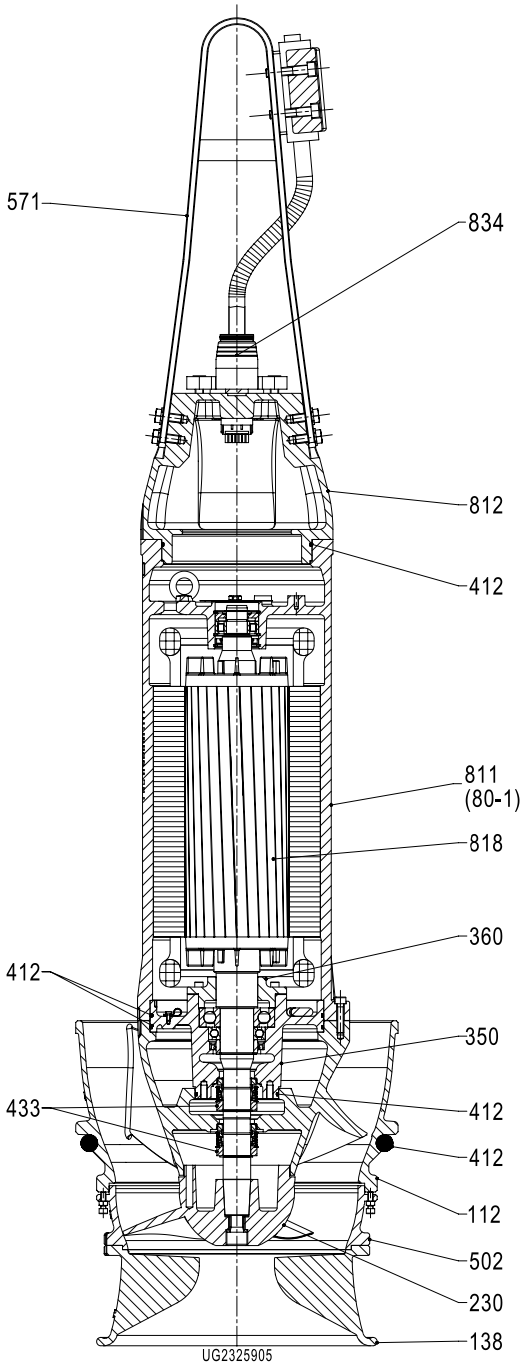


**Table 36:** List of components

| Part no. | Description | Part no. | Description |
|---|---|---|---|
| 112 | Pump bowl | 502 | Casing wear ring |
| 138 | Bellmouth | 571 | Bail |
| 230 | Impeller | 811 | Motor housing |
| 350 | Bearing housing | 812 | Motor housing cover |
| 360 | Bearing cover | 818 | Shaft (rotor) |
| 412 | O-ring | 834 | Cable gland |
| 433 | Mechanical seal | - | - |

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**AmaCan P 600-351**
**AmaCan P 700-471**
**AmaCan P 800-471**

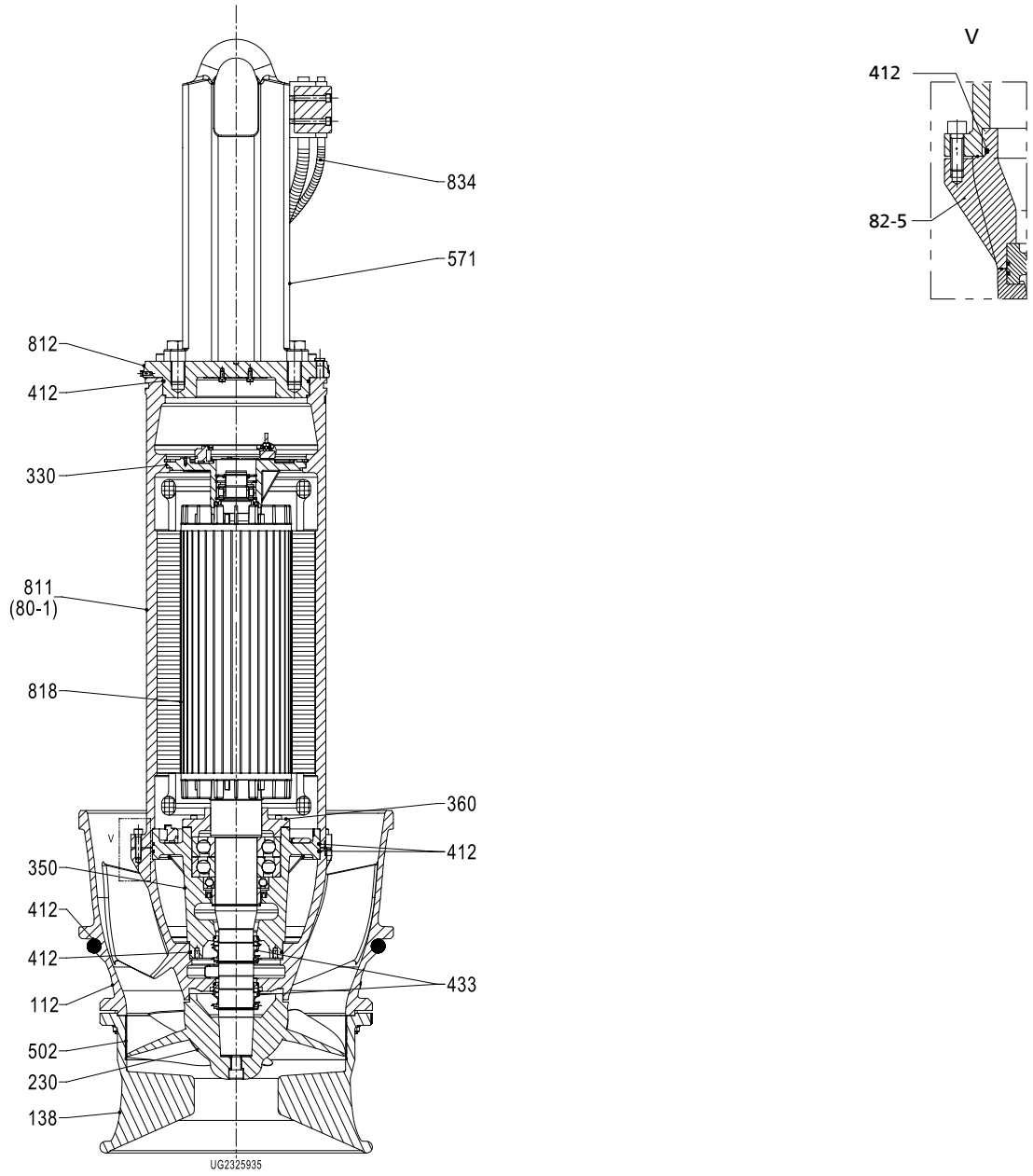


**Table 37:** List of components

| Part No. | Description | Part No. | Description |
|---|---|---|---|
| 112 | Pump bowl | 502 | Casing wear ring |
| 138 | Bellmouth | 571 | Bail |
| 230 | Impeller | 811 | Motor housing |
| 330 | Bearing bracket[52)] | 812 | Motor housing cover |
| 350 | Bearing housing | 82-5 | Adapter[53)] |
| 360 | Bearing cover | 818 | Shaft (rotor) |
| 412 | O-ring | 834 | Cable gland |
| 433 | Mechanical seal | - | - |

**52** Not on size 600-351
**53** On size 800-471

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