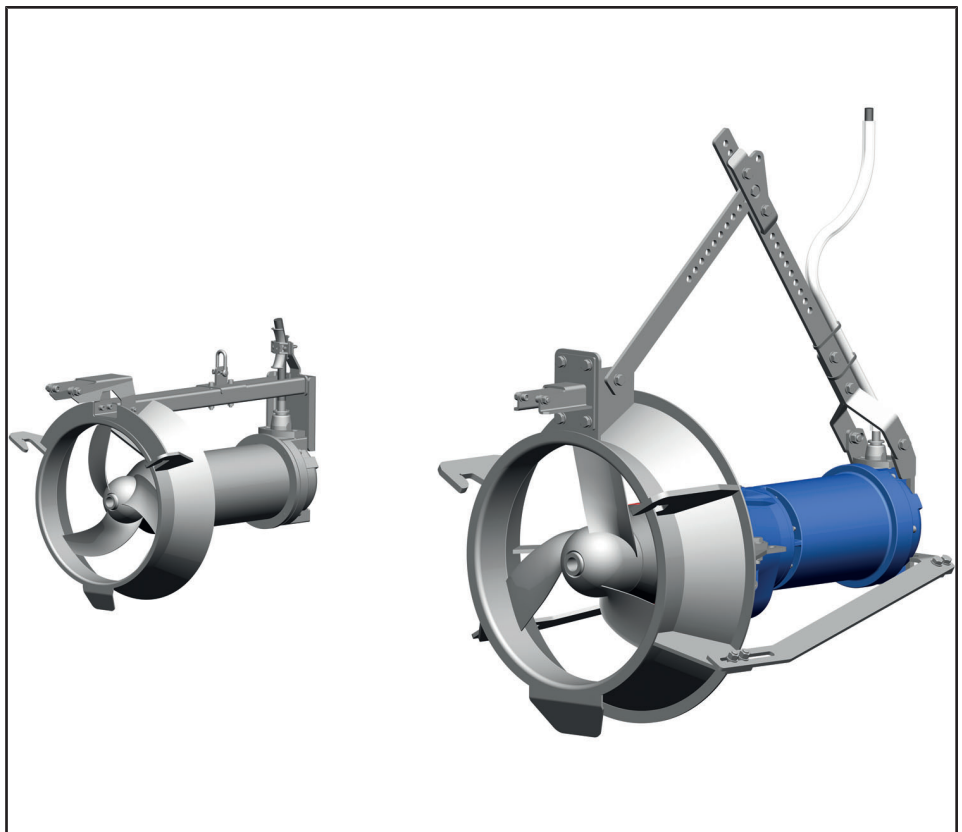


Submersible Motor Pump

Amaline

60 Hz, NEMA

Type Series Booklet



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Type Series Booklet Amaline

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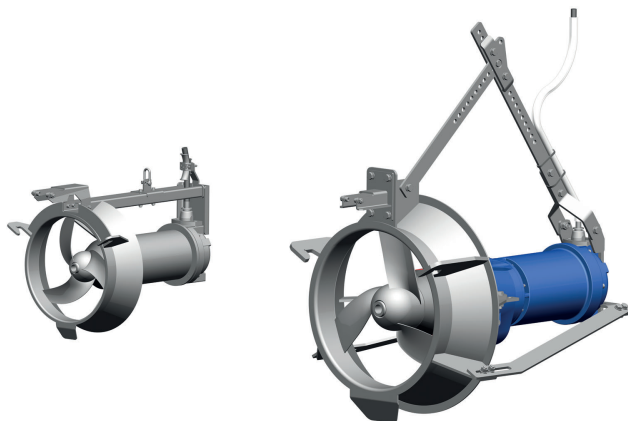
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Waste Water

Submersible Motor Pump

Amaline



Main applications

- Recirculating activated sludge from the nitrification to the denitrification stage of activated sludge tanks
- Generating flow in water bodies
- Economic handling of stormwater, river water, surface water and polder water at low heads

Fluids handled

- Activated sludge
- Stormwater
- River water
- Polder water
- Surface water

Operating data

Table 1: Operating properties of an Amaline 200/300/400

Characteristic		Amaline 200	Amaline 300	Amaline 400
Power	P [hp]	3,4	15	6
	P [kW]	2,53	11,2	4,48
Head	H [ft]	8	13,5	4
	H [m]	2,4	4,05	1,2
Flow rate	Q [US.gpm]	2250	6300	9500
	Q [m³/h]	511,4	1431,8	2159,1
Fluid temperature	T [°F]	< 104	< 104	< 104
	T [°C]	< 40	< 40	< 40

Table 2: Operating properties of an Amaline 500/600/800

Characteristic		Amaline 500	Amaline 600	Amaline 800
Power	P [hp]	23	33	36
	P [kW]	17,16	24,63	26,86
Head	H [ft]	12,5	11,2	6,3
	H [m]	3,75	3,36	1,9 max.
Flow rate	Q [US.gpm]	12000	23000	29500
	Q [m³/h]	2727,3	5227,3	6704,5
Fluid temperature	T [°F]	< 104	< 104	< 104
	T [°C]	< 40	< 40	< 40

Design details

Design

- Fully floodable submersible motor pump
- Horizontal installation
- Wet installation

Axial propeller

- Self-cleaning ECB propeller

Shaft seal

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

Amaline 500, 600, 800:

- Additional leakage chamber between the mating ring carrier and the gear unit

Bearings

Amaline 200, 300, 400:

- Grease-packed rolling element bearings sealed for life

Amaline 500, 600, 800:

- Grease-packed rolling elements bearings (sealed for life) in the motor
- Oil-lubricated rolling element bearings in the gear unit

Drive

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

Amaline 200, 300, 400:

- Direct drive

Amaline 500, 600, 800:

- Spur gear drive

Designation

Example: Amaline C 2035 - 1750 / 24 UDG

Table 3: Designation key

Code	Description
Amaline	Type series
C	Pump casing material
C	C Stainless steel
20	Size, nominal diameter (DN)
20	200
30	300
40	400
50	500
60	600
80	800
3	Number of blades
2, 3	
5	Code of blade incidence angle
1, 2, 3, 4, 5, 6, 8	
1750	Nominal speed of axial propeller [rpm]
2	Motor size
0, 1, 2, 3, 4, 6, 8, 11, 16, 17, 23, 25, 30	
4	Number of motor poles
2, 4, 6, 8	
UD	Motor version
UD	Standard version without gear unit
UR	Standard version with gear unit
XD	Explosion-proof, T3, without gear unit
XR	Explosion-proof, T3, with gear unit
G	Motor housing material
G	Gray cast iron
C	Stainless steel

Materials

Table 4: Materials of an Amaline 200/300/400 pump (ASTM)

Component	Pump casing material
	C
Casing cover	A 276 Type 316 Ti
Adapter	PU ¹⁾
Pump casing	A 276 Type 316 Ti
Propeller	A 276 Type 316 Ti
Mechanical seal, propeller end	SiC/SiC
Mechanical seal, drive end	SiC/SiC

Component	Pump casing material
	C
Shaft ²⁾	A 276 Type 316 Ti
Elastomer seals	Viton (FKM)
Screws/bolts	A4 ³⁾

Table 5: Materials of an Amaline 500/600/800 pump (ASTM)

Component	Pump casing material
	C
Casing cover	A 48 Class 40 B
Gear housing	A 48 Class 40 B
Adapter ⁴⁾	PU
Pump casing	A 276 Type 316 Ti
Propeller	A 276 Type 316 Ti
Mechanical seal, propeller end	SiC/SiC
Mechanical seal, drive end	SiC/SiC
Shaft ⁵⁾	~ A 276 Type 440
Elastomer seals	Viton (FKM)
Screws/bolts	A4 ³⁾

Table 6: Motor housing materials for an Amaline 200/300/400 pump (ASTM)

Component	Motor housing material	
	G	C
Motor housing	A 48 Class 40 B	~ A 276 Type 316 Ti
Motor housing cover	A 48 Class 40 B	A 743 CD 4 MCU

Table 7: Motor housing materials for an Amaline 500/600/800 pump (ASTM)

Component	Motor housing material	
	G	C
Motor housing	A 48 Class 40 B	-
Motor housing cover	A 48 Class 40 B	-

Table 8: Materials of an Amaline 200/300/400 pump (EN)

Component	Pump casing material
	C
Casing cover	1.4571
Adapter	PU ⁶⁾
Pump casing	1.4571
Propeller	1.4571
Mechanical seal, propeller end	SiC/SiC
Mechanical seal, drive end	SiC/SiC
Shaft ⁷⁾	1.4571
Elastomer seals	Viton (FPM)
Screws/bolts	A4 ⁸⁾

- For Amaline 300 with motors 8 6 and 12 6: A 48 Class 40 B
- For Amaline ... -300/86 .. G, shaft made of A 276 Type 420
- Equivalent to A 276 Type 316 Ti
- Not for Amaline 800
- Gear unit output shaft
- For Amaline 300 with motors 8 6 and 12 6: EN-GJL-250
- For Amaline ... -300/86 .. G, shaft made of 1.4021
- Equivalent to 1.4571

Table 9: Materials of an Amaline 500/600/800 pump (EN)

Component	Pump casing material
	C
Casing cover	EN-GJL-250
Gear housing	EN-GJL-250
Adapter ⁴⁾	PU
Pump casing	1.4571
Propeller	1.4571
Mechanical seal, propeller end	SiC/SiC
Mechanical seal, drive end	SiC/SiC
Shaft ⁵⁾	1.4122
Elastomer seals	Viton (FPM)
Screws/bolts	A4 ⁸⁾

Table 10: Motor housing materials for an Amaline 200/300/400 pump (EN)

Component	Motor housing material	
	G	C
Motor housing	EN-GJL-250	1.4581
Motor housing cover	EN-GJL-250	1.4517

Table 11: Motor housing materials for an Amaline 500/600/800 pump (EN)

Component	Motor housing material	
	G	C
Motor housing	EN-GJL-250	-
Motor housing cover	EN-GJL-250	-

Description of materials

EN-GJL-250 gray cast iron (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 value should be ≥ 6.5 , the sand content ≤ 0.5 g/l.

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.

1.4571 / 1.4581 (X10 CrNiMoTi 18 10): austenitic steel

This austenitic steel to DIN 17440 is characterized by its high corrosion resistance in municipal and chemical waste water. It is stabilized with titanium and as such resistant to intergranular corrosion even when welded.

Galvanized materials

When galvanized materials are used in submerged operation in a waste water treatment plant, the occurrence of a high oxygen concentration can lead to premature wear of the zinc coat and, consequently, to premature corrosion. Consult KSB if necessary.

Product benefits

- Perfectly protected by absolutely water-tight cable gland protecting the motor against moisture
- Motor monitored by temperature sensors to prevent it from overheating
- Easy to install
- Double safety by two bi-directional mechanical seals with oil chamber filled with environmentally friendly oil

Amaline 500/600/800:

- Leakage chamber between oil chamber and gear unit for high reliability
- Optional: leakage sensor in leakage chamber available for non-explosion-proof version

Product information

Product information as per Regulation No 1907/2006 (REACH)

For information as per European chemicals regulation (EC) No. 1907/2006 (REACH) see <https://www.ksb.com/en-global/company/corporate-responsibility/reach>.

Acceptance tests and warranty

- Every pump undergoes functional testing to KSB standard ZN 56535.
- Quality is assured by means of an audited and certified quality assurance system to DIN EN ISO 9001.

Special acceptance tests are available on request.

Selection information

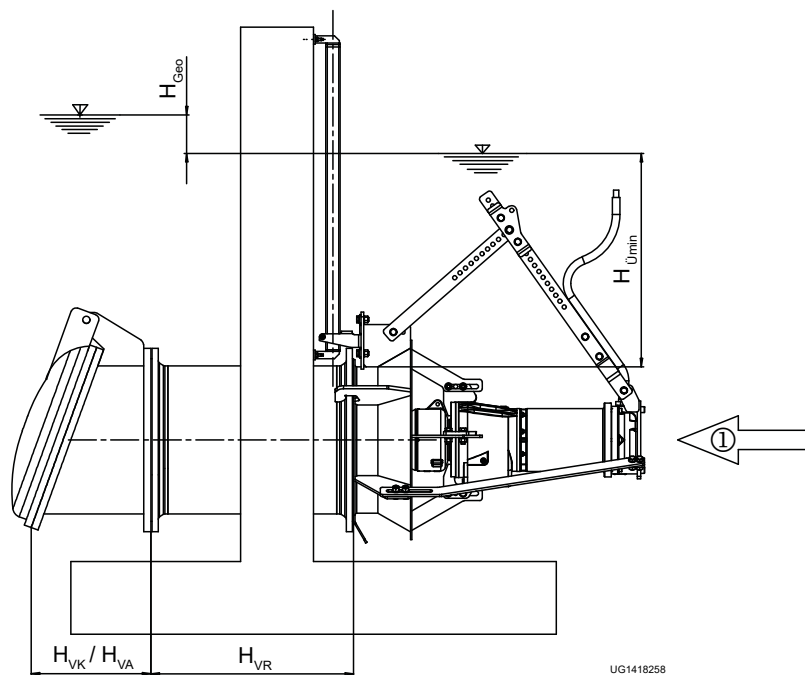


Fig. 1: Drawing showing the design criteria - H_s , H_{Geo} , H_{LP} , H_{LV} , H_{VA}

H_s	Submergence	H_{LP}	Head losses in the piping
H_{Geo}	Geodetic head	H_{LV}	Head losses in the valves
H_{VTotal}	Head losses in the system	H_{VA}	Head losses at the outlet
①	Direction of flow		

Example:

Given:

Flow rate: $Q = 5944.5 \text{ US.gpm}$ [$1350 \text{ m}^3/\text{h}$]

Geodetic head: $H_{\text{Geo}} = 0.98 \text{ ft}$ [0.3 m]

1. Pre-selection

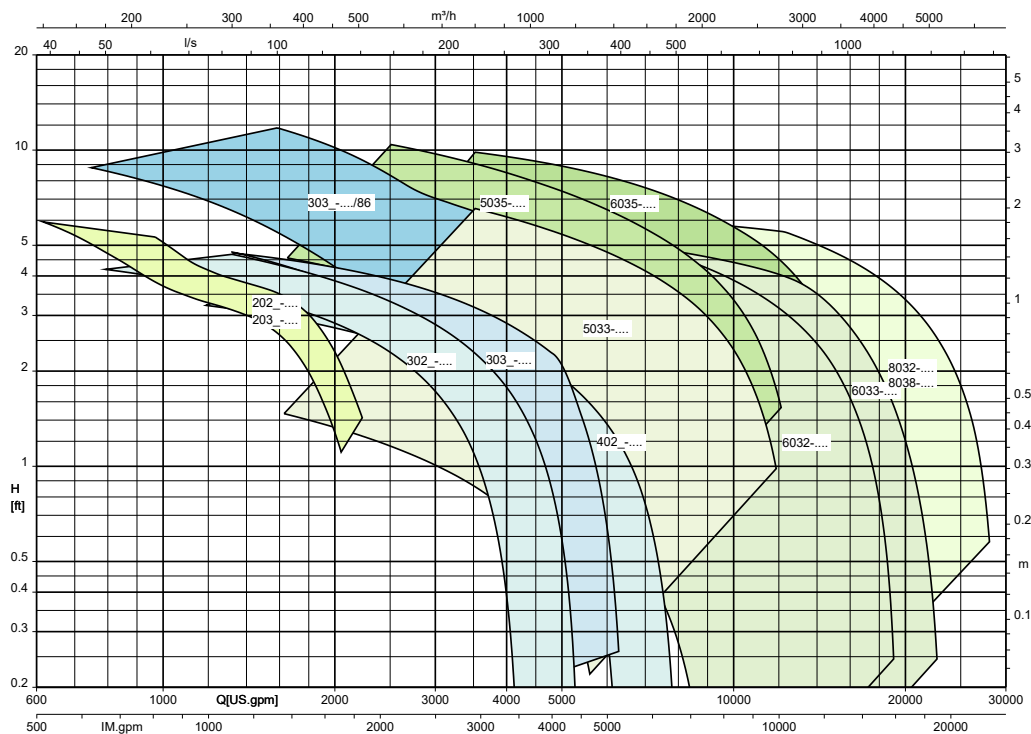


Fig. 2: Pre-selection: Amaline with DN 500

2. Determining the outlet losses

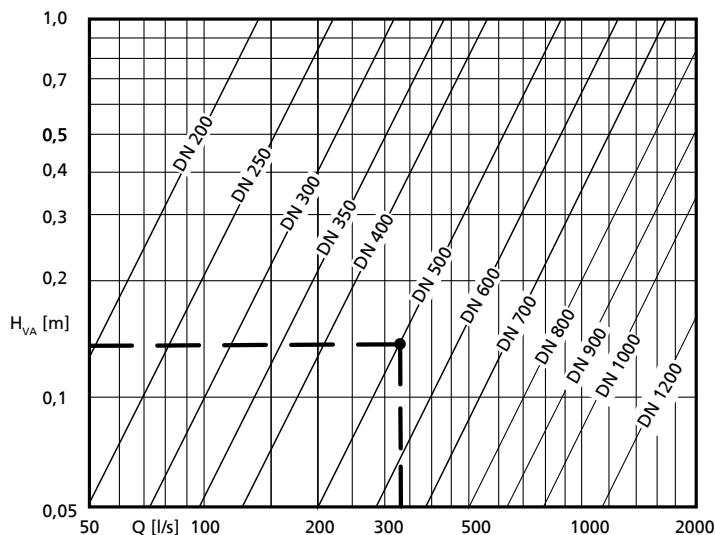


Fig. 3: Head losses at the outlet $H_{VA} = v^2/2g$

v	Flow velocity in the connection pipe
Q	Flow rate
d	Inside diameter of the connection pipe

$$H_{VA} = v^2/2g = 0.0155 \text{ v}^2 = 0.00259 \text{ Q}^2/d^4 = 0.5 \text{ ft [0.15 m]}$$

3. Determining the head

$$H = H_{Geo} + H_{VTotal}$$

$$H_{VTotal} = H_{LP} + H_{LV} + H_{VA}$$

$$H_{LP} = 0 \text{ ft [0 m]} \text{ (short pipe)}$$

$$H_{LV} = 0.49 \text{ ft [0.15 m]} \text{ (observe the manufacturer's information, characteristic } H_{LV(Q)})$$

$$H_{VA} = v^2/2g = 0.15 \text{ m}$$

$$H = 0.98 \text{ ft [0,3 m]} + 0 \text{ ft [0 m]} + 0.49 \text{ ft [0,15 m]} + 0.49 \text{ ft [0,15 m]} = 1.96 \text{ ft [0,6 m]}$$

4. Duty point = design point

If operated on a frequency inverter the pump can be run at its design point without deviations.

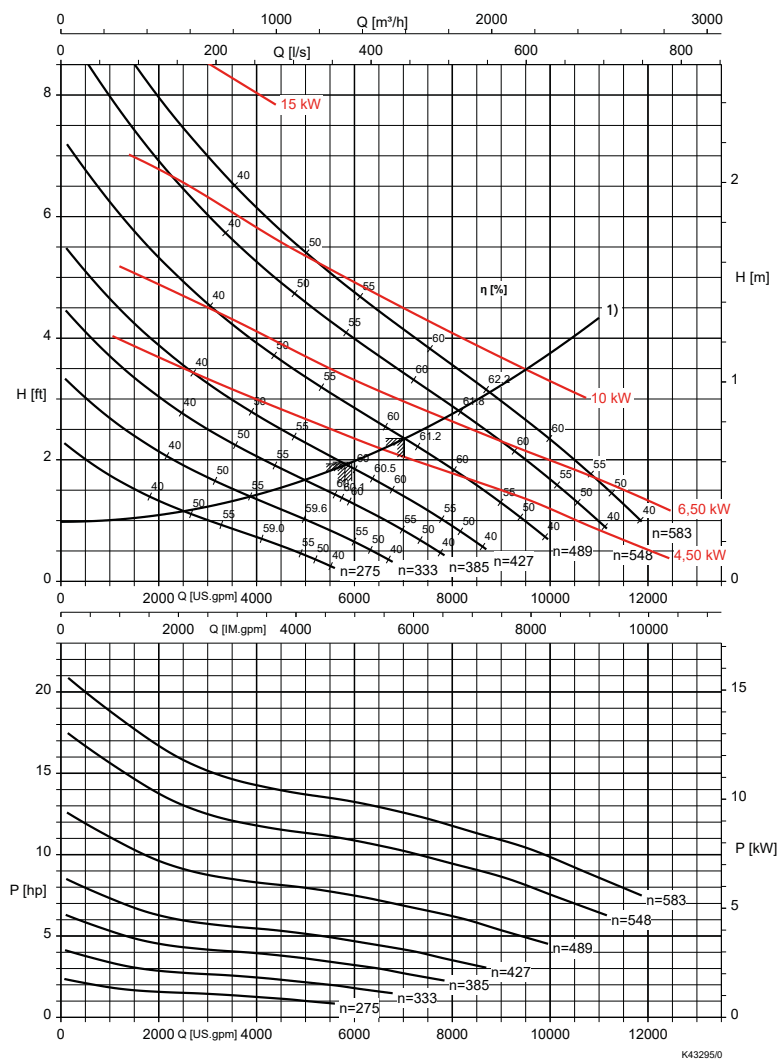


Fig. 4: Speed-based selection chart Amaline 5033-__ __, 1) = system curve

The operating speed equals 427 rpm or 489 rpm. All pump sets have sufficient motor reserves (they use max. 85 % of the motor rating).

Table 12: Technical data

Description	Speed $n_{eff.}$	Motor rating P_2		Drive with gear unit	Transmission ratio
	[rpm]	[hp]	[kW]		
5033-427/44	427	6,0	4,5	SP189	4,143
5033-489/64	489	8,7	6,5	SP189	3,618

5. Information on operation

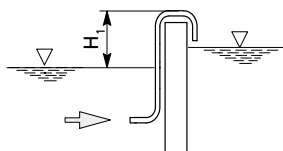


Fig. 5: Required head H_1 of the siphon line

Pipe lengths: $L > 5 \times D$:

When starting up the pump, the acceleration of the pipe content leads to higher heads. For this reason, the pump will briefly exceed its operating limits. The duty point for filling the siphon line must be below the operating limit:

- $H_{\max.} \leq \text{operating limit}$

The indicated heads and performance data apply to fluids handled with a density $\rho = 1 \text{ kg/dm}^3$ and a kinematic viscosity ν of up to $4 \text{ ft}^2/\text{s}$ [$20 \text{ mm}^2/\text{s}$].

Overview of product features / selection tables

Overview of product features

Table 13: Overview: Amaline 200/300/400, motor housing made of gray cast iron

Feature	Amaline 200	Amaline 300	Amaline 400
Motor size			
4 poles	1 4 2 4	-	-
6 poles	-	0 6 2 6 8 6 12 6	-
8 poles	-	-	3 8 4 8
Propeller speed	1750 rpm	1160 rpm	875 rpm
Propeller diameter	7 7/8"	11 15/16"	15 1/8"
	200 mm	303 mm	384 mm
Power range	1.7 hp to 3.4 hp	2.8 hp to 15 hp	4.0 hp to 6.0 hp
	1.27 kW to 2.53 kW	2.09 kW to 11.19 kW	2.98 kW to 4.47 kW
Bearings	Grease-packed rolling element bearings sealed for life		
Explosion protection			
Version UD	Non-explosion-proof		
Version XD	 or  Explosion-proof Class I, Division 1, Groups C & D, T3		
Motor			
Starting method	DOL ⁹⁾		DOL or star-delta
Voltage	460 V ¹⁰⁾ , suitable for operation on a frequency inverter		
Cooling	By surrounding fluid handled		
Immersion depth	Up to 39.4 ft [12 m] ¹¹⁾		
Power cable			
Length	33 ft [10 m] ¹²⁾		
Cable entry	Absolutely water-tight		
Type	See table "Overview of power cables"		
Monitoring equipment			
Winding temperature	PTC thermistor		
Leakage	Leakage sensor in the motor space		
Coating	Two-component epoxy resin coating		
Permissible ambient temperature	104 °F [40 °C]		

⁹⁾ For motor 8 6 and 12 6: DOL or star-delta

¹⁰⁾ Optional: 575 V on request

¹¹⁾ Larger immersion depths on request

¹²⁾ Optional: 49.21 ft [15 m], 65.61 ft [20 m], > 65.61 ft [20 m] on request

Table 14: Overview: Amaline 200/300/400, motor housing made of stainless steel

Feature	Amaline 200	Amaline 300	Amaline 400
Motor size			
4 poles	1 4 2 4	-	-
6 poles	-	0 6 2 6	-
8 poles	-	-	3 8 4 8
Propeller speed	1750 rpm	1160 rpm	875 rpm
Propeller diameter	7 7/8"	11 15/16"	15 1/8"
	200 mm	303 mm	384 mm
Power range	1.7 hp to 3.4 hp	2.8 hp to 4.7 hp	4.0 hp to 6.0 hp
	1.27 kW to 2.53 kW	2.09 kW to 3.51 kW	2.98 kW to 4.48 kW
Bearings	Grease-packed rolling element bearings sealed for life		
Explosion protection			
Version UD	Non-explosion-proof		
Version XD	 or  Explosion-proof Class I, Division 1, Groups C & D, T3		
Motor			
Starting method	DOL		DOL or star-delta
Voltage	460 V ¹⁰⁾ , suitable for operation on a frequency inverter		
Cooling	Grease-packed rolling element bearings sealed for life		
Immersion depth	Up to 39.4 ft [12 m]		
Power cable			
Length	33 ft [10 m] ¹²⁾		
Cable entry	Absolutely water-tight		
Type	See table "Overview of power cables"		
Monitoring equipment			
Winding temperature	PTC thermistor		
Leakage	Leakage sensor in the motor space ¹³⁾		
Coating	-		
Permissible ambient temperature	104 °F [40 °C]		

Table 15: Overview: Amaline 500/600/800, motor housing made of gray cast iron

Feature	Amaline 500	Amaline 600	Amaline 800
Motor size			
2 poles	17 2	17 2 25 2	-
4 poles	4 4 6 4 11 4	4 4 6 4 11 4 16 4	4 4 6 4 11 4 16 4 23 4 30 4
Propeller speed	275 to 735 rpm	275 to 674 rpm	249 to 466 rpm
Propeller diameter	19 1/16"	23"	31"
	484 mm	584 mm	787 mm
Power range	6.0 hp to 23.0 hp	6.0 hp to 33.0 hp	6.0 hp to 36.0 hp
	4.48 kW to 17.16 kW	4.48 kW to 24.62 kW	4.48 kW to 26.86 kW
Bearings			
Motor	Grease-packed rolling element bearings sealed for life		
Gear unit	Oil-lubricated rolling element bearings		
Explosion protection			
Version UR	Non-explosion-proof		
Version XR	 or  Explosion-proof Class I, Division 1, Groups C & D, T3		
Motor			
Starting method	DOL or star-delta		
Voltage	460 V ¹⁰⁾ , suitable for operation on a frequency inverter		
Cooling	Cooled by surrounding fluid		

¹³⁾ Optional for U version only: additional leakage sensor in the oil chamber

Feature	Amaline 500	Amaline 600	Amaline 800
Immersion depth	Up to 39.4 ft [12 m] ¹¹⁾		
Power cable			
Length	33 ft [10 m] ¹²⁾		
Cable entry	Absolutely water-tight		
Type	See table "Overview of power cables"		
Monitoring equipment			
Winding temperature	PTC thermistor		
Leakage	Leakage sensor in the motor space ¹⁴⁾		
Coating	Two-component epoxy resin coating		
Permissible ambient temperature	104 °F [40 °C]		

Table 16: Overview of power cables

Feature	S1BN8-F rubber-sheathed cable	S07RC4N8-F rubber-sheathed cable	TEHSITE Tefzel cable
Design	Standard	On request	Optional
Rated voltage	1000 V	750 V	750 V
EMC screening	-	✓	-
Insulation material	EPR ¹⁵⁾	EPR ¹⁵⁾	ETFE ¹⁶⁾
Max. continuous temperature of insulation	194 °F [90 °C]	194 °F [90 °C]	275 °F [135 °C]
For permanent immersion in waste water to DIN VDE 0282-16/HD22.16	✓	✓	✓

¹⁴⁾ Optional for U version only: additional leakage sensor in the leakage chamber

¹⁵⁾ EPR = ethylene propylene rubber

¹⁶⁾ ETFE = ethylene tetrafluoroethylene

Combination of pump and motor: Amaline 200, 300, 400, motor housing made of gray cast iron

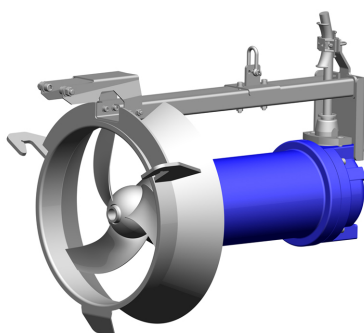


Fig. 6: Amaline 200/300/400 (direct drive)¹⁷⁾

Table 17: Overview of pump sizes and motors

Amaline	Motors							
	1 4	2 4	0 6	2 6	8 6	12 6	3 8	4 8
Amaline 200								
2021-1750	-	X	-	-	-	-	-	-
2034-1750	-	X	-	-	-	-	-	-
Amaline 300 (lower motor ratings)								
3021-1160	-	-	X	X	-	-	-	-
3022-1160	-	-	X	X	-	-	-	-
3031-1160	-	-	X	X	-	-	-	-
3032-1160	-	-	-	X	-	-	-	-
3033-1160	-	-	-	X	-	-	-	-
Amaline 300 (higher motor ratings)								
3034-1160	-	-	-	-	X	-	-	-
3035-1160	-	-	-	-	X	X	-	-
3036-1160	-	-	-	-	-	X	-	-
Amaline 400								
4021-875	-	-	-	-	-	-	X	X
4022-875	-	-	-	-	-	-	X	X
4031-875	-	-	-	-	-	-	X	X
4032-875	-	-	-	-	-	-	-	X
4033-875	-	-	-	-	-	-	-	X

Combination of pump and motor: Amaline 200, 300, 400, motor housing made of stainless steel

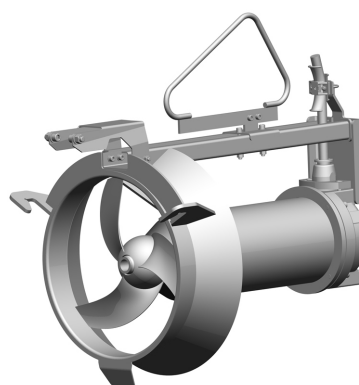


Fig. 7: Amaline 200/300/400 (direct drive)¹⁸⁾

Table 18: Overview of pump sizes and motors

Amaline	Motors					
	1 4	2 4	0 6	2 6	3 8	4 8
Amaline 200						
2021-1750	-	X	-	-	-	-
2034-1750	-	X	-	-	-	-
Amaline 300 (lower motor ratings)						
3021-1160	-	-	X	X	-	-
3022-1160	-	-	X	X	-	-
3031-1160	-	-	X	X	-	-
3032-1160	-	-	-	X	-	-
3033-1160	-	-	-	X	-	-
Amaline 400						
4021-875	-	-	-	-	X	X
4022-875	-	-	-	-	X	X
4031-875	-	-	-	-	X	X
4032-875	-	-	-	-	-	X
4033-875	-	-	-	-	-	X

¹⁷⁾ Illustration with shackle as the attachment point (standard)

¹⁸⁾ Illustration with bail as the attachment point (optional)

Combination of pump and motor: Amaline 500, 600, 800, motor housing made of gray cast iron

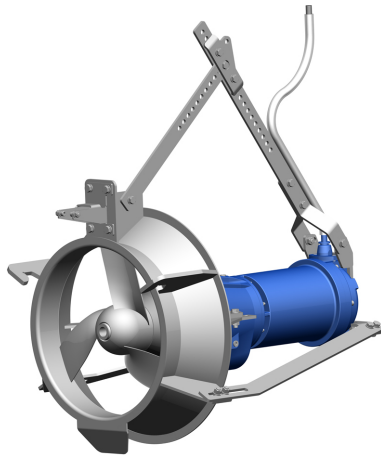


Fig. 8: Amaline 500/600/800 (spur gear drive)

Table 19: Overview of pump sizes and motors

Amaline	Motors							
	17 2	25 2	4 4	6 4	11 4	16 4	23 4	30 4
Amaline 500 (lower motor ratings)								
5033-275	-	-	X	-	-	-	-	-
5033-333	-	-	X	-	-	-	-	-
5033-385	-	-	X	-	-	-	-	-
5033-427	-	-	X	X	-	-	-	-
5033-489	-	-	X	X	X	-	-	-
5033-548	-	-	-	X	X	-	-	-
5033-583	-	-	-	X	X	-	-	-
Amaline 500 (higher motor ratings)								
5035-486	-	-	-	X	-	-	-	-
5035-544	-	-	-	X	-	-	-	-
5035-579	-	-	-	X	X	-	-	-
5035-631	-	-	-	X	X	-	-	-
5035-662	X	-	-	-	-	-	-	-
5035-674	X	-	-	-	-	-	-	-
5035-735	X	-	-	-	-	-	-	-
Amaline 600 (lower motor ratings)								
6032-275	-	-	X	-	-	-	-	-
6032-333	-	-	X	-	-	-	-	-
6032-385	-	-	X	-	-	-	-	-
6032-427	-	-	X	X	X	-	-	-
6032-489	-	-	X	X	X	-	-	-
6032-548	-	-	-	X	X	-	-	-
6032-583	-	-	-	X	X	-	-	-
6033-275	-	-	X	-	-	-	-	-
6033-333	-	-	X	-	-	-	-	-
6033-389	-	-	X	X	-	-	-	-
6033-427	-	-	X	X	X	-	-	-
6033-489	-	-	-	X	X	-	-	-
6033-548	-	-	-	-	X	-	-	-
6033-583	-	-	-	-	X	-	-	-
Amaline 600 (higher motor ratings)								
6035-403	-	-	-	-	-	X	-	-
6035-431	-	-	-	-	-	X	-	-
6035-489	-	-	-	-	X	-	-	-
6035-525	-	-	-	-	-	X	-	-
6035-548	-	-	-	-	X	-	-	-

Amaline	Motors							
	17 2	25 2	4 4	6 4	11 4	16 4	23 4	30 4
6035-590	X	X	-	-	-	-	-	-
6035-631	X	X	-	-	-	-	-	-
6035-674	X	X	-	-	-	-	-	-
Amaline 800								
8032-217	-	-	X	-	-	-	-	-
8032-249	-	-	X	X	-	-	-	-
8032-278	-	-	-	X	X	-	-	-
8032-293	-	-	-	-	-	X	-	-
8032-328	-	-	-	-	-	X	-	-
8032-346	-	-	-	-	-	X	-	-
8032-383	-	-	-	-	-	X	X	-
8032-403	-	-	-	-	-	-	X	X
8032-431	-	-	-	-	-	-	X	X
8032-466	-	-	-	-	-	-	X	X
8038-217 ¹⁹⁾	-	-	X	-	-	-	-	-
8038-249 ¹⁹⁾	-	-	X	X	-	-	-	-
8038-278 ¹⁹⁾	-	-	-	X	X	-	-	-
8038-293 ¹⁹⁾	-	-	-	-	-	X	-	-
8038-328 ¹⁹⁾	-	-	-	-	-	X	-	-
8038-346 ¹⁹⁾	-	-	-	-	-	X	-	-
8038-383 ¹⁹⁾	-	-	-	-	-	X	X	-
8038-403 ¹⁹⁾	-	-	-	-	-	-	X	X
8038-431 ¹⁹⁾	-	-	-	-	-	-	X	X
8038-466 ¹⁹⁾	-	-	-	-	-	-	X	X

Standard and special designs

Table 20: Standard and special designs

Option	Comments
Mechanical seal with covered springs	Available for all sizes
Power cable > 60 ft [20 m]	Available for all sizes
Leakage sensor in leakage chamber of mechanical seal	Available for all Amaline 500/600/800 sizes of version UR
Analyzing device for leakage sensor, thermistor tripping unit for monitoring the winding temperature	Available for all sizes
Special voltage 575 V	Available for all sizes
Two-component epoxy resin coating, 6 mils [250 µm]	Available for all sizes
Additional operating manuals	Standard: 1 operating manual per pump set
Customer-specific installation drawing	Available for all sizes
Flow measurements	Available for all sizes
Flow simulation	Available for all sizes
Installation consultancy	Available for all sizes

¹⁹⁾ Axial propeller suitable for problematic waste water containing long fibers

For any versions not documented in this type series booklet or special versions please always contact KSB for technical details, prices and delivery periods.

Examples:

- Other voltages (except 460 V / 575 V)
- Special coatings
- Combinations of special motor, special propeller, special gear unit
- Special installation parts
- Special cables

Specifications required for enquiries/orders

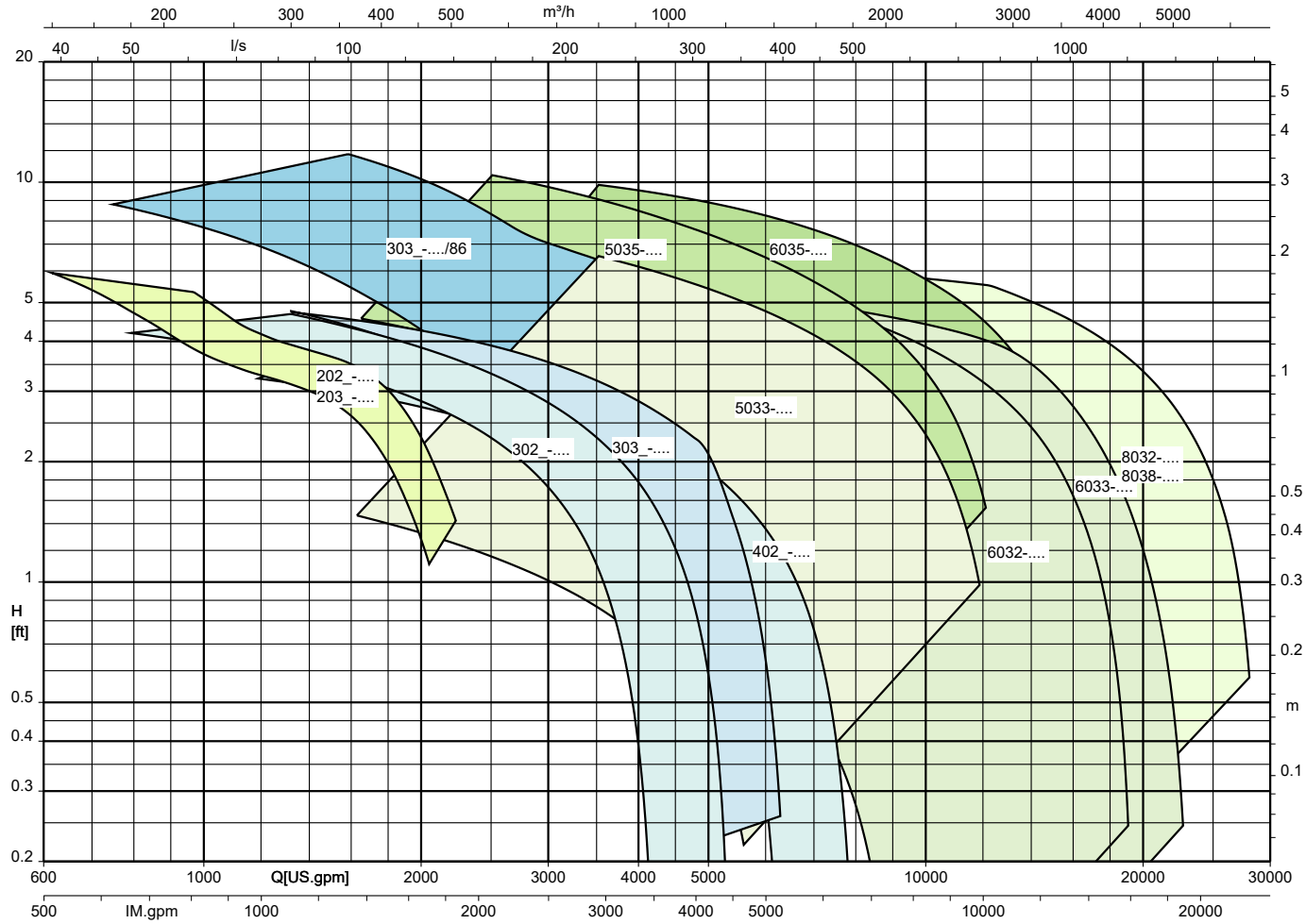
Connection pipe

- Nominal diameter
- Material variant
- Dimensions l_3 and l_4

E.g. connection pipe DN 500 made of galvanized steel, $l_3 = 6.56 \text{ ft [2 m]}$ and $l_4 = 0.98 \text{ ft [0.3 m]}$
 $= 270.1 \text{ lbs [122.5 kg]} + 173.1 \text{ lbs [78.5 kg]} = \mathbf{443.2 \text{ lbs [201 kg]}}$

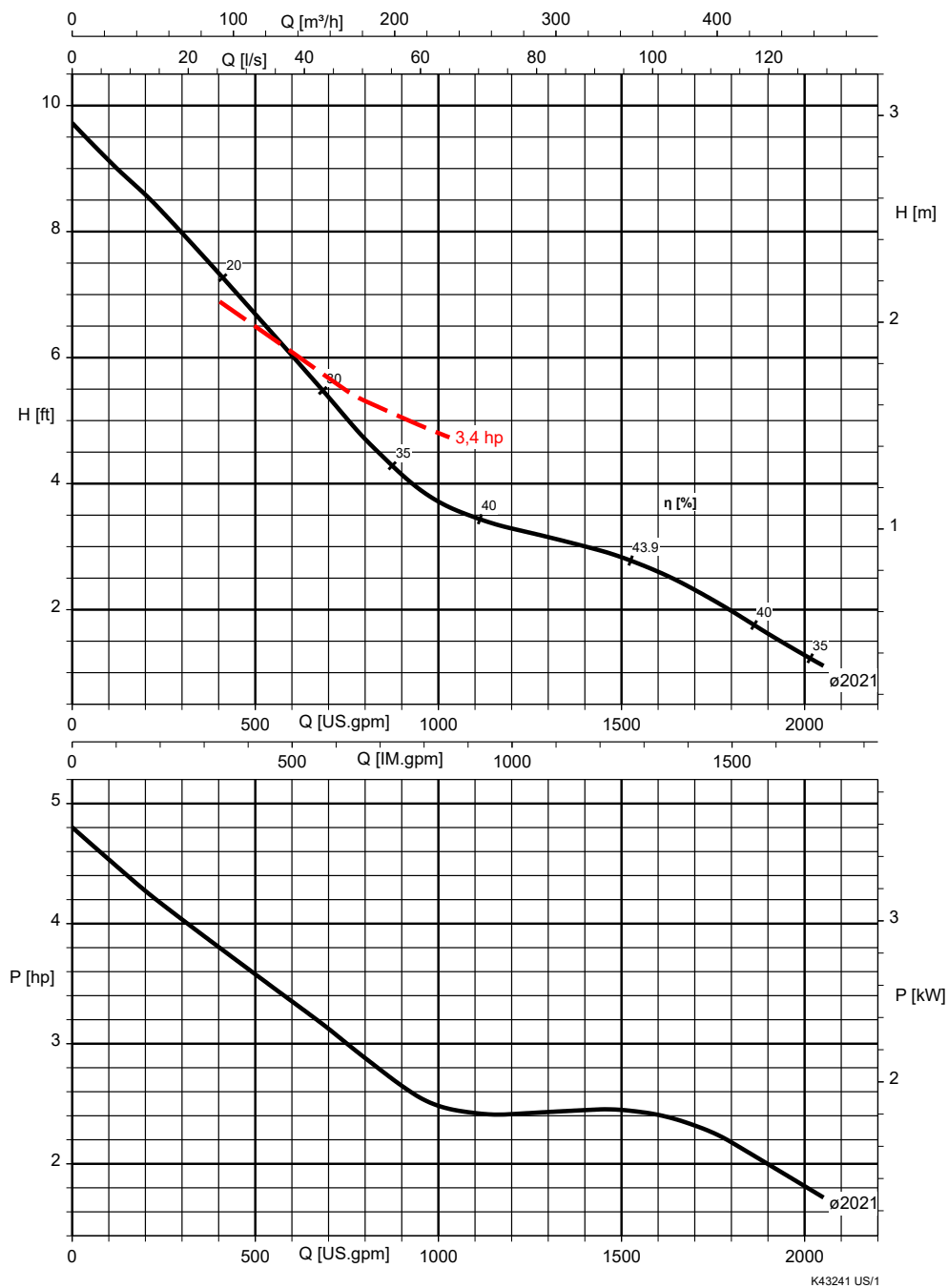
Selection chart

Amaline 200/300/400, n = 1750/1160/875 rpm, Amaline 500/600/800, n = 735 - 217 rpm



Characteristic curves

Amaline 202_, n = 1750 rpm, motors: 2 4

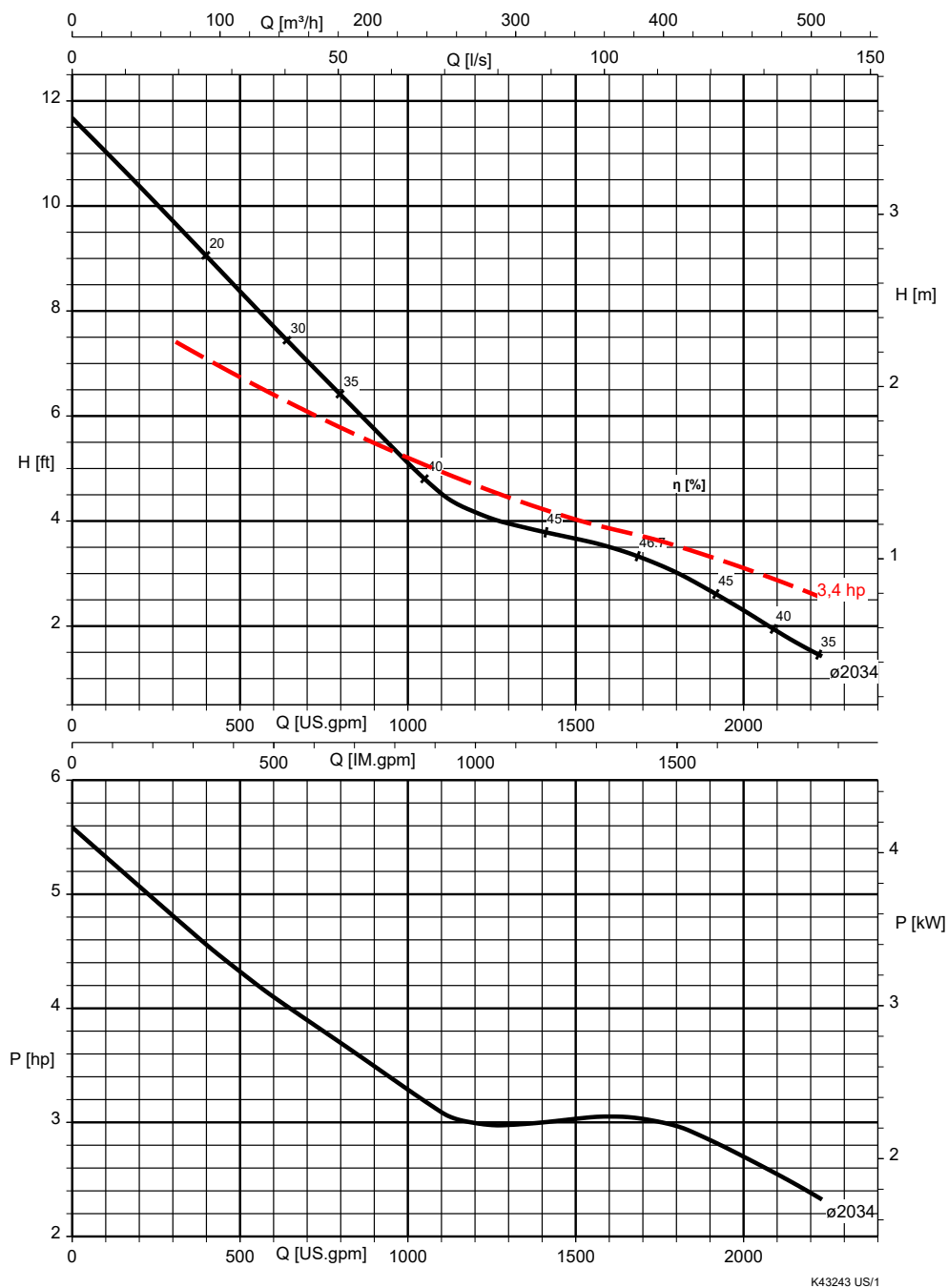


Free passage = 2 9/16" [65 mm]

Table 21: Speed n_n and motor rating P_2

Size	n_n	P_2	
	[rpm]	[hp]	[kW]
2021-1750/24UDG/XDG/UDC/XDC	1750	3,4	2,53

Amaline 203_, n = 1750 rpm, motors: 2 4

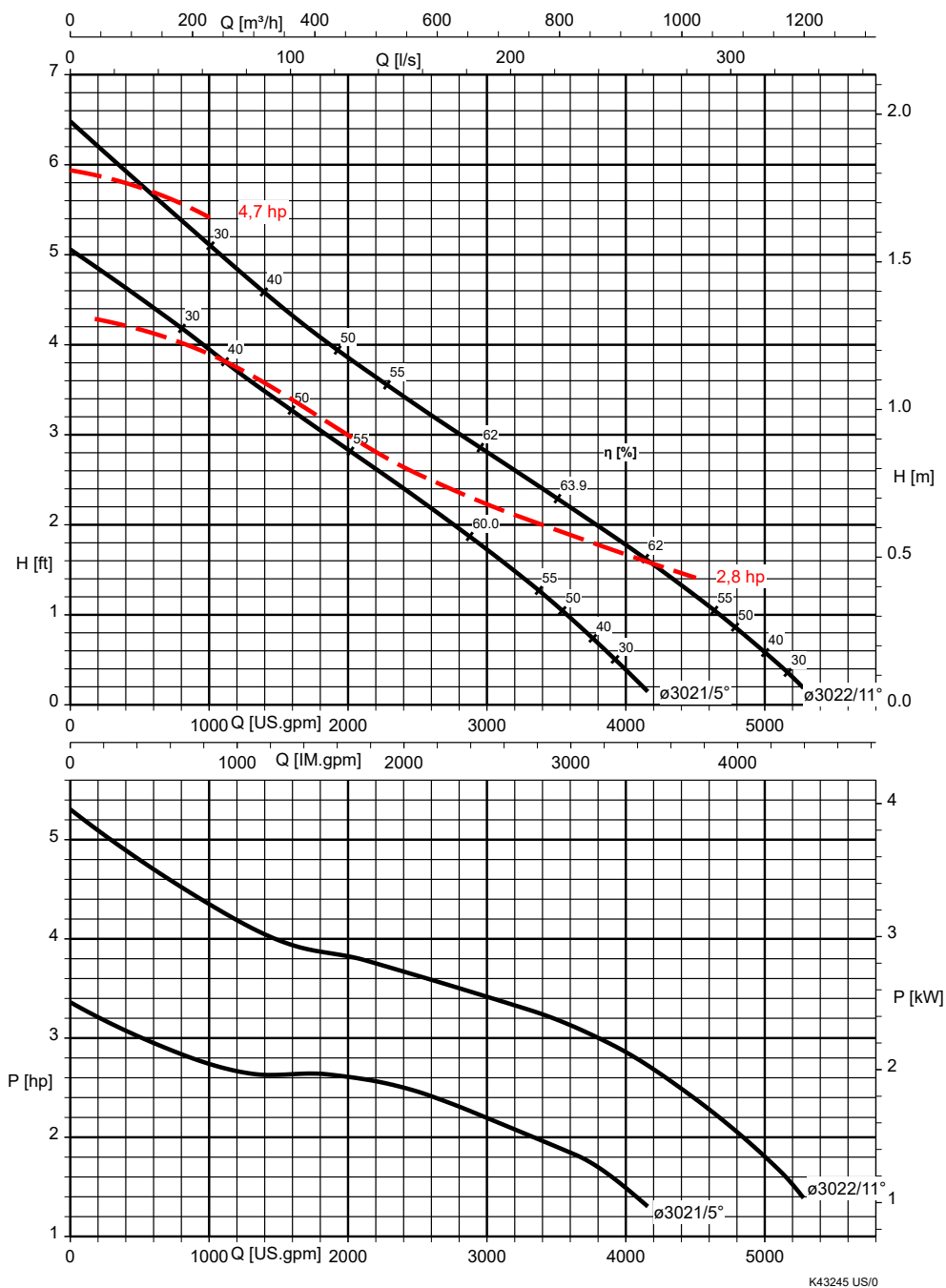


Free passage = 2 9/16" [65 mm]

Table 22: Speed n_n and motor rating P_2

Size	n_n	P_2	
	[rpm]	[hp]	[kW]
2034-1750/24UDG/XDG/UDC/XDC	1750	3,4	2,53

Amaline 302_, n = 1160 rpm, motors: 0 6, 2 6

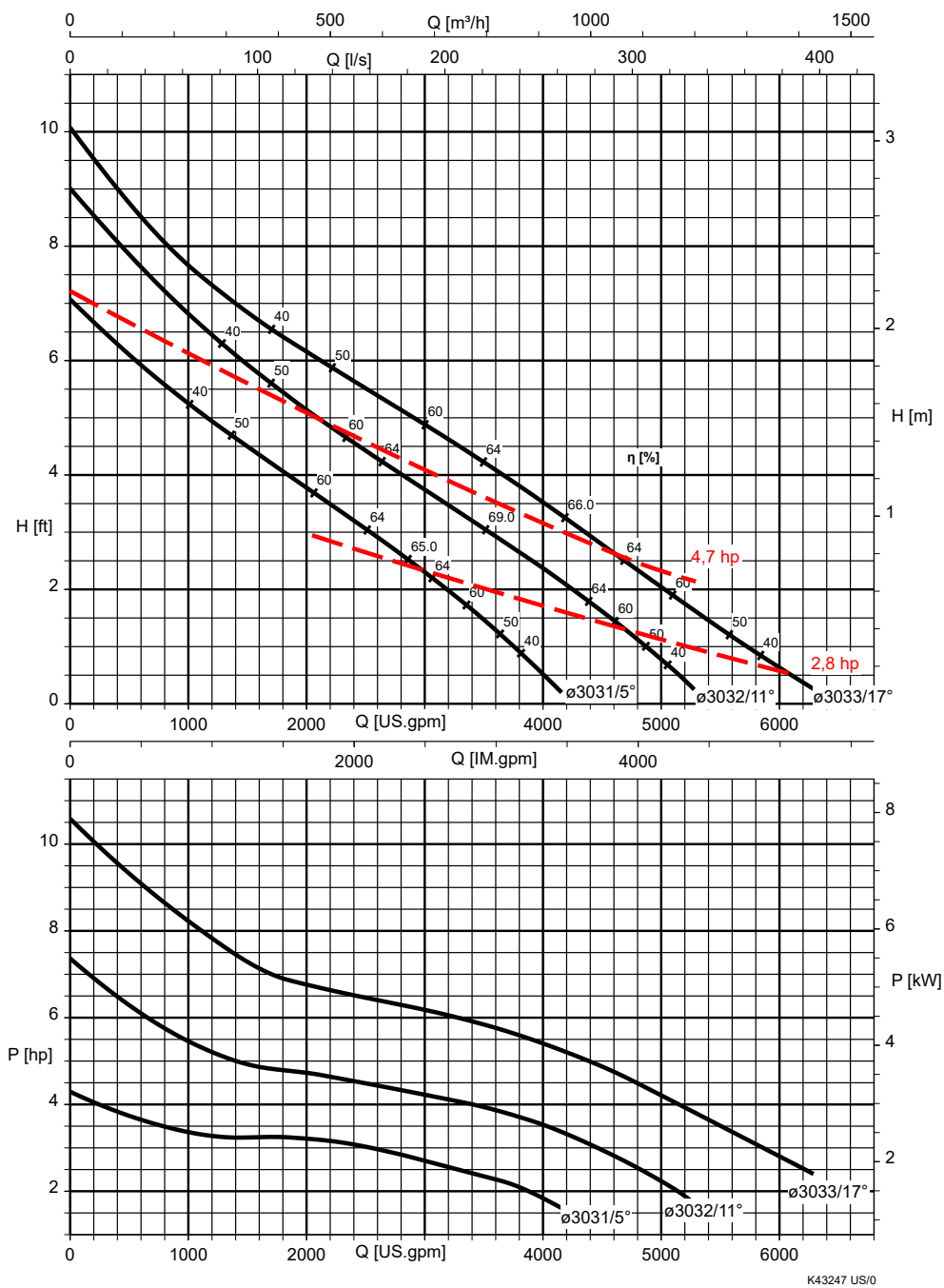


Free passage = 3 15/16" [100 mm]

Table 23: Speed n_n and motor rating P_2

Size	n_n	P_2	
	[rpm]	[hp]	[kW]
3021-1160/06UDG/XDG/UDC/XDC	1160	2,8	2,09
3021-1160/26UDG/XDG/UDC/XDC	1160	4,7	3,51
3022-1160/06UDG/XDG/UDC/XDC	1160	2,8	2,09
3022-1160/26UDG/XDG/UDC/XDC	1160	4,7	3,51

Amaline 303_, n = 1160 rpm, motors: 0 6, 2 6

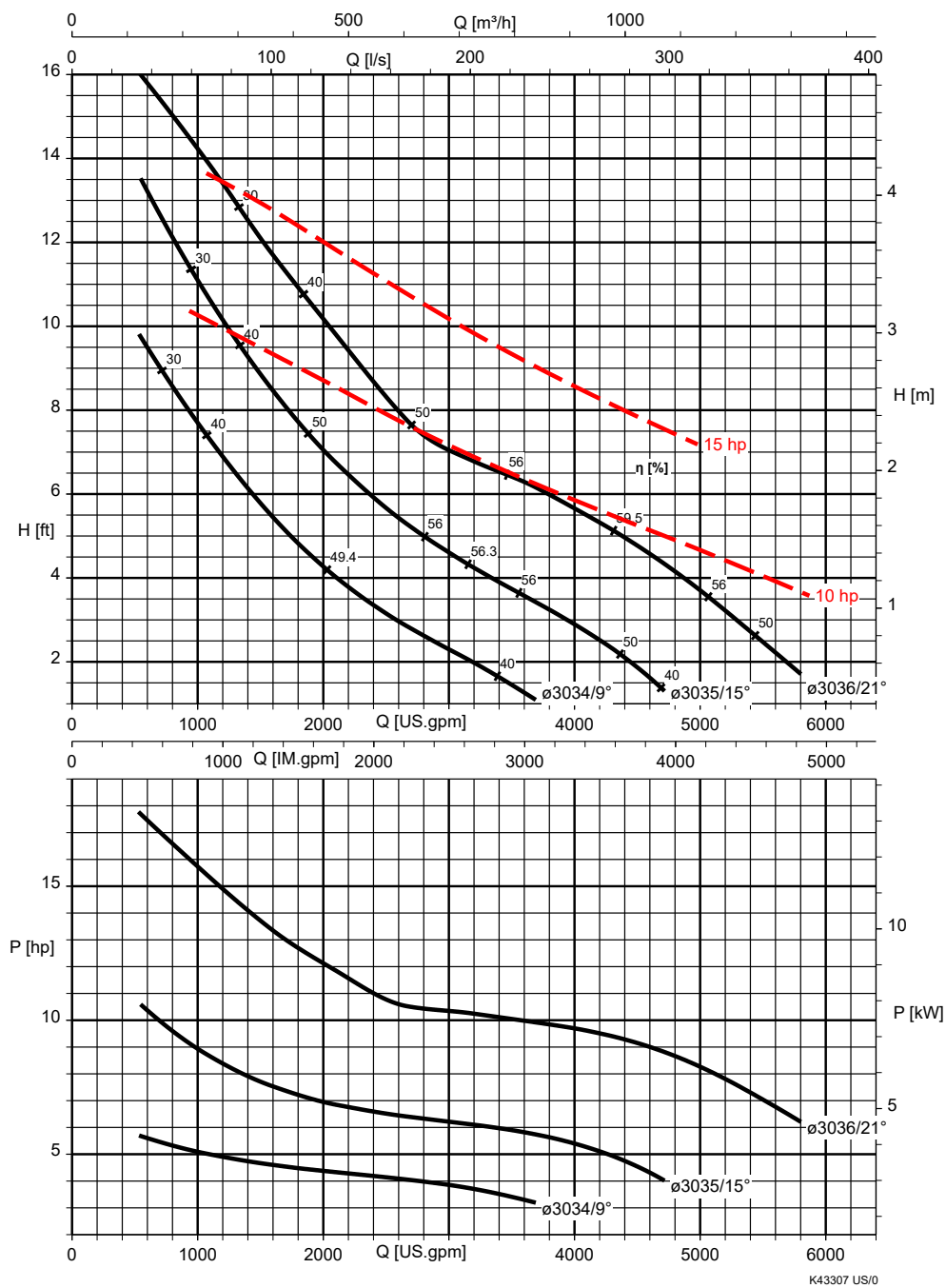


Free passage = 3 15/16" [100 mm]

Table 24: Speed n_n and motor rating P_2

Size	n_n	P_2	
	[rpm]	[hp]	[kW]
3031-1160/06UDG/XDG/UDC/XDC	1160	2,8	2,09
3031-1160/26UDG/XDG/UDC/XDC	1160	4,7	3,51
3032-1160/26UDG/XDG/UDC/XDC	1160	4,7	3,51
3033-1160/26UDG/XDG/UDC/XDC	1160	4,7	3,51

Amaline 303_, n = 1160 rpm, motors: 8 6, 12 6

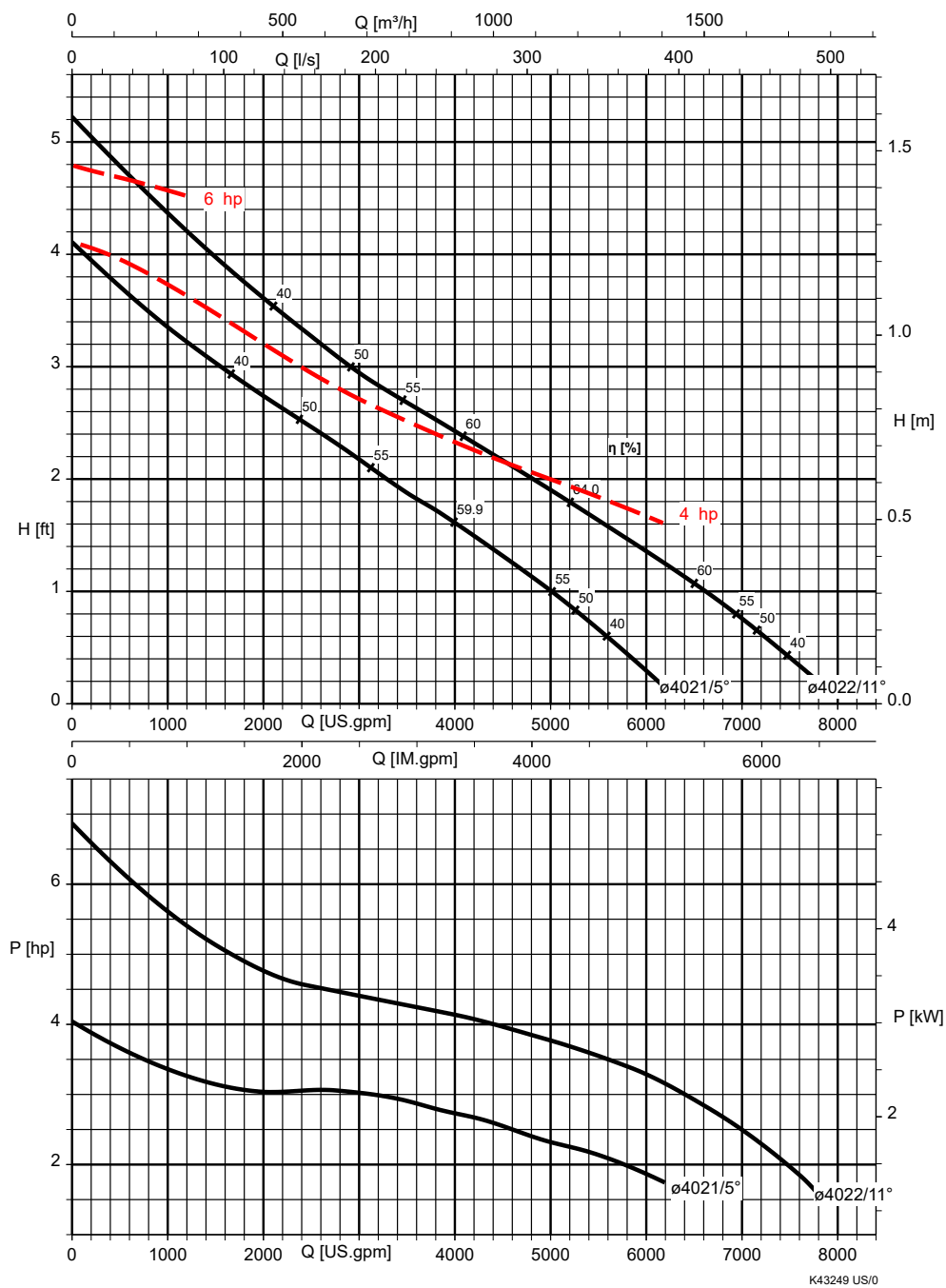


Free passage = 3 1/8" [80 mm]

Table 25: Speed n_n and motor rating P_2

Size	n_n	P_2	
	[rpm]	[hp]	[kW]
3034-1160/86UDG/XDG	1160	10	7,46
3035-1160/86UDG/XDG	1160	10	7,46
3035-1160/126UDG/XDG	1160	15	11,19
3036-1160/126UDG/XDG	1160	15	11,19

Amaline 402_, n = 875 rpm, motors: 3 8, 4 8

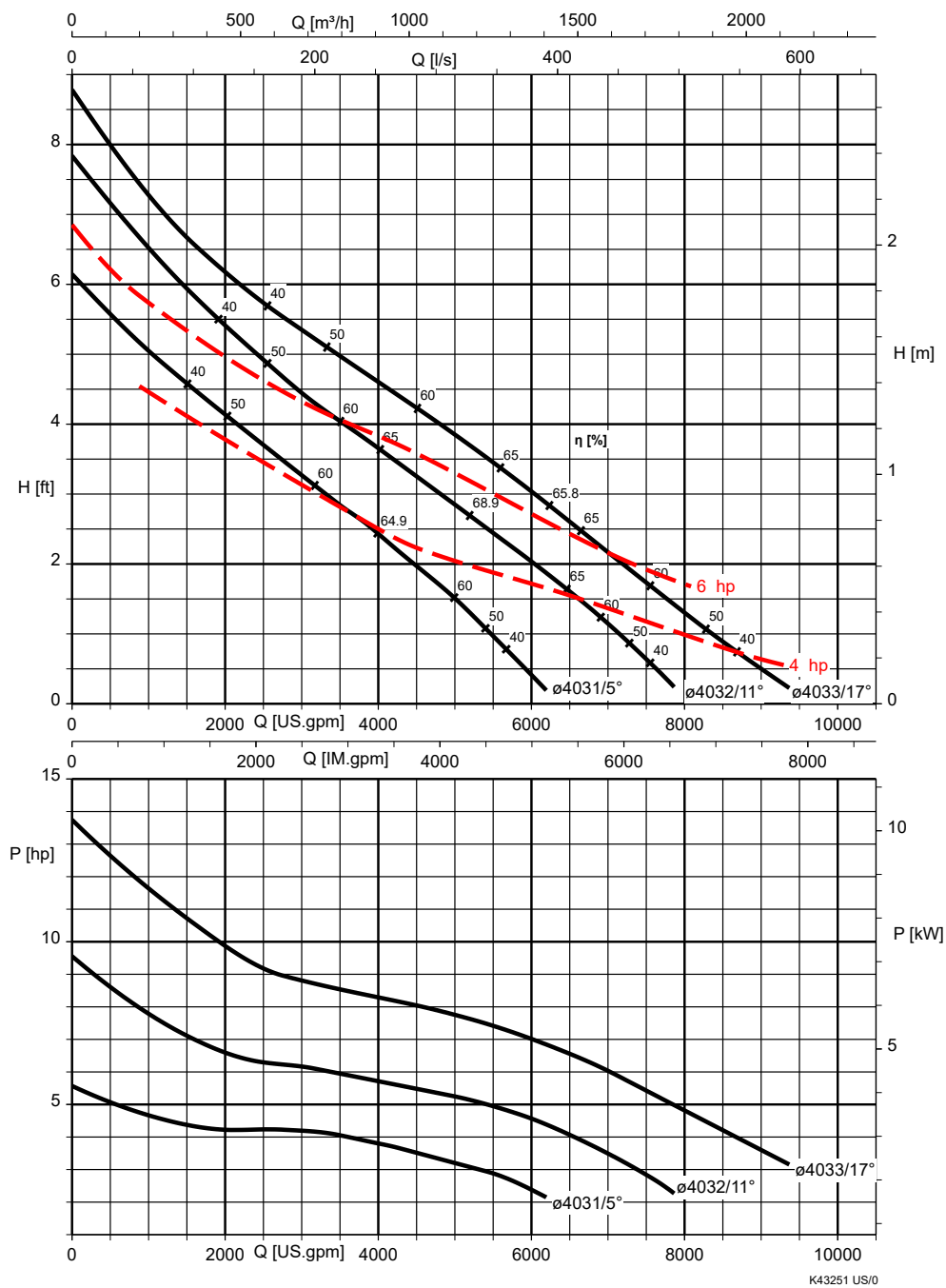


Free passage = 4 3/4" [120 mm]

Table 26: Speed n_n and motor rating P_2

Size	n_n	P_2	
	[rpm]	[hp]	[kW]
4021-875/38UDG/XDG/UDC/XDC	875	4,00	2,98
4021-875/48UDG/XDG/UDC/XDC	875	6,00	4,48
4022-875/38UDG/XDG/UDC/XDC	875	4,00	2,98
4022-875/48UDG/XDG/UDC/XDC	875	6,00	4,48

Amaline 403_, n = 875 rpm, motors: 3 8, 4 8

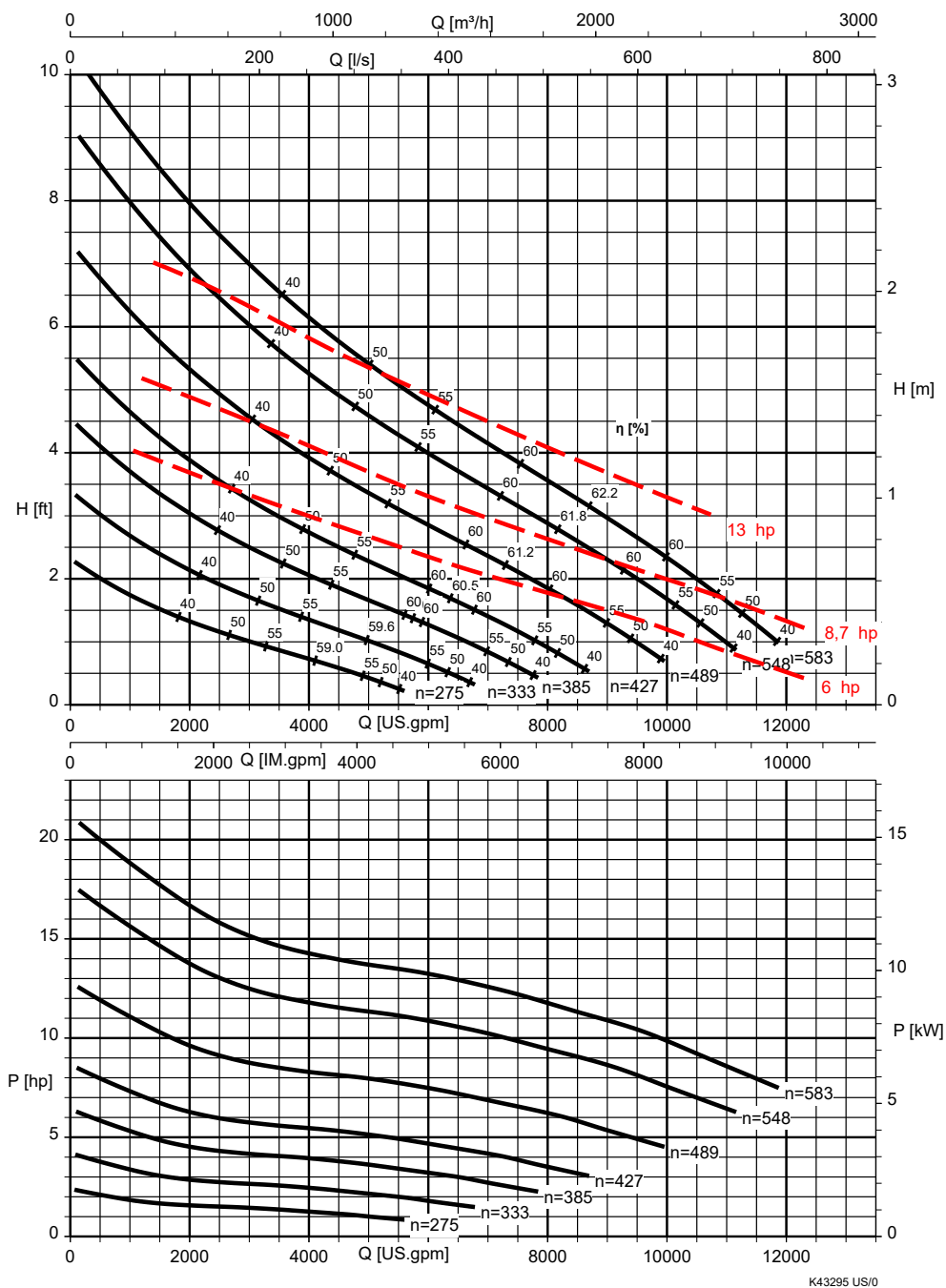


Free passage = 4 3/4" [120 mm]

Table 27: Speed n_n and motor rating P_2

Size	n_n	P_2	
	[rpm]	[hp]	[kW]
4031-875/38UDG/XDG/UDC/XDC	875	4,00	2,98
4031-875/48UDG/XDG/UDC/XDC	875	6,00	4,48
4032-875/48UDG/XDG/UDC/XDC	875	6,00	4,48
4033-875/48UDG/XDG/UDC/XDC	875	6,00	4,48

Amaline 5033-___, n = 583 - 275 rpm, motors: 4 4, 6 4, 11 4



Free passage = 5 1/2" [140 mm]

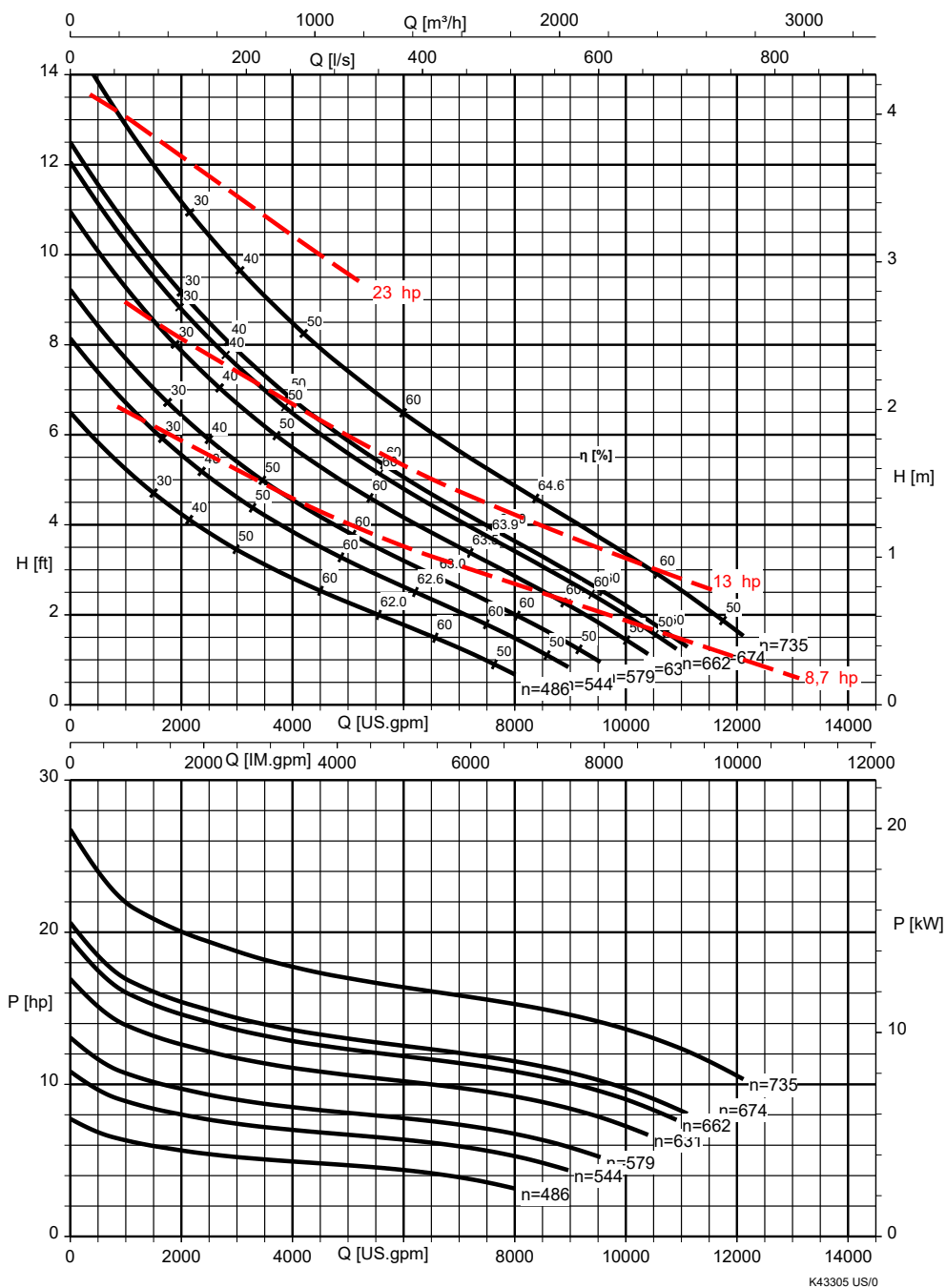
Table 28: Speed $n_{eff.}$ and motor rating P_2

Size	$n_{eff.}$ [rpm]	P_2		Gear unit	$i^{(20)}$
		[hp]	[kW]		
5033-275/44URG/XRG	275	6	4,5	SP189	6,356
5033-333/44URG/XRG	333	6	4,5	SP189	5,25
5033-385/44URG/XRG	385	6	4,5	SP189	4,545
5033-427/44URG/XRG	427	6	4,5	SP189	4,143
5033-427/64URG/XRG	427	8,7	6,5	SP189	4,143
5033-489/44URG/XRG	489	6	4,5	SP189	3,618
5033-489/64URG/XRG	489	8,7	6,5	SP189	3,618
5033-489/114URG/XRG	489	13	10	SP189	3,618

Size	$n_{eff.}$ [rpm]	P_2		Gear unit	$i^{(20)}$
		[hp]	[kW]		
5033-548/64URG/XRG	548	8,7	6,5	SP189	3,232
5033-548/114URG/XRG	548	13	10	SP189	3,232
5033-583/64URG/XRG	583	8,7	6,5	SP189	3,036
5033-583/114URG/XRG	583	13	10	SP189	3,036

20 Transmission ratio

Amaline 5035-___, n = 735 - 486 rpm, motors: 17 2, 6 4, 11 4



Free passage = 5 1/2" [140 mm]

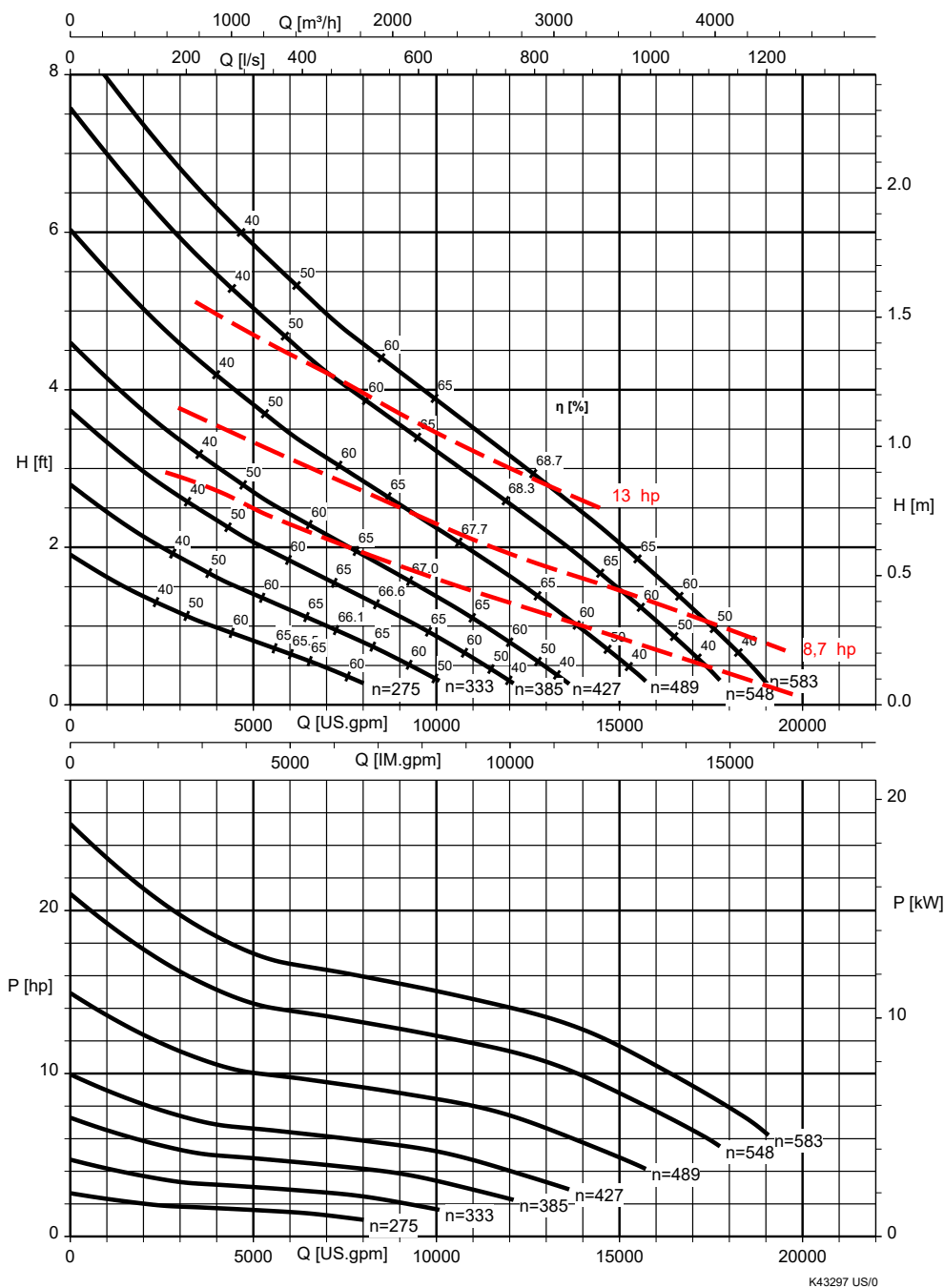
Table 29: Speed $n_{eff.}$ and motor rating P_2

Size	$n_{eff.}$ [rpm]	P_2		Gear unit	$i^{(21)}$
		[hp]	[kW]		
5035-486/64URG/XRG	486	8,7	6,5	SP189	3,618
5035-544/64URG/XRG	544	8,7	6,5	SP189	3,232
5035-579/64URG/XRG	579	8,7	6,5	SP189	3,036
5035-579/114URG/XRG	579	13	10	SP189	3,036
5035-631/64URG/XRG	631	8,7	6,5	SP189	2,784
5035-631/114URG/XRG	631	13	10	SP189	2,784

Size	$n_{eff.}$ [rpm]	P_2		Gear unit	$i^{(21)}$
		[hp]	[kW]		
5035-662/172URG/XRG	662	23	17	SP190	5,396
5035-674/172URG/XRG	674	23	17	SP190	5,294
5035-735/172URG/XRG	735	23	17	SP190	4,856

²¹ Transmission ratio

Amaline 6032-___, n = 583 - 275 rpm, motors: 4 4, 6 4, 11 4



Free passage = 7 7/8" [200 mm]

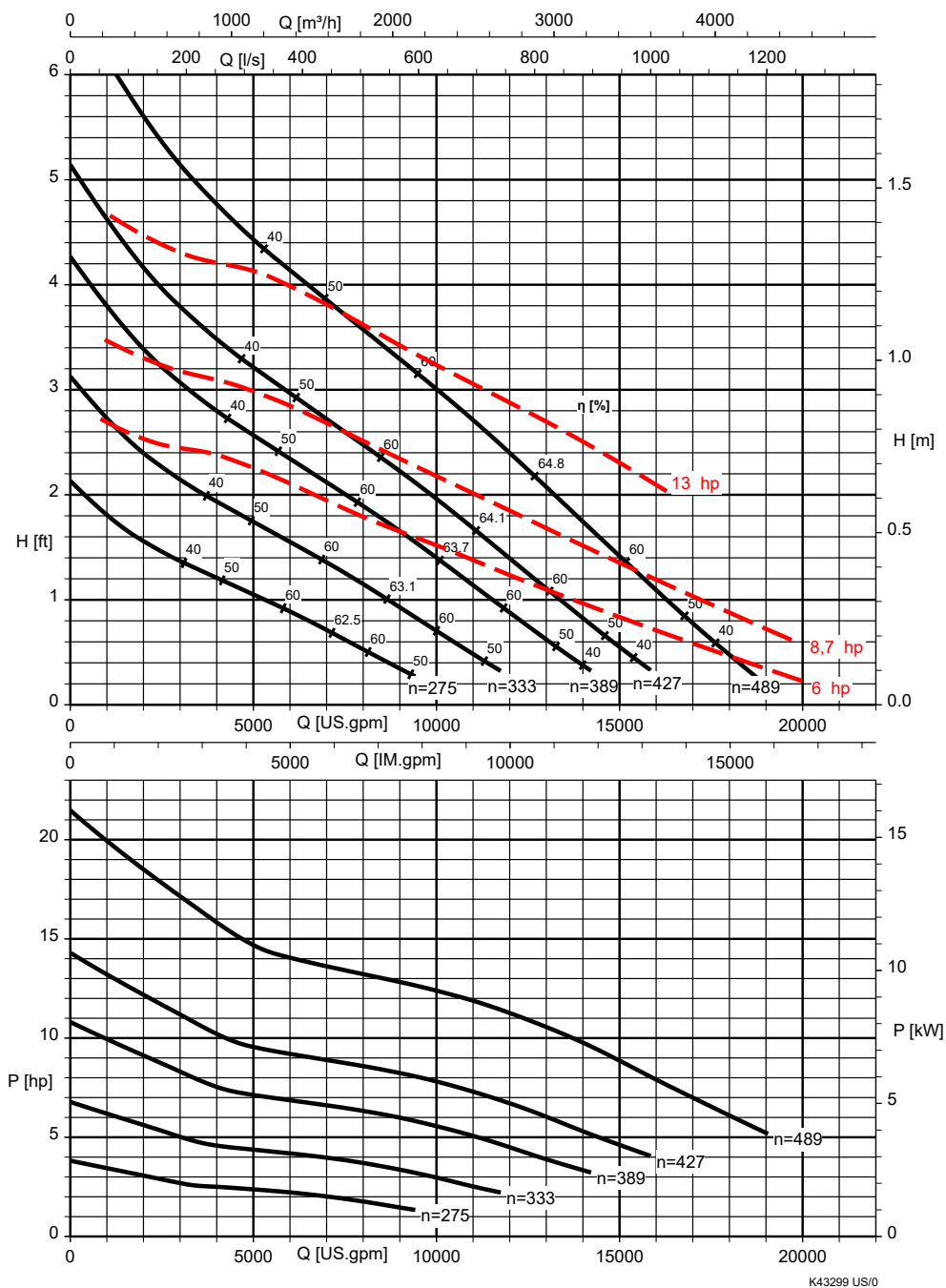
Table 30: Speed $n_{eff.}$ and motor rating P_2

Size	$n_{eff.}$ [rpm]	P_2		Gear unit	$i^{(22)}$
		[hp]	[kW]		
6032-275/44URG/XRG	275	6	4,5	SP189	6,356
6032-333/44URG/XRG	333	6	4,5	SP189	5,25
6032-385/44URG/XRG	385	6	4,5	SP189	4,545
6032-427/44URG/XRG	427	6	4,5	SP189	4,143
6032-427/64URG/XRG	427	8,7	6,5	SP189	4,143
6032-427/114URG/XRG	427	13	10	SP189	4,143
6032-489/44URG/XRG	489	6	4,5	SP189	3,618
6032-489/64URG/XRG	489	8,7	6,5	SP189	3,618

Size	$n_{eff.}$ [rpm]	P_2		Gear unit	$i^{(22)}$
		[hp]	[kW]		
6032-489/114URG/XRG	489	13	10	SP189	3,618
6032-548/64URG/XRG	548	8,7	6,5	SP189	3,232
6032-548/114URG/XRG	548	13	10	SP189	3,232
6032-583/64URG/XRG	583	8,7	6,5	SP189	3,036
6032-583/114URG/XRG	583	13	10	SP189	3,036

22 Transmission ratio

Amaline 6033-___, n = 583 - 275 rpm, motors: 4 4, 6 4, 11 4



Free passage = 7 7/8" [200 mm]

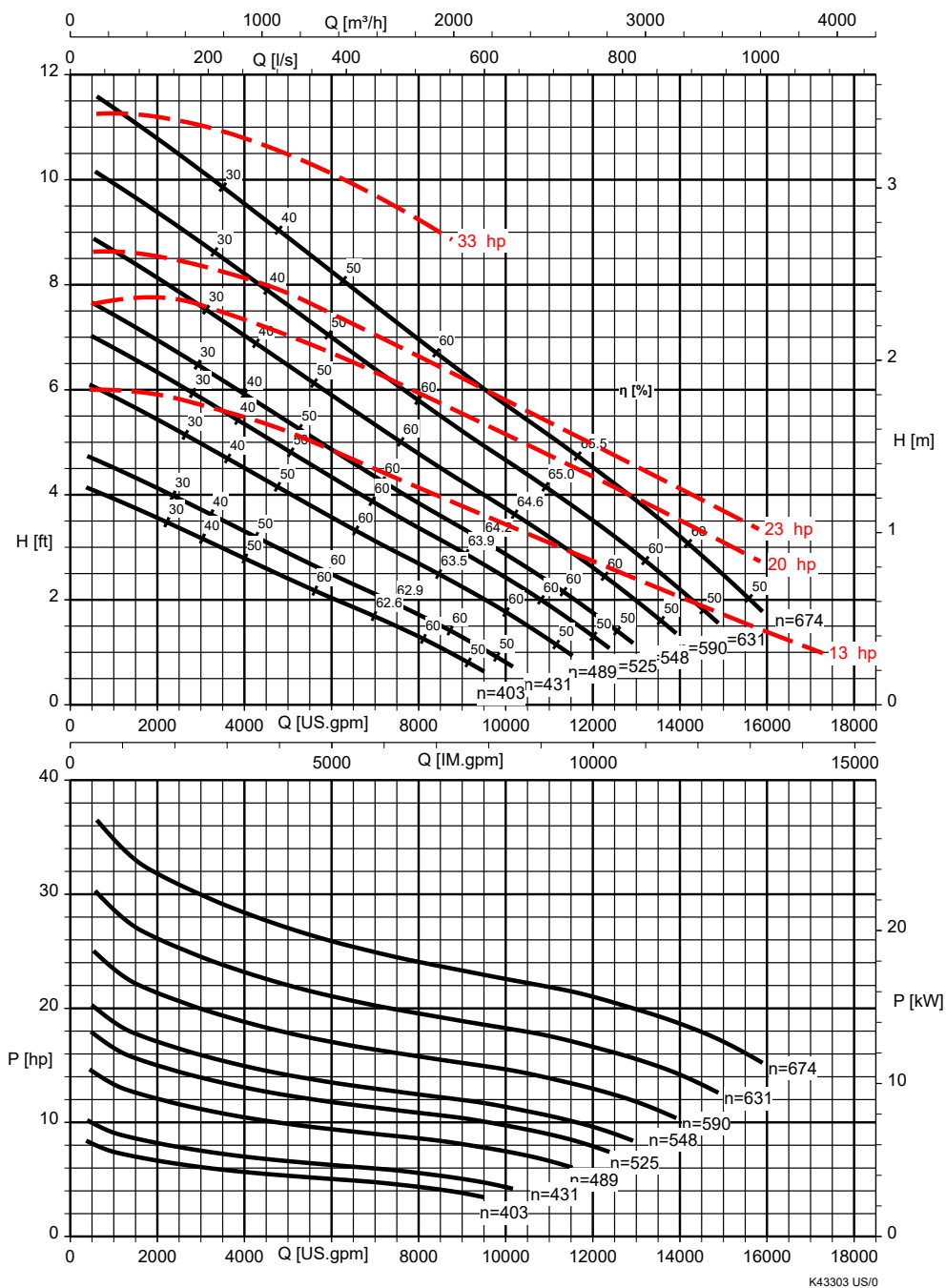
Table 31: Speed $n_{eff.}$ and motor rating P_2

Size	$n_{eff.}$ [rpm]	P_2		Gear unit	$i^{(23)}$
		[hp]	[kW]		
6033-275/44URG/XRG	275	6	4,5	SP189	6,356
6033-333/44URG/XRG	333	6	4,5	SP189	5,25
6033-389/44URG/XRG	389	6	4,5	SP189	4,545
6033-389/64URG/XRG	389	8,7	6,5	SP189	4,545
6033-427/44URG/XRG	427	6	4,5	SP189	4,143
6033-427/64URG/XRG	427	8,7	6,5	SP189	4,143
6033-427/114URG/XRG	427	13	10	SP189	4,143
6033-489/64URG/XRG	489	8,7	6,5	SP189	3,618

Size	$n_{eff.}$ [rpm]	P_2		Gear unit	$i^{(23)}$
		[hp]	[kW]		
6033-489/114URG/XRG	489	13	10	SP189	3,618
6033-548/114URG/XRG	548	13	10	SP189	3,232
6033-583/114URG/XRG	583	13	10	SP189	3,036

23 Transmission ratio

Amaline 6035-___, n = 674 - 403 rpm, motors: 17 2, 25 2, 11 4, 16 4



Free passage = 7 7/8" [200 mm]

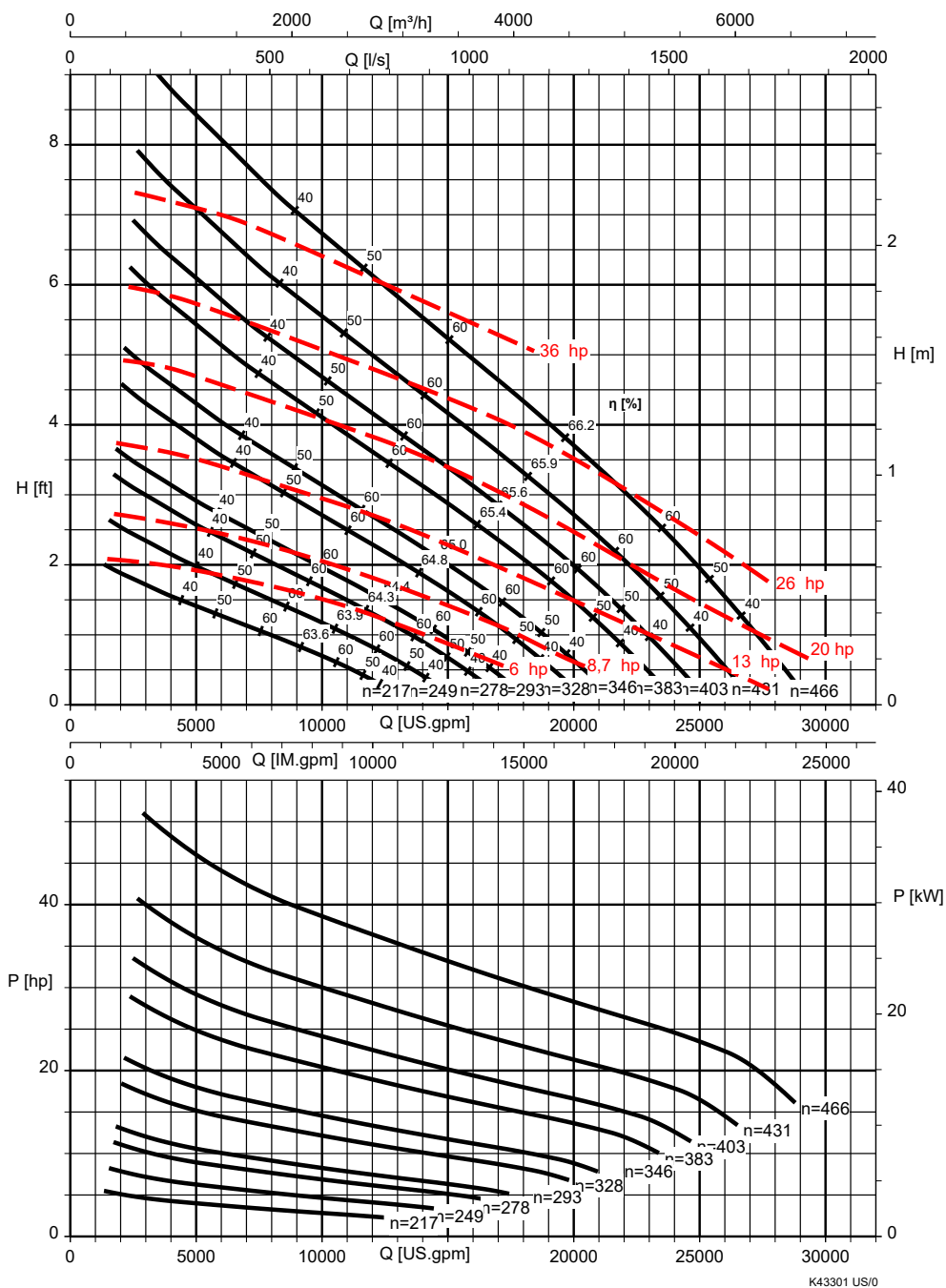
Table 32: Speed $n_{eff.}$ and motor rating P_2

Size	$n_{eff.}$ [rpm]	P_2		Gear unit	$i^{(24)}$
		[hp]	[kW]		
6035-403/164URG/XRG	403	20	15	SP190	4,392
6035-431/164URG/XRG	431	20	15	SP190	4,104
6035-489/114URG/XRG	489	13	10	SP189	3,618
6035-525/164URG/XRG	525	20	15	SP190	3,384
6035-548/114URG/XRG	548	13	10	SP189	3,232
6035-590/172URG/XRG	590	23	17	SP190	6,051
6035-590/252URG/XRG	590	33	25	SP190	6,051
6035-631/172URG/XRG	631	23	17	SP190	5,654

Size	$n_{eff.}$ [rpm]	P_2		Gear unit	$i^{(24)}$
		[hp]	[kW]		
6035-631/252URG/XRG	631	33	25	SP190	5,654
6035-674/172URG/XRG	674	23	17	SP190	5,294
6035-674/252URG/XRG	674	33	25	SP190	5,294

²⁴ Transmission ratio

Amaline 8032-___, n = 466 - 249 rpm, motors: 4 4, 11 4, 16 4, 23 4, 30 4



Free passage = 10 1/4" [260 mm]

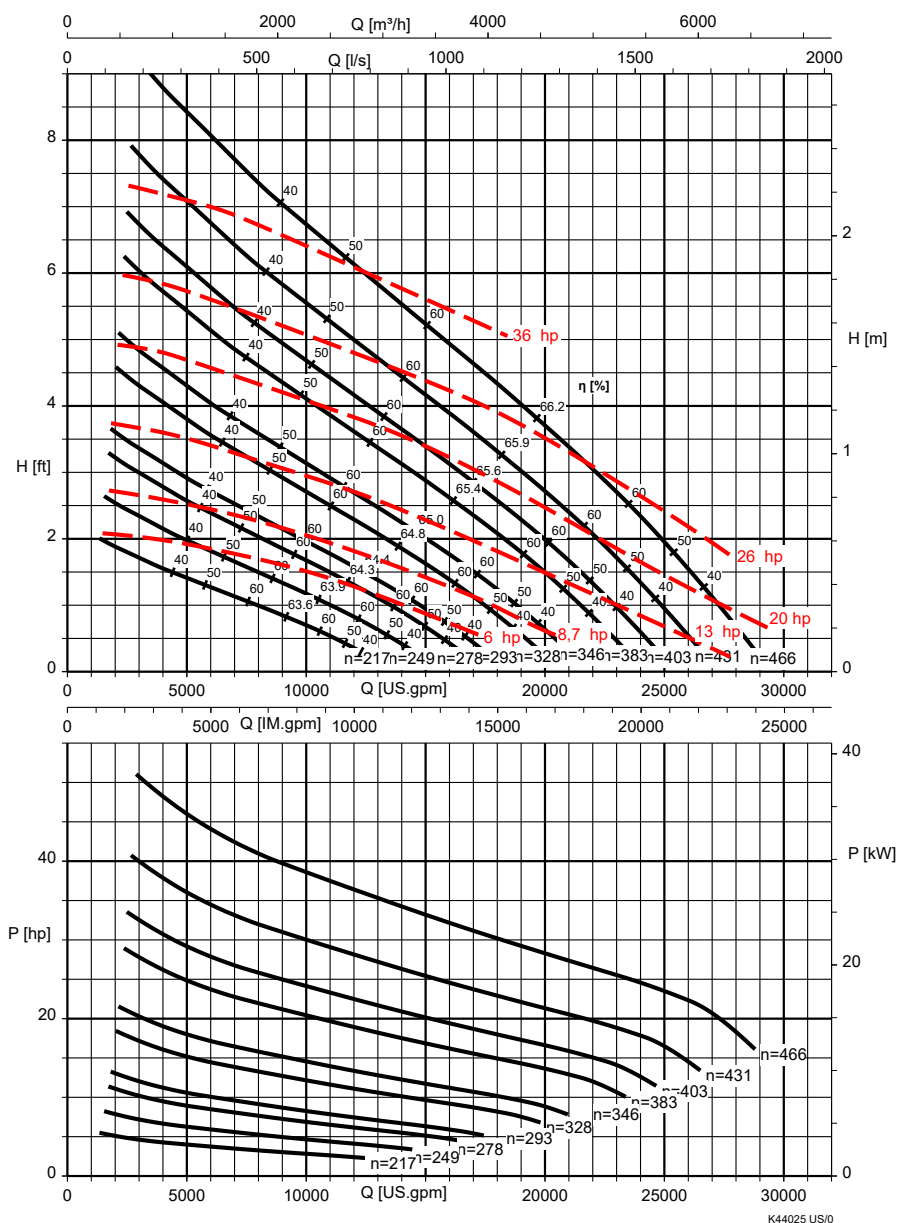
Table 33: Speed $n_{eff.}$ and motor rating P_2

Size	$n_{eff.}$ [rpm]	P_2		Drive with gear unit	$i^{25)}$
		[hp]	[kW]		
8032-217/44URG/XRG	217	6	4,5	SP189	8,148
8032-249/44URG/XRG	249	6	4,5	SP189	7,116
8032-249/64URG/XRG	249	8,7	6,5	SP189	7,116
8032-278/64URG/XRG	278	8,7	6,5	SP189	6,356
8032-278/114URG/XRG	278	13	10	SP189	6,356
8032-293/164URG/XRG	293	20	15	SP190	6,051
8032-328/164URG/XRG	328	20	15	SP190	5,396
8032-346/164URG/XRG	346	20	15	SP190	5,112

Size	$n_{eff.}$ [rpm]	P_2		Drive with gear unit	$i^{25)}$
		[hp]	[kW]		
8032-383/164URG/XRG	383	20	15	SP190	4,616
8032-383/234URG/XRG	383	26	20	SP190	4,616
8032-403/234URG/XRG	403	26	20	SP190	4,392
8032-403/304URG/XRG	403	36	27	SP190	4,392
8032-431/234URG/XRG	431	26	20	SP190	4,104
8032-431/304URG/XRG	431	36	27	SP190	4,104
8032-466/234URG/XRG	466	26	20	SP190	3,797
8032-466/304URG/XRG	466	36	27	SP190	3,797

25 Transmission ratio

Amaline 8038-___, n = 466 - 249 rpm, motors: 4 4, 11 4, 16 4, 23 4, 30 4



Free passage = 10 1/4" [260 mm]

Table 34: Speed $n_{eff.}$ and motor rating P_2

Size	$n_{eff.}$	P_2		Drive with gear unit	$i^{26)}$
	[rpm]	[hp]	[kW]		
8038-217/44URG/XRG ²⁷⁾	217	6	4,5	SP189	8,148
8038-249/44URG/XRG ²⁷⁾	249	6	4,5	SP189	7,116
8038-249/64URG/XRG ²⁷⁾	249	8,7	6,5	SP189	7,116
8038-278/64URG/XRG ²⁷⁾	278	8,7	6,5	SP189	6,356
8038-278/114URG/XRG ²⁷⁾	278	13	10	SP189	6,356
8038-293/164URG/XRG ²⁷⁾	293	20	15	SP190	6,051
8038-328/164URG/XRG ²⁷⁾	328	20	15	SP190	5,396
8038-346/164URG/XRG ²⁷⁾	346	20	15	SP190	5,112
8038-383/164URG/XRG ²⁷⁾	383	20	15	SP190	4,616
8038-383/234URG/XRG ²⁷⁾	383	26	20	SP190	4,616
8038-403/234URG/XRG ²⁷⁾	403	26	20	SP190	4,392
8038-403/304URG/XRG ²⁷⁾	403	36	27	SP190	4,392

Size	$n_{eff.}$	P_2		Drive with gear unit	$i^{27)}$
	[rpm]	[hp]	[kW]		
8038-431/234URG/XRG ²⁷⁾	431	26	20	SP190	4,104
8038-431/304URG/XRG ²⁷⁾	431	36	27	SP190	4,104
8038-466/234URG/XRG ²⁷⁾	466	26	20	SP190	3,797
8038-466/304URG/XRG ²⁷⁾	466	36	27	SP190	3,797

²⁷⁾ Axial propeller suitable for problematic waste water containing long fibers

²⁷⁾ Transmission ratio

Dimensions

Amaline 200, 300, 400; motor housing made of gray cast iron

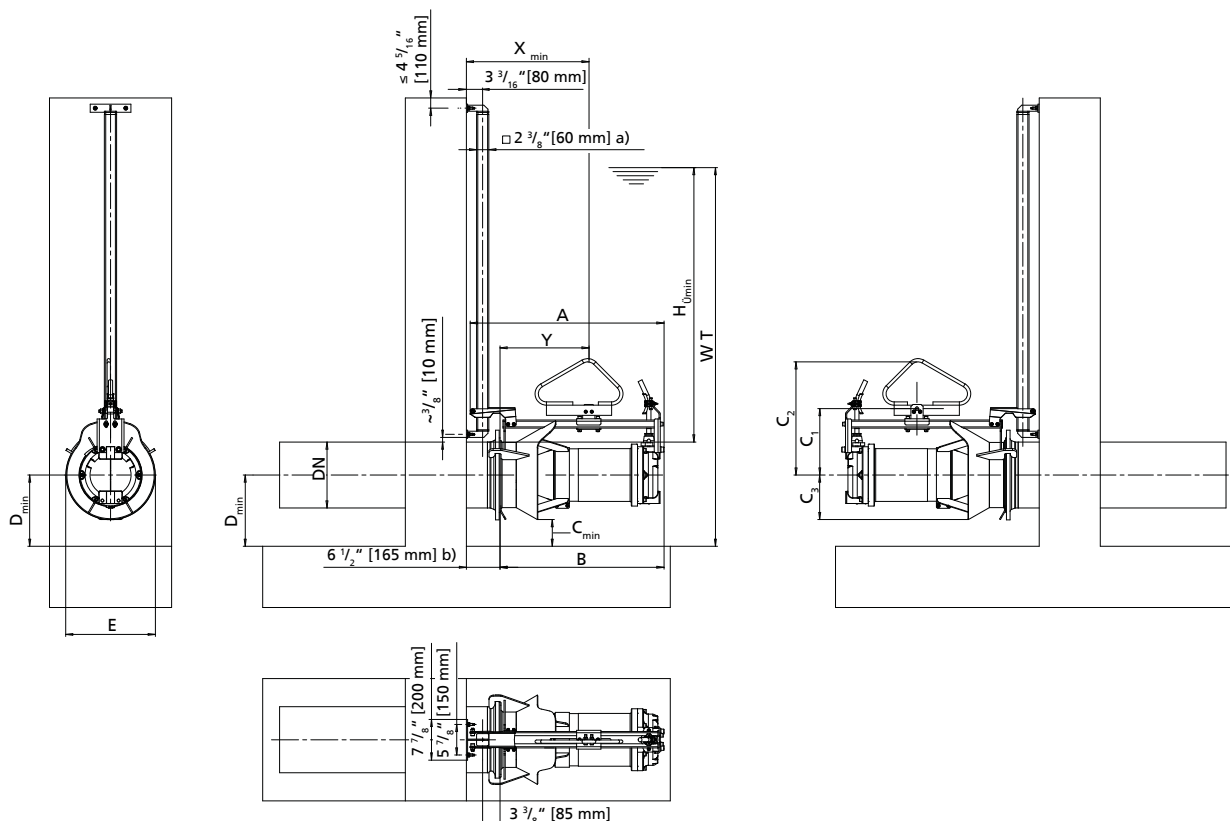


Fig. 9: Dimensions of an Amaline 200, 300, 400; motor housing made of gray cast iron

a)	For the US market: $\square 2'' [50 \text{ mm}]$
b)	Minimum

The tolerances of the connection pipe (flange diameter and flange thickness) must be observed to ensure smooth functioning. If required, the flanges must be reworked prior to installation. (⇒ Page 40)

Table 35: Dimensions ["]

Size	DN	A	B	C _{min}	C ₁	C ₂	C ₃	D _{min}	E	H _{smin}	W _T	X _{min}	Y	[lbs]
Amaline 200														
2021-1750/24	8	27 ¹⁵ / ₁₆	23 ³ / ₈	4 ⁷ / ₁₆	7 ⁵ / ₈	14 ⁵ / ₁₆	6 ⁵ / ₈	11	13 ¹ / ₁₆	15 ³ / ₄	30 ¹¹ / ₁₆	18 ¹ / ₂	12	103
2034-1750/24	8	27 ¹⁵ / ₁₆	23 ³ / ₈	4 ⁷ / ₁₆	7 ⁵ / ₈	14 ⁵ / ₁₆	6 ⁵ / ₈	11	13 ¹ / ₁₆	15 ³ / ₄	30 ¹¹ / ₁₆	18 ¹ / ₂	12	103
Amaline 300														
3021-1160/06	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	129
3021-1160/26	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	129
3022-1160/06	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	129
3022-1160/26	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	129
3031-1160/06	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	129
3031-1160/26	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	129
3032-1160/26	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	129
3033-1160/26	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	129
3034-1160/86	12	37 ³ / ₈	31 ⁵ / ₈	5 ¹ / ₈	12 ¹³ / ₁₆	21 ⁷ / ₈	8 ¹¹ / ₁₆	13 ³ / ₄	17 ¹ / ₄	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	373
3035-1160/86	12	37 ³ / ₈	31 ⁵ / ₈	5 ¹ / ₈	12 ¹³ / ₁₆	21 ⁷ / ₈	8 ¹¹ / ₁₆	13 ³ / ₄	17 ¹ / ₄	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	373
3035-1160/126	12	37 ³ / ₈	31 ⁵ / ₈	5 ¹ / ₈	12 ¹³ / ₁₆	21 ⁷ / ₈	8 ¹¹ / ₁₆	13 ³ / ₄	17 ¹ / ₄	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	15 ³ / ₈	386
3036-1160/126	12	37 ³ / ₈	31 ⁵ / ₈	5 ¹ / ₈	12 ¹³ / ₁₆	21 ⁷ / ₈	8 ¹¹ / ₁₆	13 ³ / ₄	17 ¹ / ₄	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	15 ³ / ₈	386
Amaline 400														
4021-875/38	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	204
4021-875/48	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	204
4022-875/38	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	204
4022-875/48	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	204
4031-875/38	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	204

Size	DN	A	B	C _{min}	C ₁	C ₂	C ₃	D _{min}	E	Hs _{min}	W _T	X _{min}	Y	[lbs]
4031-875/48	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	204
4032-875/48	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	204
4033-875/48	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	204

Table 36: Dimensions [mm]

Size	DN	A	B	C _{min}	C ₁	C ₂	C ₃	D _{min}	E	Hs _{min}	W _T	X _{min}	Y	[kg]
Amaline 200														
2021-1750/24	200	709	568	112	193	363	168	280	331	400	780	305	470	47
2034-1750/24	200	709	568	112	193	363	168	280	331	400	780	305	470	47
Amaline 300														
3021-1160/06	300	778	637	130	243	413	220	350	436	500	1000	545	380	58,5
3021-1160/26	300	778	637	130	243	413	220	350	436	500	1000	545	380	58,5
3022-1160/06	300	778	637	130	243	413	220	350	436	500	1000	545	380	58,5
3022-1160/26	300	778	637	130	243	413	220	350	436	500	1000	545	380	58,5
3031-1160/06	300	778	637	130	243	413	220	350	436	500	1000	545	380	58,5
3031-1160/26	300	778	637	130	243	413	220	350	436	500	1000	545	380	58,5
3032-1160/26	300	778	637	130	243	413	220	350	436	500	1000	545	380	58,5
3033-1160/26	300	778	637	130	243	413	220	350	436	500	1000	545	380	58,5
3034-1160/86	300	950	804	131	326	556	219	350	438	500	1000	545	380	169,5
3035-1160/86	300	950	804	131	326	556	219	350	438	500	1000	545	380	169,5
3035-1160/126	300	950	804	131	326	556	219	350	438	500	1000	555	390	175,5
3036-1160/126	300	950	804	131	326	556	219	350	438	500	1000	555	390	175,5
Amaline 400														
4021-875/38	400	867	726	135	283	498	265	400	524	600	1200	605	440	92,5
4021-875/48	400	867	726	135	283	498	265	400	524	600	1200	605	440	92,5
4022-875/38	400	867	726	135	283	498	265	400	524	600	1200	605	440	92,5
4022-875/48	400	867	726	135	283	498	265	400	524	600	1200	605	440	92,5
4031-875/38	400	867	726	135	283	498	265	400	524	600	1200	605	440	92,5
4031-875/48	400	867	726	135	283	498	265	400	524	600	1200	605	440	92,5
4032-875/48	400	867	726	135	283	498	265	400	524	600	1200	605	440	92,5
4033-875/48	400	867	726	135	283	498	265	400	524	600	1200	605	440	92,5

Amaline 200, 300, 400; motor housing made of stainless steel

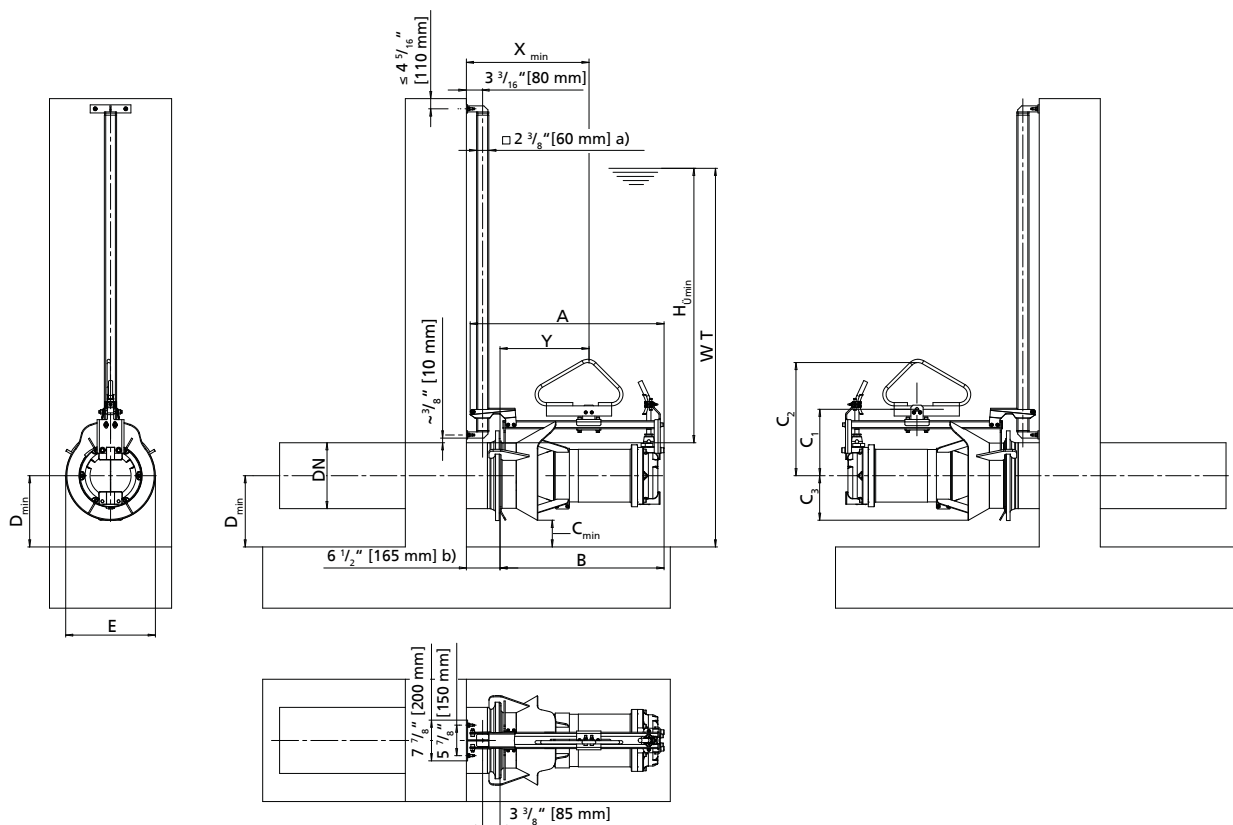


Fig. 10: Dimensions of an Amaline 200, 300, 400; motor housing made of stainless steel

a) For the US market: □ 2" [50 mm]
b) Minimum

The tolerances of the connection pipe (flange diameter and flange thickness) must be observed to ensure smooth functioning. If required, the flanges must be reworked prior to installation. (⇒ Page 40)

Table 37: Dimensions ["]

Size	DN	A	B	C _{min}	C ₁	C ₂	C ₃	D _{min}	E	H _{min}	W _T	X _{min}	Y	[lbs]
Amaline 200														
2021-1750/24	8	27 ¹⁵ / ₁₆	23 ³ / ₈	4 ⁷ / ₁₆	7 ⁵ / ₈	14 ⁵ / ₁₆	6 ⁵ / ₈	11	13 ¹ / ₁₆	15 ³ / ₄	30 ¹¹ / ₁₆	18 ¹ / ₂	12	105
2034-1750/24	8	27 ¹⁵ / ₁₆	23 ³ / ₈	4 ⁷ / ₁₆	7 ⁵ / ₈	14 ⁵ / ₁₆	6 ⁵ / ₈	11	13 ¹ / ₁₆	15 ³ / ₄	30 ¹¹ / ₁₆	18 ¹ / ₂	12	105
Amaline 300														
3021-1160/06	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	127
3021-1160/26	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	127
3022-1160/06	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	127
3022-1160/26	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	127
3031-1160/06	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	127
3031-1160/26	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	127
3032-1160/26	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	127
3033-1160/26	12	30 ⁵ / ₈	25 ¹ / ₁₆	5 ¹ / ₈	9 ⁹ / ₁₆	16 ¹ / ₄	8 ¹¹ / ₁₆	13 ³ / ₄	17 ³ / ₁₆	19 ¹¹ / ₁₆	39 ³ / ₈	21 ⁷ / ₁₆	14 ¹⁵ / ₁₆	127
Amaline 400														
4021-875/38	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	199
4021-875/48	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	199
4022-875/38	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	199
4022-875/48	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	199
4031-875/38	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	199
4031-875/48	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	199
4032-875/48	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	199
4033-875/48	16	34 ¹ / ₈	28 ⁹ / ₁₆	5 ⁵ / ₁₆	11 ¹ / ₈	19 ⁵ / ₈	10 ⁷ / ₁₆	15 ³ / ₄	20 ⁵ / ₈	23 ⁵ / ₈	47 ¹ / ₄	23 ¹³ / ₁₆	17 ⁵ / ₁₆	199

Table 38: Dimensions [mm]

Size	DN	A	B	C _{min}	C ₁	C ₂	C ₃	D _{min}	E	Hs _{min}	W _T	X _{min}	Y	[kg]
Amaline 200														
2021-1750/24	200	707	566	112	193	363	168	280	332	400	780	470	305	47,5
2034-1750/24	200	707	566	112	193	363	168	280	332	400	780	470	305	47,5
Amaline 300														
3021-1160/06	300	778	637	130	243	413	220	350	436	500	1000	545	380	57,7
3021-1160/26	300	778	637	130	243	413	220	350	436	500	1000	545	380	57,7
3022-1160/06	300	778	637	130	243	413	220	350	436	500	1000	545	380	57,7
3022-1160/26	300	778	637	130	243	413	220	350	436	500	1000	545	380	57,7
3031-1160/06	300	778	637	130	243	413	220	350	436	500	1000	545	380	57,7
3031-1160/26	300	778	637	130	243	413	220	350	436	500	1000	545	380	57,7
3032-1160/26	300	778	637	130	243	413	220	350	436	500	1000	545	380	57,7
3033-1160/26	300	778	637	130	243	413	220	350	436	500	1000	545	380	57,7
Amaline 400														
4021-875/38	400	867	726	135	283	498	265	400	524	600	1200	605	440	90,6
4021-875/48	400	867	726	135	283	498	265	400	524	600	1200	605	440	90,6
4022-875/38	400	867	726	135	283	498	265	400	524	600	1200	605	440	90,6
4022-875/48	400	867	726	135	283	498	265	400	524	600	1200	605	440	90,6
4031-875/38	400	867	726	135	283	498	265	400	524	600	1200	605	440	90,6
4031-875/48	400	867	726	135	283	498	265	400	524	600	1200	605	440	90,6
4032-875/48	400	867	726	135	283	498	265	400	524	600	1200	605	440	90,6
4033-875/48	400	867	726	135	283	498	265	400	524	600	1200	605	440	90,6

Amaline 500, 600, 800; motor housing made of gray cast iron

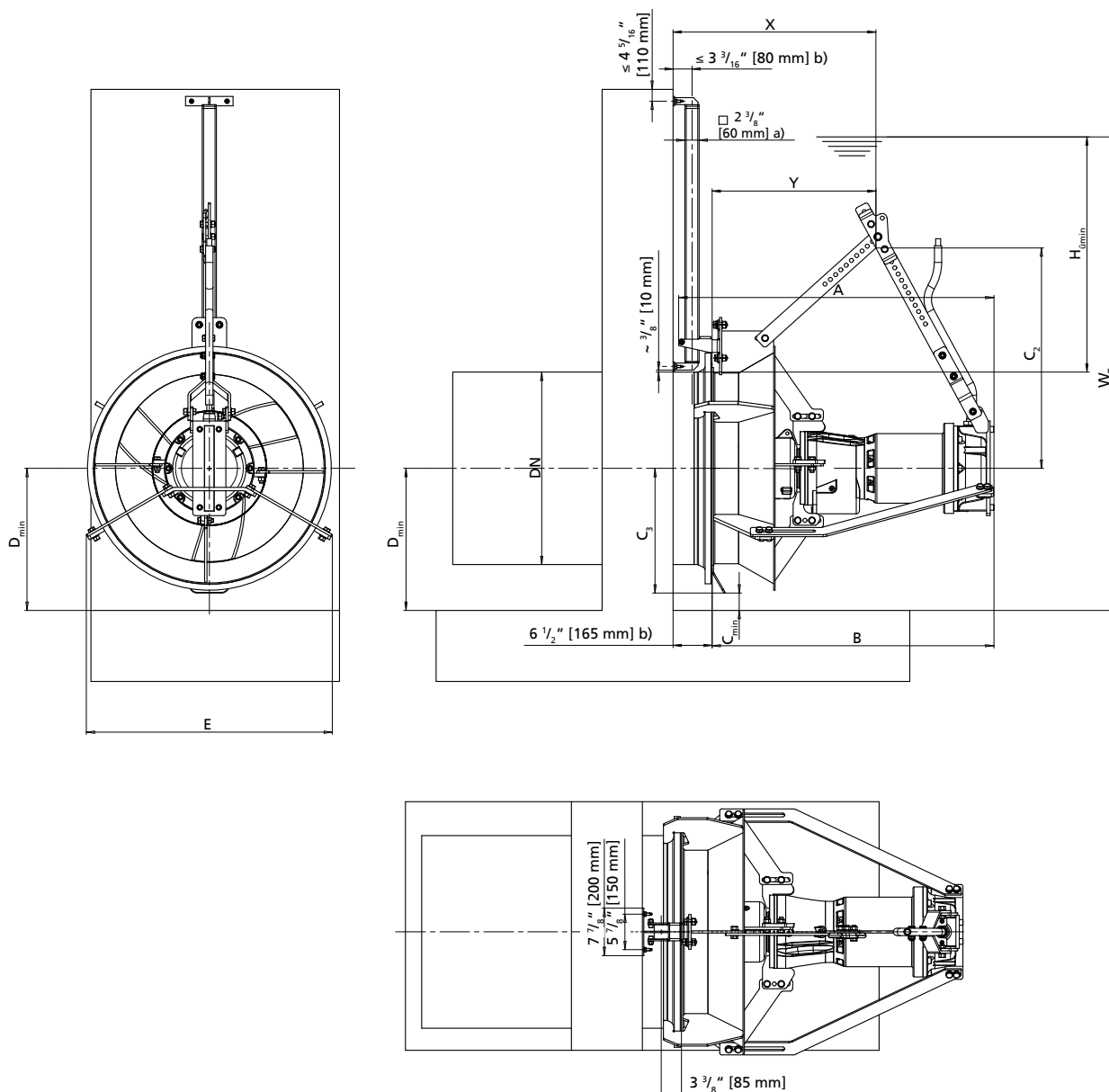


Fig. 11: Dimensions of an Amaline 500, 600, 800; motor housing made of gray cast iron

a)	For the US market: □ 2" [50 mm]
b)	Minimum

The tolerances of the connection pipe (flange diameter and flange thickness) must be observed to ensure smooth functioning. If required, the flanges must be reworked prior to installation. (⇒ Page 40)

Table 39: Dimensions ["]

Size	DN	A	B	C _{min}	C ₂	C ₃	D _{min}	E	H _{ü_{min}}	W _T	X _{min}	Y	[lbs]
Amaline 500													
5033-.../44	20	53	47 7/16	2 3/4	37 3/16	14 15/16	17 11/16	30 1/4	27 9/16	55 1/8	32 1/16	25 9/16	529
5033-.../64	20	56 9/16	51	2 3/4	35 13/16	14 15/16	17 11/16	30 1/4	27 9/16	55 1/8	33 11/16	27 3/16	607
5033-.../114	20	56 9/16	51	2 3/4	35 13/16	14 15/16	17 11/16	30 1/4	27 9/16	55 1/8	33 11/16	27 3/16	607
5035-.../172	20	55 5/16	49 5/16	2 3/4	35 5/8	14 15/16	17 11/16	30 1/4	27 9/16	55 1/8	33 1/16	27 9/16	673
5035-.../64	20	55 5/16	49 5/16	2 3/4	35 5/8	14 15/16	17 11/16	30 1/4	27 9/16	55 1/8	33 1/16	27 9/16	604
5035-.../114	20	55 5/16	49 5/16	2 3/4	35 5/8	14 15/16	17 11/16	30 1/4	27 9/16	55 1/8	33 1/16	27 9/16	604
Amaline 600													
6032-.../44	24	53	47 7/16	2 15/16	38 9/16	16 3/4	19 11/16	33	35 7/16	65 15/16	32 7/8	26 3/8	547
6032-.../64	24	56 9/16	1295	2 15/16	37 3/8	16 3/4	19 11/16	33	35 7/16	65 15/16	33 7/8	27 3/8	625
6032-.../114	24	56 9/16	1295	2 15/16	37 3/8	16 3/4	19 11/16	33	35 7/16	65 15/16	33 7/8	27 3/8	625
6033-.../44	24	53	47 7/16	2 15/16	38 9/16	16 3/4	19 11/16	33	35 7/16	65 15/16	32 7/8	26 3/8	547
6033-.../64	24	56 9/16	51	2 15/16	37 3/8	16 3/4	19 11/16	33	35 7/16	65 15/16	33 7/8	27 3/8	625

Size	DN	A	B	C _{min}	C ₂	C ₃	D _{min}	E	H _{ü_{min}}	W _T	X _{min}	Y	[lbs]
6033-.../114	24	56 ⁹ / ₁₆	51	2 ¹⁵ / ₁₆	37 ³ / ₈	16 ³ / ₄	19 ¹¹ / ₁₆	33	35 ⁷ / ₁₆	65 ¹⁵ / ₁₆	33 ⁷ / ₈	27 ³ / ₈	625
6035-.../172	24	55 ¹ / ₈	49 ⁹ / ₁₆	2 ¹⁵ / ₁₆	37 ³ / ₁₆	16 ³ / ₄	19 ¹¹ / ₁₆	33	35 ⁷ / ₁₆	65 ¹⁵ / ₁₆	32 ¹ / ₁₆	25 ⁹ / ₁₆	693
6035-.../252	24	55 ¹ / ₈	49 ⁹ / ₁₆	2 ¹⁵ / ₁₆	37 ³ / ₁₆	16 ³ / ₄	19 ¹¹ / ₁₆	33	35 ⁷ / ₁₆	65 ¹⁵ / ₁₆	32 ¹ / ₁₆	25 ⁹ / ₁₆	730
6035-.../114	24	53 ⁷ / ₈	48 ³ / ₈	2 ¹⁵ / ₁₆	38 ⁹ / ₁₆	16 ³ / ₄	19 ¹¹ / ₁₆	33	35 ⁷ / ₁₆	65 ¹⁵ / ₁₆	32 ¹ / ₂	26	694
6035-.../164	24	55 ¹ / ₈	49 ⁹ / ₁₆	2 ¹⁵ / ₁₆	37 ³ / ₁₆	16 ³ / ₄	19 ¹¹ / ₁₆	33	35 ⁷ / ₁₆	65 ¹⁵ / ₁₆	32 ¹ / ₁₆	25 ⁹ / ₁₆	694
Amaline 800													
8032-.../44	32	49 ³ / ₄	43 ¹ / ₄	2 ⁷ / ₈	39 ³ / ₈	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	31 ⁵ / ₁₆	24 ¹³ / ₁₆	594
8032-.../64	32	52 ³ / ₈	46 ⁷ / ₈	2 ⁷ / ₈	39 ³ / ₈	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	36 ¹³ / ₁₆	30 ⁵ / ₁₆	672
8032-.../114	32	52 ³ / ₈	46 ⁷ / ₈	2 ⁷ / ₈	39 ³ / ₈	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	36 ¹³ / ₁₆	30 ⁵ / ₁₆	672
8032-.../164	32	53 ⁷ / ₈	48 ³ / ₈	2 ⁷ / ₈	39	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	37 ³ / ₁₆	30 ¹¹ / ₁₆	742
8032-.../234	32	53 ⁷ / ₈	48 ³ / ₈	2 ⁷ / ₈	39	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	37 ³ / ₁₆	30 ¹¹ / ₁₆	769
8032-.../304	32	54 ³ / ₄	49 ³ / ₁₆	2 ⁷ / ₈	41 ³ / ₄	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	34 ¹³ / ₁₆	28 ³ / ₈	873
8038-.../ 44	38	49 ³ / ₄	43 ¹ / ₄	2 ⁷ / ₈	41 ³ / ₄	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	34 ¹³ / ₁₆	28 ³ / ₈	594
8038-.../ 64	38	52 ³ / ₈	46 ⁷ / ₈	2 ⁷ / ₈	41 ³ / ₄	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	34 ¹³ / ₁₆	28 ³ / ₈	672
8038-.../ 114	38	52 ³ / ₈	46 ⁷ / ₈	2 ⁷ / ₈	41 ³ / ₄	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	34 ¹³ / ₁₆	28 ³ / ₈	672
8038-.../ 164	38	53 ⁷ / ₈	48 ³ / ₈	2 ⁷ / ₈	41 ³ / ₄	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	34 ¹³ / ₁₆	28 ³ / ₈	742
8038-.../ 234	38	53 ⁷ / ₈	48 ³ / ₈	2 ⁷ / ₈	41 ³ / ₄	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	34 ¹³ / ₁₆	28 ³ / ₈	769
8038-.../ 304	38	54 ³ / ₄	49 ³ / ₁₆	2 ⁷ / ₈	41 ³ / ₄	20 ³ / ₄	23 ⁵ / ₈	40 ¹³ / ₁₆	43 ⁵ / ₁₆	82 ¹¹ / ₁₆	34 ¹³ / ₁₆	28 ³ / ₈	873

Table 40: Dimensions [mm]

Size	DN	A	B	C _{min}	C ₂	C ₃	D _{min}	E	H _{ü_{min}}	W _T	X _{min}	Y	[kg]
Amaline 500													
5033-.../44	500	1346	1205	70	945	380	450	768	700	1400	815	650	240,5
5033-.../64	500	1436	1295	70	910	380	450	768	700	1400	855	690	276
5033-.../114	500	1436	1295	70	910	380	450	768	700	1400	855	690	276
5035-.../172	500	1314	1173	70	905	380	450	768	700	1400	865	700	306,5
5035-.../64	500	1404	1263	70	905	380	450	768	700	1400	865	700	274,5
5035-.../114	500	1404	1263	70	905	380	450	768	700	1400	865	700	274,5
Amaline 600													
6032-.../44	600	1346	1205	75	980	425	500	838	900	1700	835	670	248,5
6032-.../64	600	1436	1295	75	950	425	500	838	900	1700	860	695	284
6032-.../114	600	1436	1295	75	950	425	500	838	900	1700	860	695	284
6033-.../44	600	1346	1205	75	980	425	500	838	900	1700	835	670	248,5
6033-.../64	600	1436	1295	75	950	425	500	838	900	1700	860	695	284
6033-.../114	600	1436	1295	75	950	425	500	838	900	1700	860	695	284
6035-.../172	600	1368	1228	75	945	425	500	838	900	1700	815	650	315
6035-.../252	600	1400	1259	75	945	425	500	838	900	1700	815	650	332
6035-.../114	600	1400	1259	75	980	425	500	838	900	1700	825	660	284
6035-.../164	600	1400	1259	75	945	425	500	838	900	1700	815	650	315,6
Amaline 800													
8032-.../44	800	1239	1098	73	1000	527	600	1037	1100	2100	795	630	270
8032-.../64	800	1331	1190	73	1000	527	600	1037	1100	2100	935	770	305,5
8032-.../114	800	1331	1190	73	1000	527	600	1037	1100	2100	935	770	305,5
8032-.../164	800	1369	1228	73	990	527	600	1037	1100	2100	945	780	337,5
8032-.../234	800	1369	1228	73	990	527	600	1037	1100	2100	945	780	349,5
8032-.../304	800	1331	1250	73	1060	527	600	1037	1100	2100	885	720	397
8038-... / 4 4...	800	1239	1098	73	1000	527	600	1037	1100	2100	795	630	270
8038-... / 6 4...	800	1331	1190	73	1000	527	600	1037	1100	2100	935	770	305,5
8038-... / 11 4...	800	1331	1190	73	1000	527	600	1037	1100	2100	935	770	305,5
8038-... / 16 4...	800	1369	1228	73	990	527	600	1037	1100	2100	945	780	337,5
8038-... / 23 4...	800	1369	1228	73	990	527	600	1037	1100	2100	945	780	349,5
8038-... / 30 4...	800	1391	1250	73	1060	527	600	1037	1100	2100	885	720	397

Scope of supply

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

- Pump set complete with power cable
- Shackle
- Bail

Using a bail is recommended when the lifting rope of the crane will not remain attached to the attachment point of the pump set during operation; instead, the pump set will be pulled up or lowered by means of a hook.²⁸⁾

Accessories

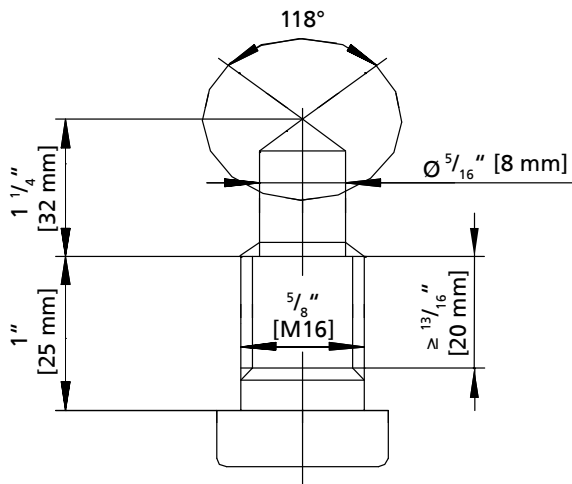
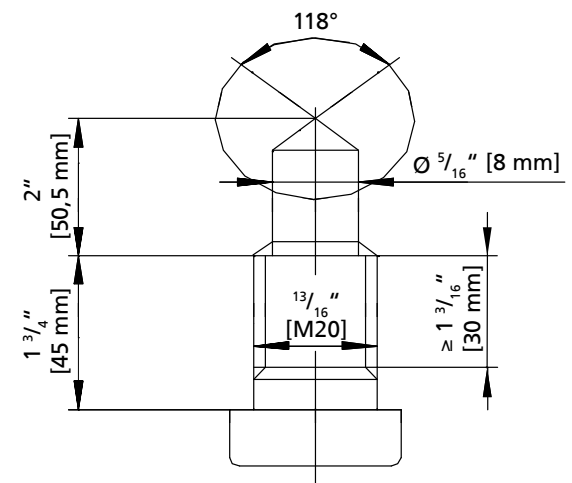
- Depending on the model, the installation parts comprise:
 - Guide rail
 - Mounting brackets
 - Middle support
- Connection pipe
- Cable support for properly routing the power cable
- Other accessories on request

²⁸ For Amaline 200, 300, 400 only

Accessories

Forcing screws

Table 41: Forcing screws

Amaline	Forcing screw		Mat. No.	[lbs]
200	$\frac{5}{8} \times 2 \frac{3}{8}$ " [M16 x 60]		11197135	0,22
300 motors: 0 6, 2 6			11197135	0,22
400			11197135	0,22
300 motors: 8 6, 11 6	$\frac{13}{16} \times 3 \frac{3}{4}$ " [M20 x 95]		11197784	0,55
600			11197784	0,55
800			11197784	0,55

Installation accessories

Overview of installation accessories

 Valid for all countries except the U.S.A.

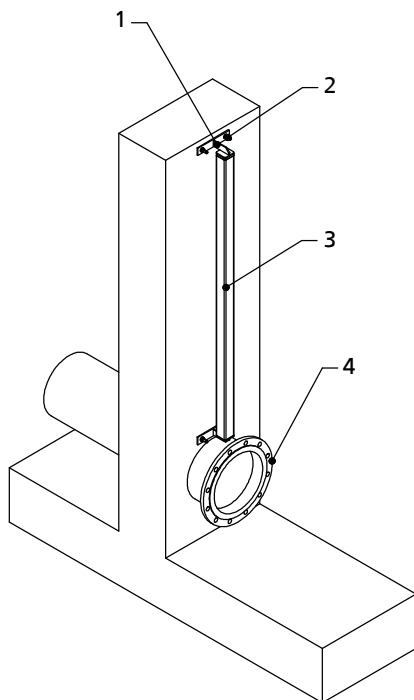


Fig. 12: Overview of installation accessories

1	Holder
2	Chemical anchor $M \frac{3}{8} \times 5 \frac{1}{8}''$ [M10 × 130]
3	Guide rail
4	Connection pipe

Fastening elements for the guide rail

Fastening elements for a guide rail < 20 ft [6 m] without middle support

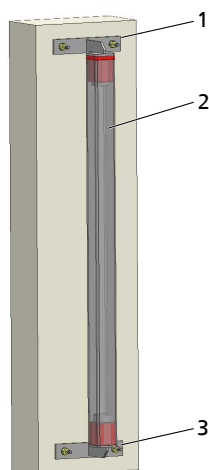


Fig. 13: Guide rail length < 20 ft [6 m]

1	Holder
2	Guide rail $2 \frac{3}{8} \times 2 \frac{3}{8} \times \frac{1}{8}''$ [60 × 60 × 3 mm]

Fastening elements for a guide rail > 20 ft [6 m] with middle support

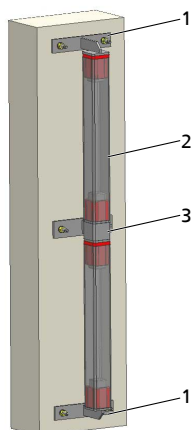


Fig. 14: Guide rail length > 20 ft [6 m]

1	Holder
2	Guide rail $2\frac{3}{8} \times 2\frac{3}{8} \times \frac{1}{8}$ [60 × 60 × 3 mm]
3	Middle support

Table 42: Valid for all countries except the U.S.A. Overview of fastening elements for the guide rail

Description	Pipe length		Material		Mat. No.	[lbs]	[kg]
	[ft]	[m]	ASTM	EN			
Fastening element for a guide rail $2\frac{3}{8} \times 2\frac{3}{8} \times \frac{1}{8}$ [60 × 60 × 3 mm] without middle support for mounting on the tank wall, incl chemical anchors $M\frac{3}{8} \times 5\frac{1}{8}$ [M10 × 130]	20	6	A276 Type 316 Ti	1.4571	01428145	5,5	2.5
Fastening element for a guide rail $2\frac{3}{8} \times 2\frac{3}{8} \times \frac{1}{8}$ [60 × 60 × 3 mm] with middle support for mounting on the tank wall, incl chemical anchors $M\frac{3}{8} \times 5\frac{1}{8}$ [M10 × 130]	20 - 40	6 - 12	A276 Type 316 Ti	1.4571	01428146	9,7	4.4

Guide rails

The guide rail length required depends on the water level. Guide rails are supplied in standard lengths of 10 ft [3 m] or 20 ft [6 m]. If the top of the guide rail is fastened to the tank edge, select the guide rail length accordingly. If necessary, shorten the guide rails at the site. For larger installation depths, extend the guide rails by adding guide rail extensions of 10 ft [3 m] or 20 ft [6 m] length at the site. Welding and subsequent treatment must be performed at the site in accordance with the relevant regulations. To allow smooth lifting and lowering of the submersible motor pumps, the weld seam at the outside of the guide rail must be ground down to a max. projection of 0.02" [0.5 mm]. For guide rail lengths > 20 ft [6 m] using a middle support is recommended.

Table 43: Valid for all countries except the U.S.A.! Overview of guide rails

	Description	Pipe length		Material		Mat. No.	[lbs]	[kg]
		[ft]	[m]	ASTM	EN			
 UG 1145303	Guide rail $2\frac{3}{8} \times 2\frac{3}{8} \times \frac{1}{8}$ [60 × 60 × 3 mm]	10	3,0	A 276 Type 304	1.4301	11304010	34,5	15.7
	Guide rail $2\frac{3}{8} \times 2\frac{3}{8} \times \frac{1}{8}$ [60 × 60 × 3 mm]	10	3,0	A 276 Type 316 Ti	1.4571	11304011	34,5	15.7
	Guide rail $2\frac{3}{8} \times 2\frac{3}{8} \times \frac{1}{8}$ [60 × 60 × 3 mm]	20	6,0	A 276 Type 304	1.4301	11304596	68,9	31.3
	Guide rail $2\frac{3}{8} \times 2\frac{3}{8} \times \frac{1}{8}$ [60 × 60 × 3 mm]	20	6,0	A 276 Type 316 Ti	1.4571	11304597	68,9	31.3

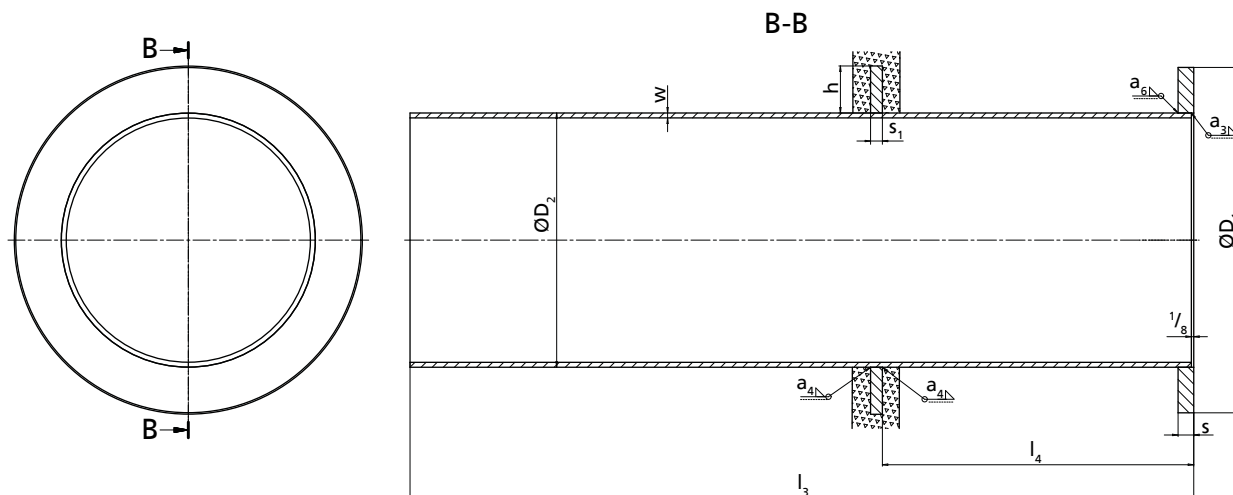
Connection pipe


Fig. 15: Dimensions of the connection pipe (l_3 , l_4 = order specifications provided to the manufacturer by the customer)

Prior to installation all dimensions including the indicated tolerances (especially the flange diameter and thickness) must be verified and, if required, adjusted by reworking.

Table 44: Dimensions of the connection pipe

DN	$\varnothing D_1$		$\varnothing D_2$		$s_{-0.5}$		w^{+1}		s_1		h	
	["]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]	["]	[mm]
200	12 ⁵ / ₈	320	8 ⁵ / ₈	219	1 ³ / ₁₆	20	1 ¹ / ₄	6	3 ³ / ₈	10	2	50
300	17 ⁵ / ₁₆	440	12 ³ / ₄	324	7 ⁷ / ₈	22	1 ¹ / ₄	6	9 ⁹ / ₁₆	15	2 ³ / ₈	60
400	21 ¹ / ₄	540	16	406	7 ⁷ / ₈	22	1 ¹ / ₄	6	9 ⁹ / ₁₆	15	2 ³ / ₁₆	65
500	25 ³ / ₈	645	20	508	1 ⁵ / ₁₆	24	1 ¹ / ₄	6	9 ⁹ / ₁₆	15	2 ³ / ₈	70
600	29 ³ / ₄	755	24	610	1 ³ / ₁₆	30	1 ¹ / ₄	6	9 ⁹ / ₁₆	15	2 ¹⁵ / ₁₆	75
800	38 ³ / ₈	975	32	813	1 ³ / ₁₆	30	1 ¹ / ₄	6	9 ⁹ / ₁₆	15	3 ¹ / ₈	80

Table 45: Material variants of the connection pipe

	Description	DN	Material		[lbs]	[kg]
			ASTM	EN		
	Connection pipe with flange to DIN EN 1092-1 / PN 6, length $l_3 = \sim 40''$ [1 m]	200	Galvanized steel		100,1	45,5
		200	A 276 Type 316 Ti	1.4571	100,1	45,5
		300	Galvanized steel		166,1	75,5
		300	A 276 Type 316 Ti	1.4571	166,1	75,5
		400	Galvanized steel		210,1	95,5
		400	A 276 Type 316 Ti	1.4571	210,1	95,5
		500	Galvanized steel		269,5	122,5
		500	A 276 Type 316 Ti	1.4571	269,5	122,5
		600	Galvanized steel		341,0	155,0
		600	A 276 Type 316 Ti	1.4571	341,0	155,0
		800	Galvanized steel		478,5	217,5
		800	A 276 Type 316 Ti	1.4571	478,5	217,5

Table 46: Connection pipe extension per meter

DN	Material variant		[lbs]	[kg]
	Galvanized steel	A 276 Type 316 Ti/1.4571		
200	X	X	74.4	33,8
300	X	X	112	50,8
400	X	X	142	64,5
500	X	X	173	78,5
600	X	X	208	94,5
800	X	X	284	129

Cable support/carabine hook

Cable support

The cable support is used for supporting the power cable at the lifting rope or tank edge (one included in standard scope of supply; additional or spare cable supports available).

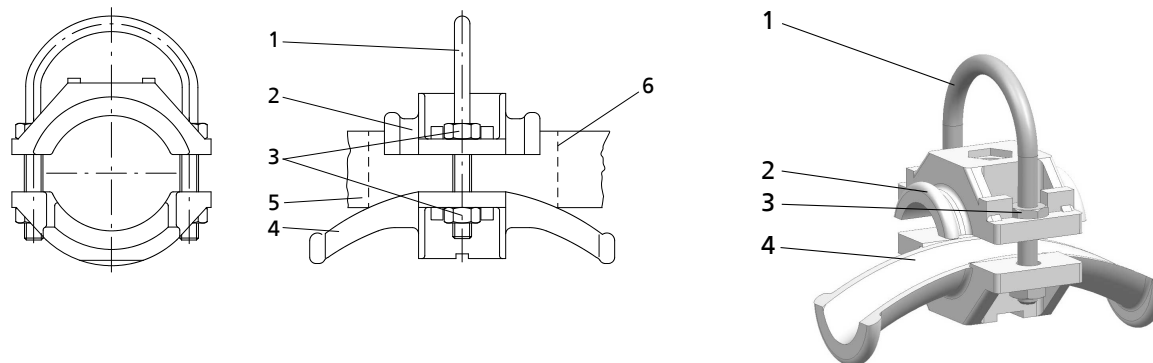


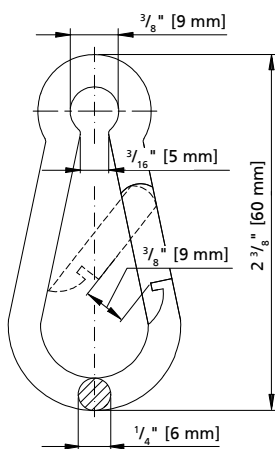
Illustration of cable support

1	Bail
2	Molded part made of polypropylene
3	Hexagon nut made of A4 (equivalent to A 276 type 316 Ti/ 1.4571)

4	Molded part made of polypropylene
5	Power cable with defined diameter ²⁹⁾
6	Rubber pad

i For power cable diameters $\leq \frac{3}{8}$ " [10 mm] or $\frac{11}{16}$ " [17 mm] respectively a rubber pad is inserted to make sure the cable is clamped properly.

Carabine hook



0W 384695-00

Fig. 16: Carabine hook dimensions ["/mm]

Table 47: Overview of cable supports / carabine hooks

Description	Suitable for motor																Material	Mat. No.	[lbs]	[kg]
	17 2	25 2	1 4	2 4	4 4	6 4	11 4	16 4	23 4	30 4	0 6	2 6	8 6	12 6	3 8	4 8				
Cable support, incl. carabine hooks	-	-	X ³⁰⁾	X ³⁰⁾	-	-	-	-	-	-	X ³⁰⁾	X ³⁰⁾	-	-	-	-	Plastic / A 276 Type 316 Ti, carabine hook: A 276 Type 316 Ti	19555522	0,132	0.06
Cable support, incl. carabine hooks	X ³¹⁾	X ³¹⁾	-	-	X ³¹⁾	X ³¹⁾	X ³¹⁾	X ³¹⁾	X ³¹⁾	X ³¹⁾	-	-	X ³¹⁾	X ³¹⁾	X ³¹⁾	X ³¹⁾	Plastic A 276 Type 316 Ti, carabine hook: A 276 Type 316 Ti	19555523	0,198	0.09

²⁹⁾ Refer to the power cable data given in the motor catalog.

³⁰⁾ Power cable diameter: $\varnothing = \frac{3}{8}$ " ... $\frac{5}{8}$ " [10 ... 16 mm]

³¹⁾ Power cable diameter: $\varnothing = \frac{11}{16}$ " - 1" [17 - 25 mm]

General assembly drawings with list of components

Amaline 200 (motors: 1 4, 2 4; motor housing made of gray cast iron)

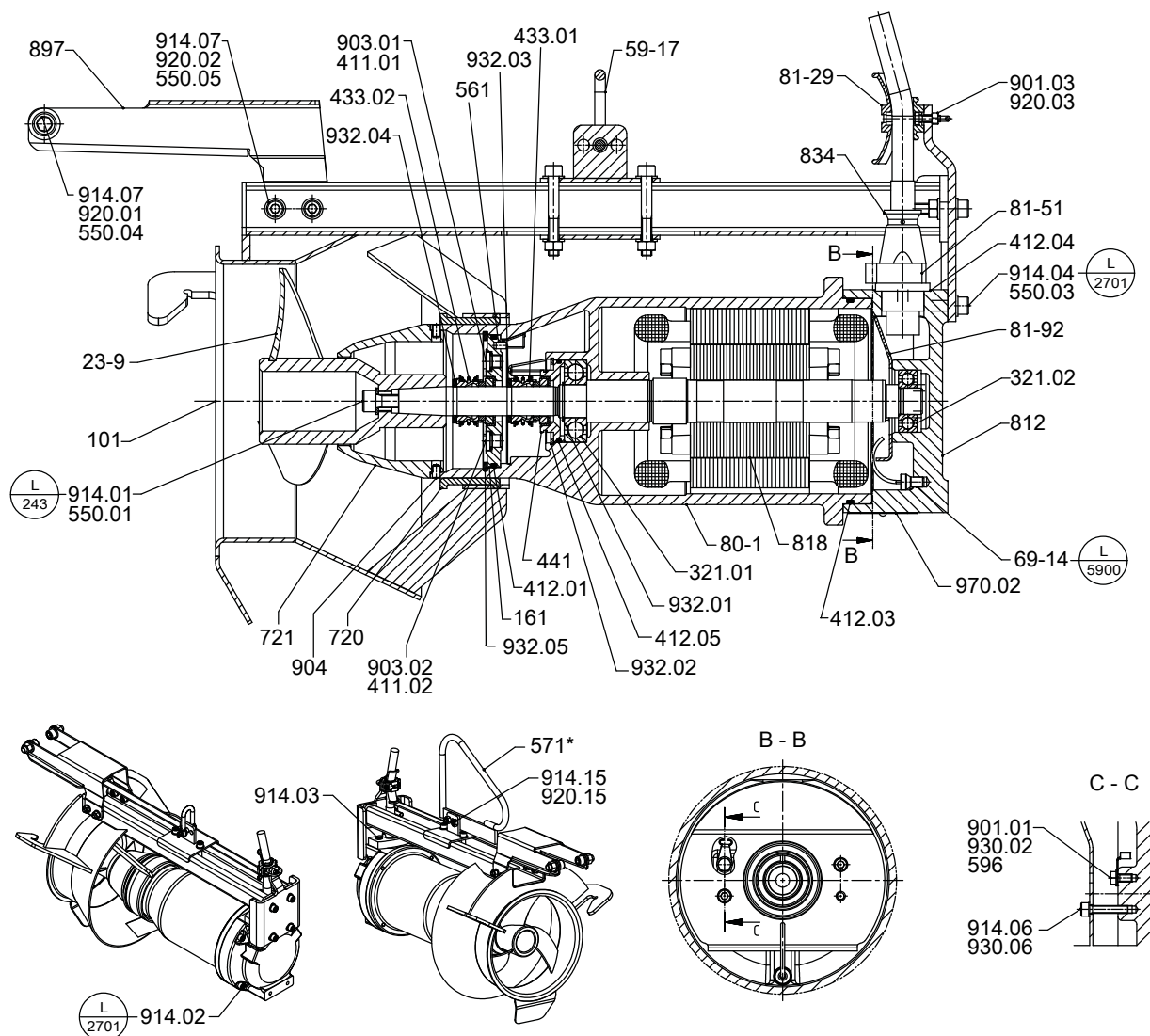


Fig. 17: General assembly drawing

*: On specific designs only

Table 48: Key to the symbols

Symbol	Key
	Always secure screwed connections marked with this symbol with Loctite 243 .
	Always secure screwed connections marked with this symbol with Loctite 2701 .
	Always secure screwed connections marked with this symbol with Loctite 5900 .

Table 49: List of components

Part No.	Description	Part No.	Description
23-9	Axial propeller	571	Bail (optional)
59-17	Shackle	596	Wire
69-14	Leakage sensor	720	Spacer
80-1	Motor unit	721	Adapter
81-29	Clamp	812	Motor housing cover
81-51	Clamping element	818	Rotor

Part No.	Description	Part No.	Description
81-92	Cover plate	834	Cable gland
101	Pump casing	897	Guide piece
161	Casing cover	901.01/.03	Hexagon head bolt
321.01/.02	Radial ball bearing	903.01/.02	Screw plug
411.01/.02	Joint ring	904	Grub screw
412.01/.03/.04/.05	O-ring	914.01/.02/.03/.04/.06/.07/.15	Hexagon socket head cap screw
433.01/.02	Mechanical seal	920.01/.02/.03/.15	Nut
441	Shaft seal housing	930.02/.06	Safety device
550.01/.03/.04/.05	Disc	932.01/.02/.03/.04/.05	Circlip
561	Grooved pin	970.02	Label/plate

Amaline 200 (motors: 1 4, 2 4; motor housing made of stainless steel)

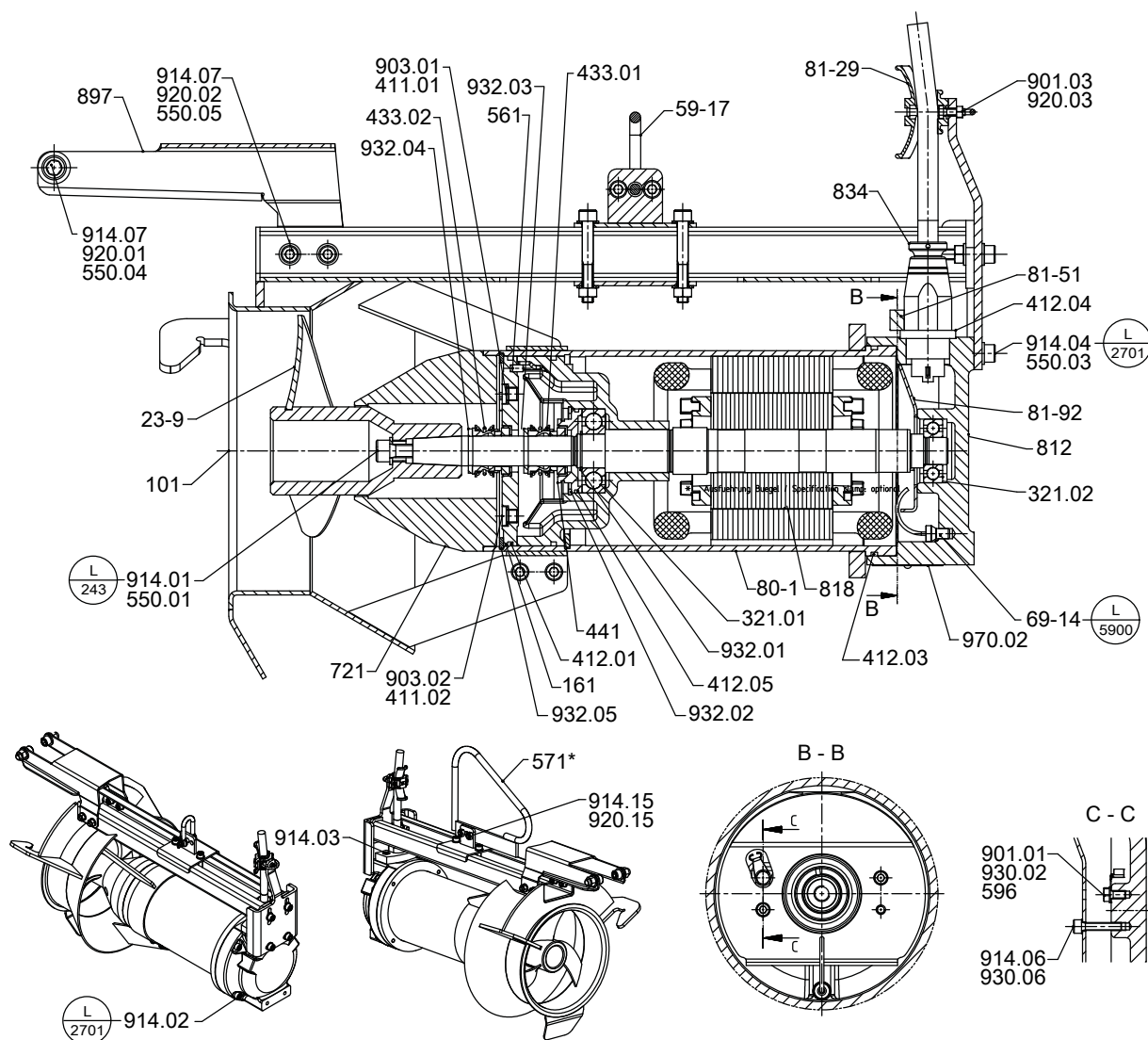


Fig. 18: General assembly drawing

*: On specific designs only

Table 50: Key to the symbols

Symbol	Key
	Always secure screwed connections marked with this symbol with Loctite 243 .
	Always secure screwed connections marked with this symbol with Loctite 2701 .
	Always secure screwed connections marked with this symbol with Loctite 5900 .

Table 51: List of components

Part No.	Description	Part No.	Description
23-9	Axial propeller	561	Grooved pin
59-17	Shackle	571	Bail (optional)
69-14	Leakage sensor	596	Wire
80-1	Motor unit	721	Adapter
81-29	Clamp	812	Motor housing cover
81-51	Clamping element	818	Rotor
81-92	Cover plate	834	Cable gland
101	Pump casing	897	Guide piece
161	Casing cover	901.01/.03	Hexagon head bolt
321.01/.02	Radial ball bearing	903.01/.02	Screw plug
411.01/.02	Joint ring	914.01/.02/.03/.04/.05/.06/.07/.15	Hexagon socket head cap screw
412.01/.02/.03/.04/.05	Shaft seal ring	920.01/.02/.03/.15	Nut
433.01/.02	Mechanical seal	930.02/.06	Safety device
441	Shaft seal housing	932.01/.02/.03/.04/.05	Circlip
550.01/.03/.04/.05	Disc	970.02	Label/plate

Amaline 300 (motors: 0 6, 2 6; motor housing made of gray cast iron)

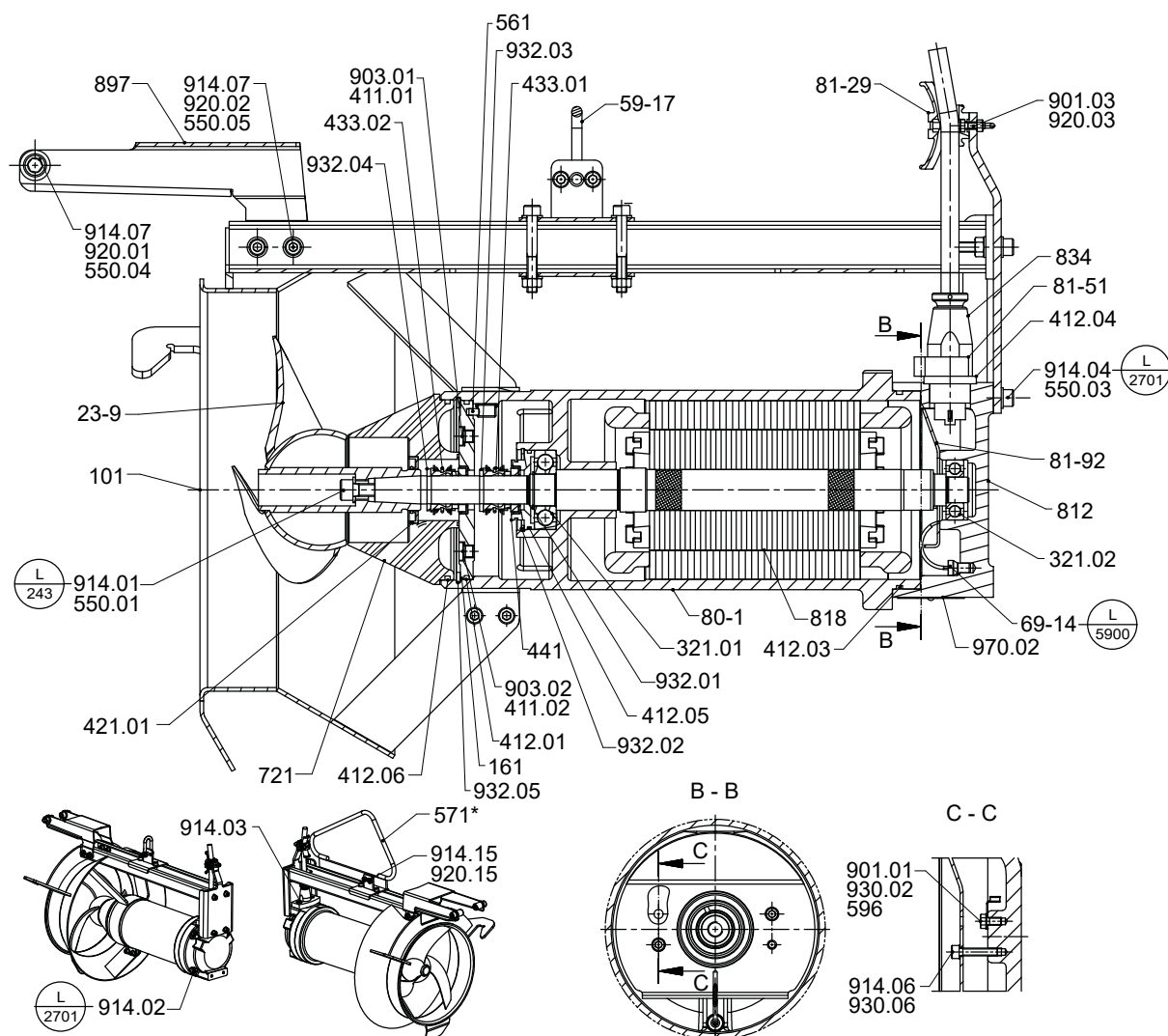


Fig. 19: General assembly drawing: a) with shackle b) with bail (optional)

*: On specific designs only

Table 52: Key to the symbols

Symbol	Key
	Always secure screwed connections marked with this symbol with Loctite 243 .
	Always secure screwed connections marked with this symbol with Loctite 2701 .
	Always secure screwed connections marked with this symbol with Loctite 5900 .

Table 53: List of components

Part No.	Description	Part No.	Description
23-9	Axial propeller	561	Grooved pin
59-17	Shackle	571	Bail (optional)
69-14	Leakage sensor	596	Wire
80-1	Motor unit	721	Adapter
81-29	Clamp	812	Motor housing cover
81-51	Clamping element	818	Rotor
81-92	Cover plate	834	Cable gland
101	Pump casing	897	Guide piece
161	Casing cover	901.01/.03	Hexagon head bolt
321.01/.02	Radial ball bearing	903.02	Screw plug

Part No.	Description	Part No.	Description
411.01/.02	Joint ring	914.01/.02/.03/.04/.05/.06/.07/.15	Hexagon socket head cap screw
412.01/.03/.04/.05/.06/.07	O-ring	920.01/.02/.03/.15	Nut
421.01	Lip seal	930.02/.06	Safety device
433.01/.02	Mechanical seal	932.01/.02/.03/.04/.05	Circlip
441	Shaft seal housing	970.02	Label/plate
550.01/.03/.04/.05	Disc		

Amaline 300 (motors: 0 6, 2 6; motor housing made of stainless steel)

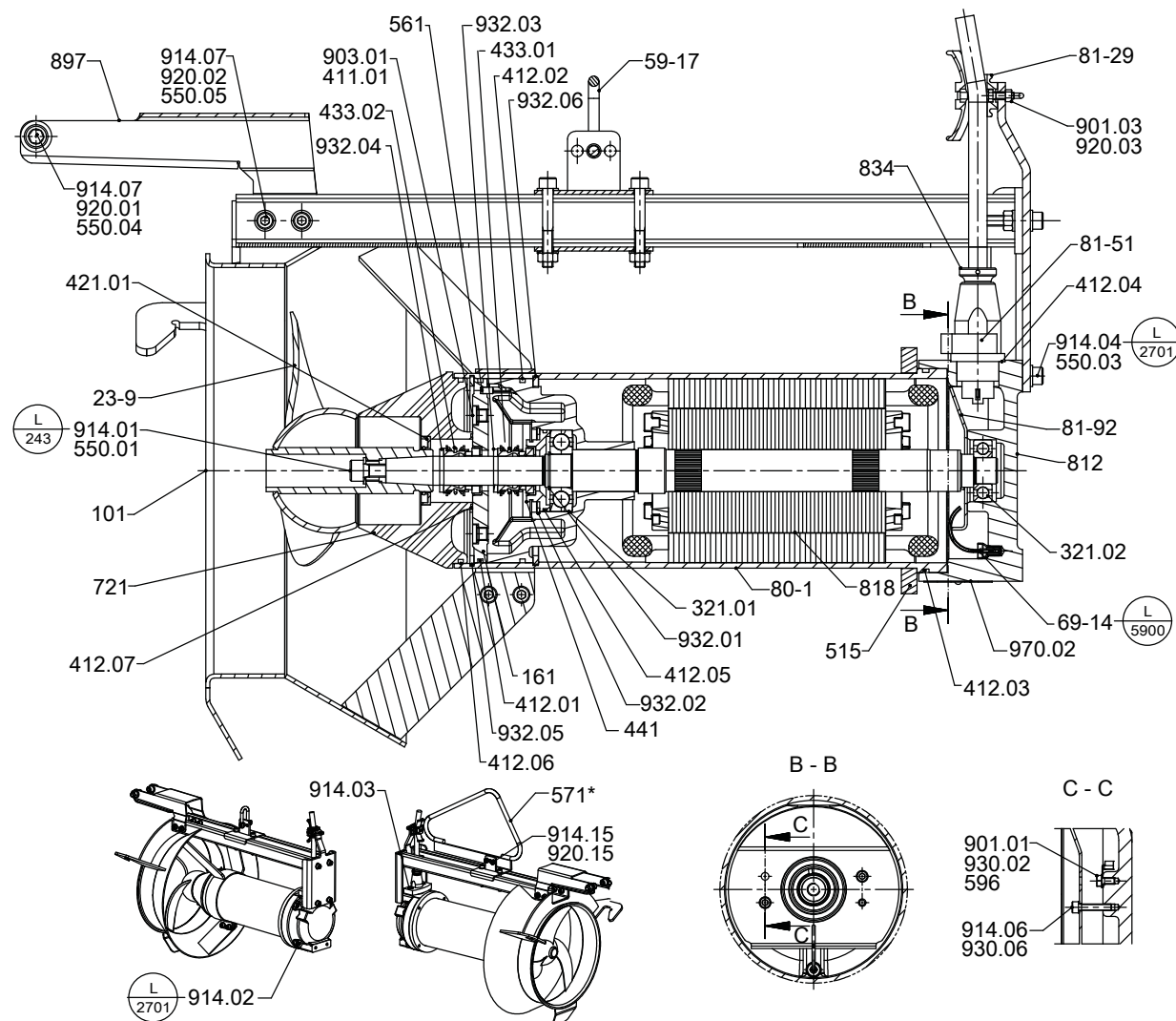


Fig. 20: General assembly drawing: a) with shackle b) with bail (optional)

*: On specific designs only

Table 54: Key to the symbols

Symbol	Key
	Always secure screwed connections marked with this symbol with Loctite 243 .
	Always secure screwed connections marked with this symbol with Loctite 2701 .
	Always secure screwed connections marked with this symbol with Loctite 5900 .

Table 55: List of components

Part No.	Description	Part No.	Description
23-9	Axial propeller	550.01/.03/.04/.05	Disc
59-17	Shackle	561	Grooved pin
69-14	Leakage sensor	571	Bail (optional)
80-1	Motor unit	596	Wire
81-29	Clamp	721	Adapter
81-51	Stator	812	Motor housing cover
81-92	Cover plate	818	Rotor
101	Pump casing	834	Cable gland
161	Casing cover	897	Guide piece
321.01/.02	Radial ball bearing	901.01/.03	Hexagon head bolt
411.01	Joint ring	903.01	Screw plug
412.01/.02/.03/.04/.05/.06/.07	O-ring	914.01/.02/.03/.04/.06/.07/.15	Hexagon socket head cap screw
421.01	Lip seal	920.01/.02/.03/.15	Nut
433.01/.02	Mechanical seal	930.02/.06	Safety device
441	Shaft seal housing	932.01/.02/.03/.04/.05/.06	Circlip
515	Locking ring	970.02	Label/plate

Amaline 300 (motors: 8 6, 12 6, motor housing made of gray cast iron)

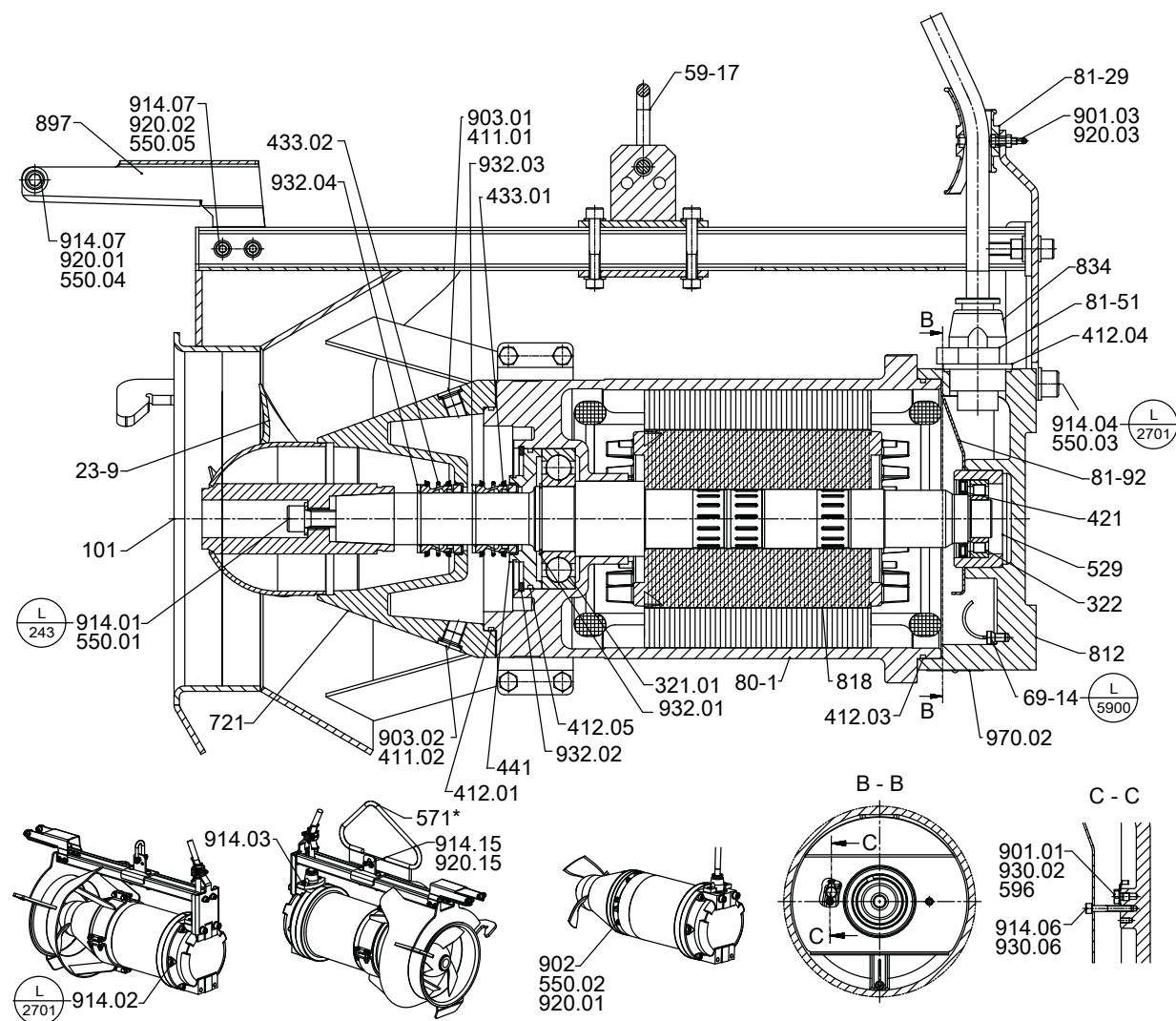
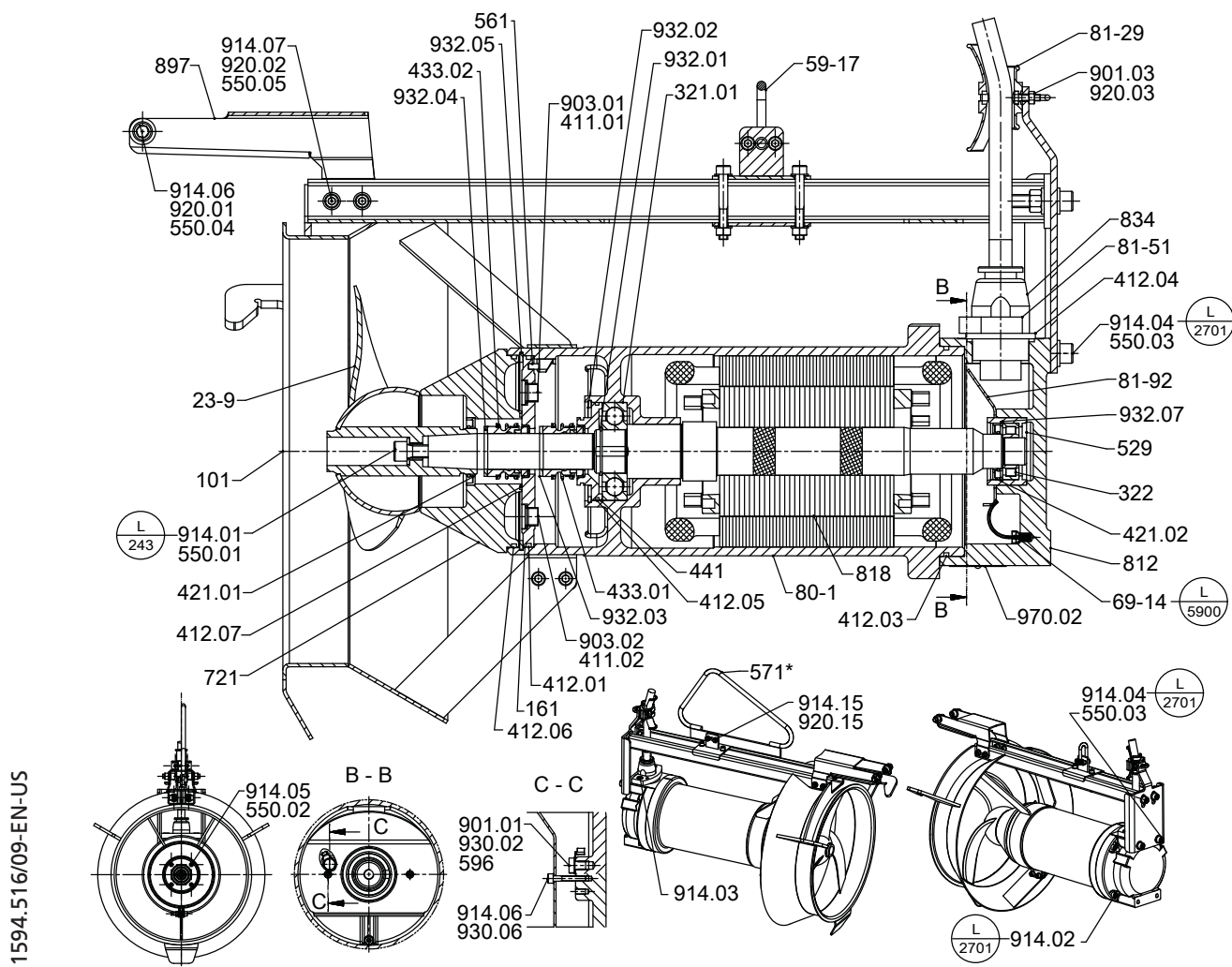


Fig. 21: General assembly drawing: a) with shackle b) with bail (optional)

Table 56: List of components

Part No.	Description	Part No.	Description
23-9	Axial propeller	529	Bearing sleeve
59-17	Shackle	550.01/.02/.03/.05	Disc
69-14	Leakage sensor	571	Bail (optional)
80-1	Motor unit	596	Wire
81-29	Clamp	811	Motor housing
81-39	Clamp	812	Motor housing cover
81-51	Clamping sleeve	818	Rotor
81-59	Stator	834	Cable gland
101	Pump casing	897	Guide piece
321.01	Radial ball bearing	901.01/.02/.03	Hexagon head bolt
322	Radial roller bearing	902	Stud
411.01/.02	Joint ring	903.01/.02	Screw plug
412.01/.02/.03/.04	O-ring	914.01/.02/.03/.04/.06/.07/.15	Hexagon socket head cap screw
421.02	Lip seal	920.01/.02/.03/.15	Nut
433.02	Mechanical seal	930.02	Safety device
443	Seal insert	932.01/.02/.03/.04/.07	Circlip
476	Mating ring carrier	970	Label/plate

Amaline 400 (motors: 3 8, 4 8; motor housing made of gray cast iron)

Fig. 22: General assembly drawing: a) with shackle b) with bail (optional)

*: On specific designs only

Table 57: Key to the symbols

Symbol	Key
	Always secure screwed connections marked with this symbol with Loctite 243 .
	Always secure screwed connections marked with this symbol with Loctite 2701 .
	Always secure screwed connections marked with this symbol with Loctite 5900 .

Table 58: List of components

Part No.	Description	Part No.	Description
23-9	Axial propeller	550.01/.02/.03/.04/.05	Disc
59-17	Shackle	561	Grooved pin
69-14	Leakage sensor	571	Bail (optional)
80-1	Motor unit	596	Wire
81-29	Clamp	721	Adapter
81-51	Clamping element	812	Motor housing cover
81-92	Cover plate	818	Rotor
101	Pump casing	834	Cable gland
161	Casing cover	897	Guide piece
321.01	Radial ball bearing	901.01/.03	Hexagon head bolt
322	Radial roller bearing	903.01/.02	Screw plug
411.01	Joint ring	914.01/.02/.03/.04/.05/.06/.07/.15	Hexagon socket head cap screw
412.01/.03/.04/.05/.06/.07	O-ring	920.01/.02/.03/.15	Nut
421.01/.02	Lip seal	930.02/.06	Safety device
433.01/.02	Mechanical seal	932.01/.02/.03/.04/.05/.07	Circlip
441	Shaft seal housing	970.02	Label/plate
529	Bearing sleeve		

Amaline 400 (motors: 3 8, 4 8; motor housing made of stainless steel)

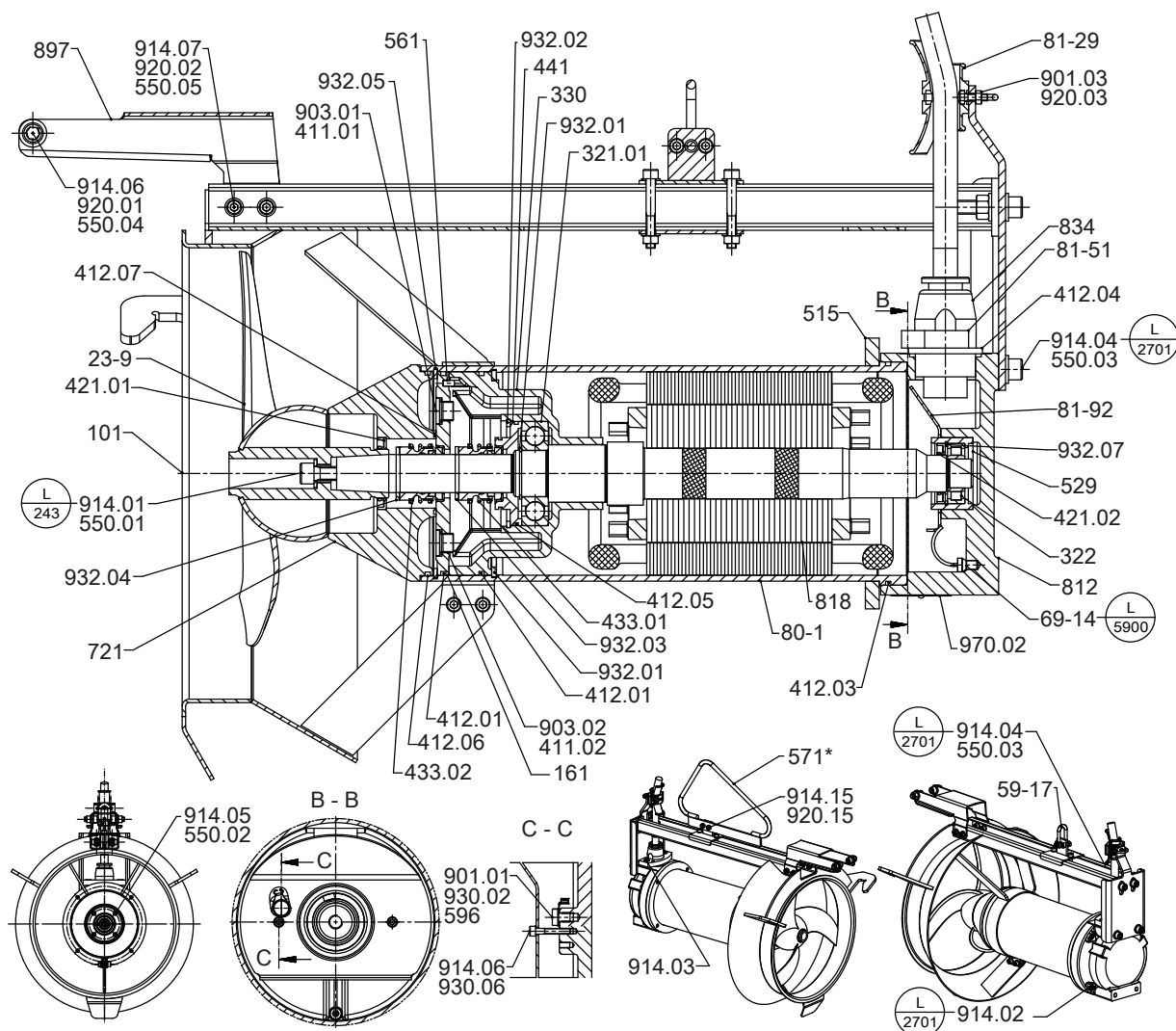


Fig. 23: General assembly drawing: a) with shackle b) with bail (optional)

*: On specific designs only

Table 59: Key to the symbols

Symbol	Key
	Always secure screwed connections marked with this symbol with Loctite 243 .
	Always secure screwed connections marked with this symbol with Loctite 2701 .
	Always secure screwed connections marked with this symbol with Loctite 5900 .

Table 60: List of components

Part No.	Description	Part No.	Description
23-9	Axial propeller	529	Bearing sleeve
59-17	Shackle	550.01/.02/.03/.04/.05	Disc
69-14	Leakage sensor	561	Grooved pin
80-1	Motor unit	571	Bail (optional)
81-29	Clamp	596	Wire
81-51	Clamping element	721	Adapter
81-92	Cover plate	812	Motor housing cover
101	Pump casing	818	Rotor
161	Casing cover	834	Cable gland
321.01	Radial ball bearing	897	Guide piece

Part No.	Description	Part No.	Description
322	Radial roller bearing	901.01/.03	Hexagon head bolt
330	Bearing bracket	903.01	Screw plug
411.01/.02	Joint ring	914.01/.02/.03/.04/.05/ .06/.07/.15	Hexagon socket head cap screw
412.01/.03/.04/.05/.06/.07	O-ring	920.01/.02/.03/.15	Nut
421.01/.02	Lip seal	930.02	Safety device
433.01/.02	Mechanical seal	932.01/.02/.03/.04/.05/.06/.07	Circlip
441	Shaft seal housing	970.02	Label/plate
515	Locking ring		

Amaline 500/600/800 (motors: 17 2, 25 2, 4 4, 6 4, 11 4, 16 4, 23 4, 30 4; motor housing made of gray cast iron)

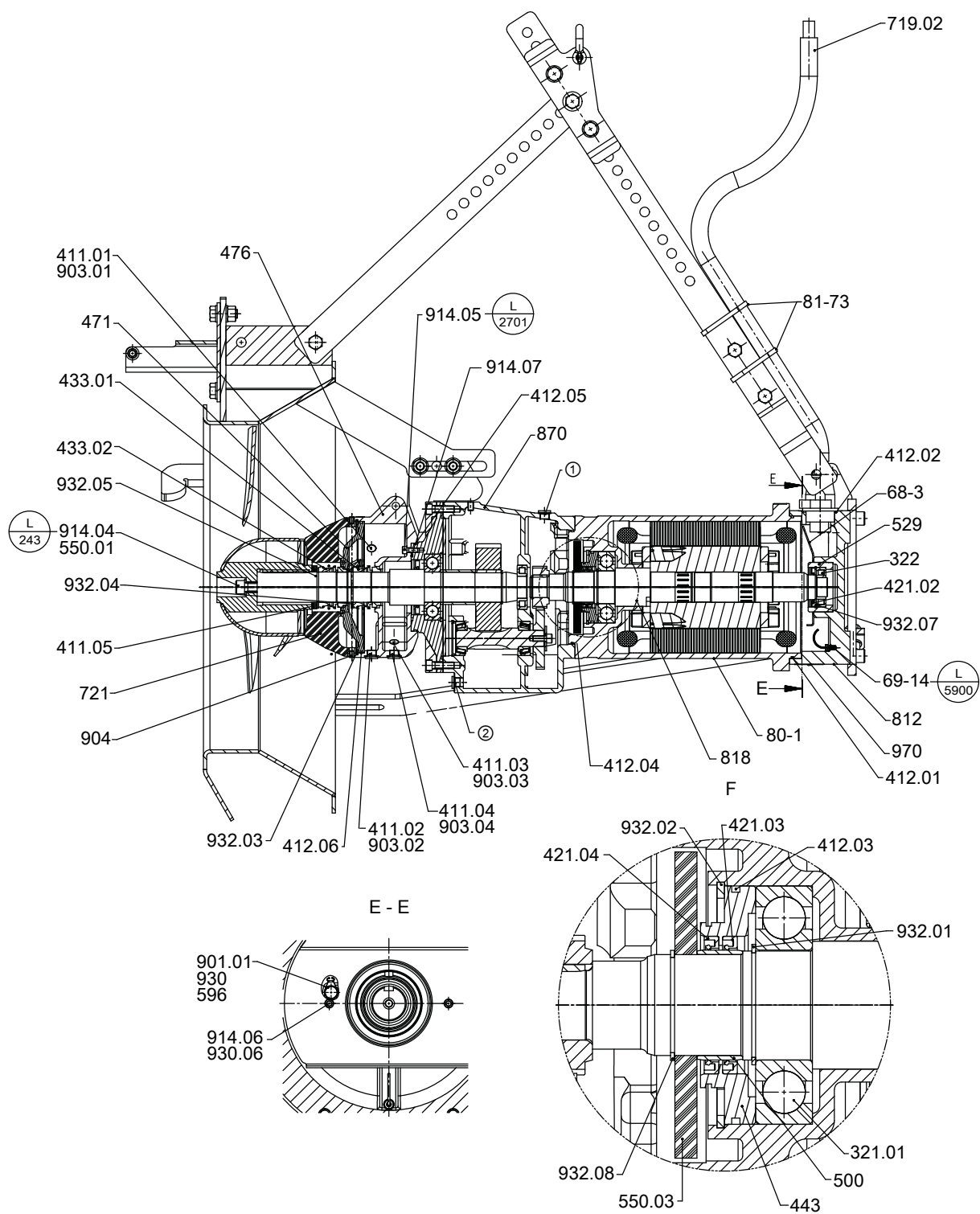


Fig. 24: General assembly drawing

①	Oil filler plug
②	Oil drain plug

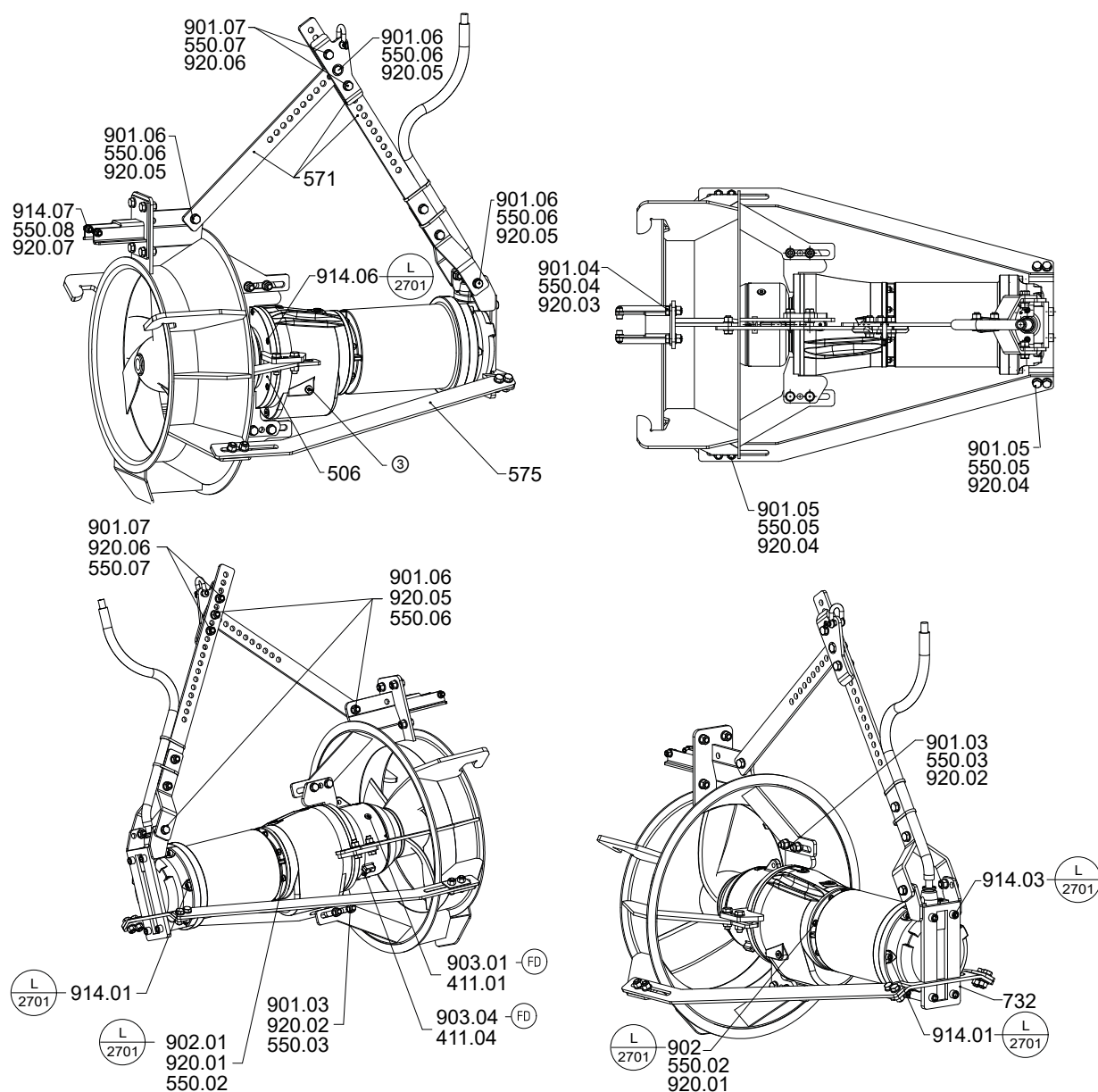


Fig. 25: Views

③	Oil check plug
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Table 61: Key to the symbols

Symbol	Key
(FD)	Always apply a liquid sealant (e.g. Hylomar SQ32M) to sealing surfaces marked with this symbol.
(L 243)	Always secure screwed connections marked with this symbol with Loctite 243 .
(L 2701)	Always secure screwed connections marked with this symbol with Loctite 2701 .
(L 5900)	Always secure screwed connections marked with this symbol with Loctite 5900 .

Table 62: List of components

Part No.	Description	Part No.	Description
23-9	Axial propeller	571	Bail
59-17	Shackle	575	Strip
68-3	Cover plate	596	Wire
69-14	Leakage sensor	719.02	Flexible tube

Part No.	Description	Part No.	Description
80-1	Motor unit	721 ³²⁾	Adapter
81-51	Clamping element	732	Holder
81-73	Cable support	812	Motor housing cover
101	Pump casing	818	Rotor
321.01	Radial ball bearing	834	Cable gland
322	Radial roller bearing	870	Gear unit
411.01/.02/.03/.04/.05	Joint ring	897	Guide piece
412.01/.02/.03/.04/.05/.06	O-ring	901.01/.03/.04/.05/.06/.07	Hexagon head bolt
421.02/.03/.04	Lip seal	902	Stud
433.01/.02	Mechanical seal	903.01/.02/.03/.04	Screw plug
443	Seal insert	904	Grub screw
471	Seal cover	914.01/.02/.03/.04/.05/.06/.07	Hexagon socket head cap screw
476	Mating ring carrier	920.01/.02/.03/.04/.05/.06/.07	Nut
500	Ring	930/.06	Safety device
506	Retaining ring	932.01/.02/.03/.04/.05/.07/.08	Circlip
529	Bearing sleeve	970/970.02	Label/plate
550.01/.02/.03/.04/.05/.06/.07/.08	Disc		

³²⁾ For Amaline 500/600 only



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