

## AC

Horizontal, single-stage, composite centrifugal pump  
50 Hz



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## Introduction

The AC pumps have been designed especially for customers in the chilling industry and are approved by market leaders.

The pumps have been thoroughly tested and are up to code with all chilling industry regulations.

## Applications

The AC pumps are designed for the circulation of liquids in open and closed systems.

Examples:

- chilling and cooling
- washing and cleaning
- water treatment
- pressure boosting
- applications with viscous liquids (glycol).

## Pumped liquids

The AC pumps are designed for pumping non-aggressive and non-explosive liquids, not containing solid particles or fibres.

If ethylene or propylene glycol is added to the pumped liquid, the concentration must not exceed 45 %.

## Operating conditions

Maximum system pressure:

6.5 bar.

Maximum inlet pressure: The actual inlet pressure plus the pressure when the pump is operating against a closed valve should always be lower than the maximum system pressure.

Minimum inlet pressure: 0.1 bar at +20 °C.

Liquid temperature: -10 °C to +55 °C.

Ambient temperature: -20 °C to +65 °C.

Storage temperature: -40 °C to +65 °C.

## Technical data

Supply voltage:	3 x 400 V, 50 Hz.*
Voltage tolerances:	± 6 %.
Enclosure class:	IP54.
Insulation class:	F.
Sound pressure level:	AC 15: ≤ 59 dB(A). AC 20: ≤ 59 dB(A). AC 25: ≤ 62 dB(A). AC 30: ≤ 62 dB(A).
Marking:	CE.

\* Other voltages are available on request. Please contact Grundfos.

## Features and benefits

### Compact design

Pump and motor are integrated in a compact and user-friendly design. The pump is fitted to a low-profile base plate, making it ideal for installation in systems.

### High reliability

- State-of-the-art mechanical shaft seal design and materials offering high wear resistance and long operating life.
- The pumps are less sensitive to impurities in the pumped liquid.

### Low noise level

The AC pumps offer very silent operation.

## Product range

The AC product range consists of the below pumps:

Pump type	Supply voltage [V]	Frequency [Hz]	Product number
AC 15	3 x 400	50	97636910
AC 20	3 x 400	50	97637190
AC 25	3 x 400	50	97637256
AC 30	3 x 400	50	97637269

## Type key

Example	AC	15	A	- P	- G	- EP	- B	B	Q	E	X	- X	- X
<b>Type range</b> AC: Horizontal, single-stage, composite centrifugal pump													
<b>Rated flow rate</b> Rated flow rate at 50 Hz [m <sup>3</sup> /h]													
<b>Pump version</b> A: Basic version													
<b>Pipe connection</b> P: PJE coupling, 2" O: External thread G (ISO 228-1)													
<b>Metals in contact with the pumped liquid</b> Z: Insert in impeller made of bronze G: Insert in impeller made of stainless steel (EN 1.4401/AISI 316)													
<b>Gaskets/seals (excl. neck ring and shaft seal)</b> EP: EPDM/NBR													
<b>Shaft seal type</b> B: Bellows seal, rubber													
<b>Material of rotating seal face</b> B: Carbon, plastic-impregnated													
<b>Material of stationary seal face</b> Q: Silicon carbide (SiC)													
<b>Material of secondary seal</b> E: EPDM (ethylene propylene)													
<b>Supply voltage</b> A: 1 x 220-230 V, 60 Hz C: 1 x 220-240 V, 50 Hz E: 3 x 230/400 V, 60 Hz F: 3 x 230/400 V, 50 Hz													
<b>Motor information</b> C: Standard motor (IP54)													
<b>Mains plug</b> A: Cable glands C: With cable													

**Note:** The type key cannot be used for ordering. Some variants are only available on request.

## Exploded view

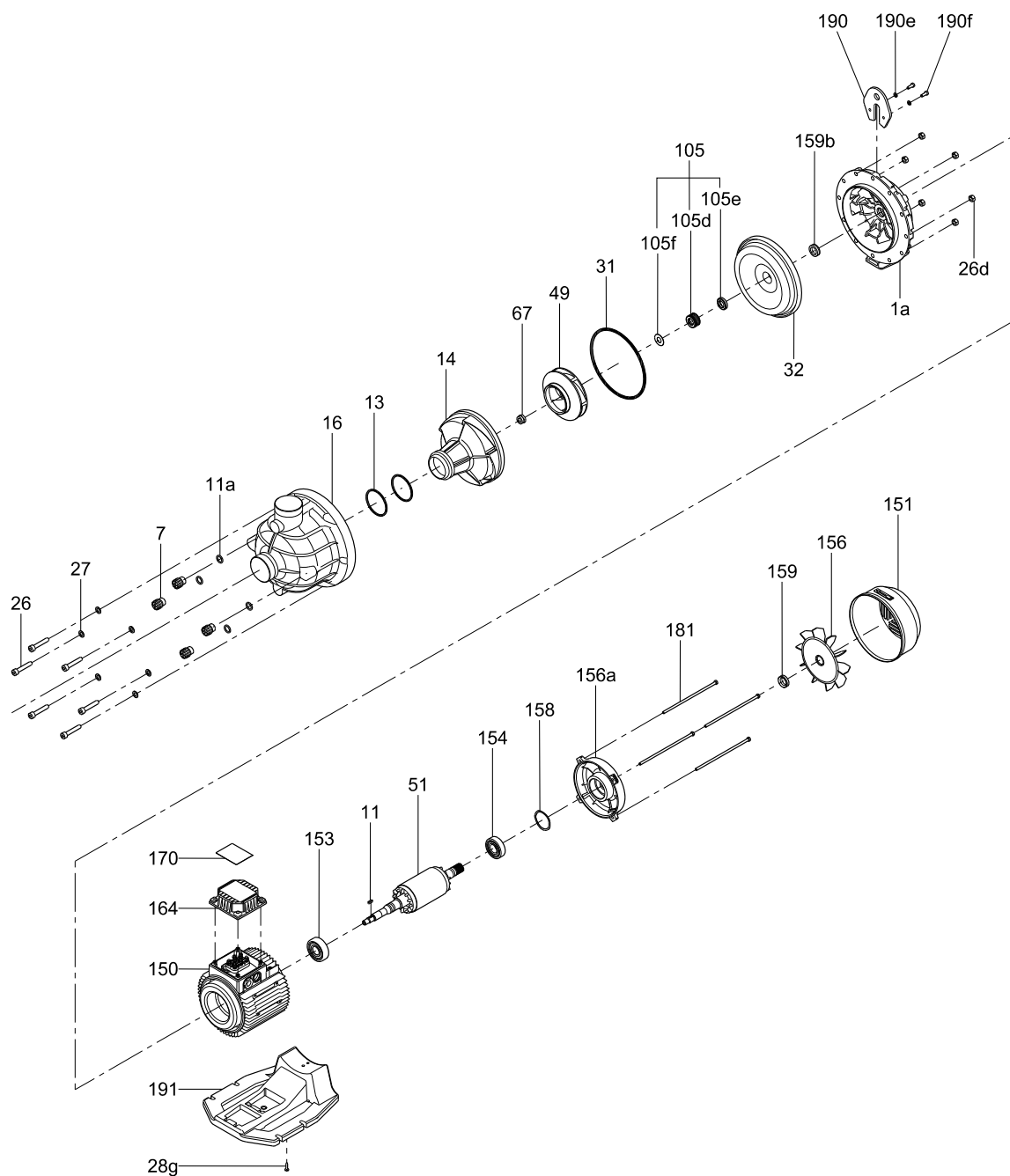
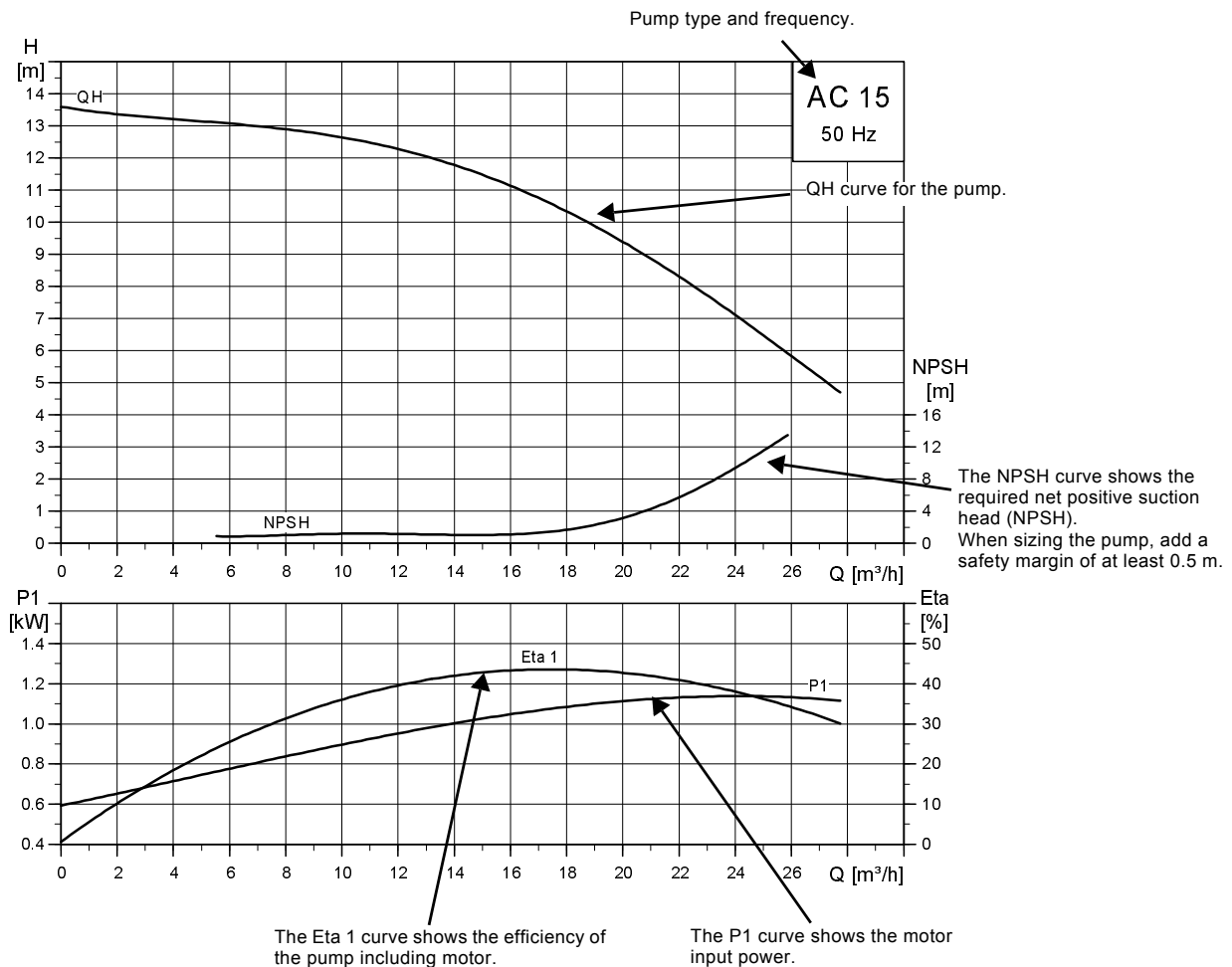


Fig. 1 Exploded view of AC pump

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## Material specification

Pos.	Description	Material	Material	
			EN	ISO/AISI/ASTM
<b>Motor parts</b>				
11	Key	Stainless steel	1.4401	AISI 316
28g	Screw	Stainless steel	1.4301	AISI 304
51	Rotor	Shaft: Stainless steel	1.4404	AISI 316 L
150	Stator housing	Aluminium		
151	Fan cover	Composite PBT/PC		
153	Ball bearing			
154	Ball bearing			
156	Fan	Composite PA 66 30 % GF		
156a	Motor cover	Aluminium		
158	Corrugated spring			
159	V-ring	NBR		
164	Terminal box cover with gasket	ABS		
170	Nameplate			
181	Staybolt	Stainless steel	1.4301	AISI 304
190	Lifting bracket	Steel		
190e	Washer	Stainless steel	1.4301	AISI 304
190f	Screw	Stainless steel	1.4301	AISI 304
191	Base plate	Composite PP 30 % GF		
<b>Pump parts</b>				
1a	Motor stool	Aluminium		
7	Plug	Composite PP 30 % GF		
11a	O-ring	NBR 70		
13	O-ring	EPDM		
14	Diffuser	Composite PA 66 30 % GF		
16	Pump housing	Composite PP 30 % GF		
26	Screw	Stainless steel	1.4401	AISI 316
26d	Nut	Stainless steel	1.4301	AISI 304
27	Washer	Stainless steel	1.4401	AISI 316
31	O-ring	EPDM		
32	Seal cover	Composite PA 66 30 % GF		
49	Impeller	Composite, brass		
67	Lock nut	Stainless steel	1.4401	AISI 316
105d	Shaft seal, rotating part	Carbon graphite, stainless steel, EPDM	1.4401	AISI 316
105e	Shaft seal, stationary part	Silicon carbide, EPDM		
105f	Washer	Stainless steel	1.4401	AISI 316
159b	V-ring			



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Fig. 2 How to read the curve charts

## Guidelines to performance curves

The guidelines below apply to the curves on the following pages:

- Tolerances to ISO 9906, Annex A.
- Measurements have been made with airless water at a temperature of +20 °C.
- The curves apply to the following kinematic viscosity:  $\nu = 1 \text{ mm}^2/\text{s}$  (1 cSt).
- All curves are based on current motor speeds.

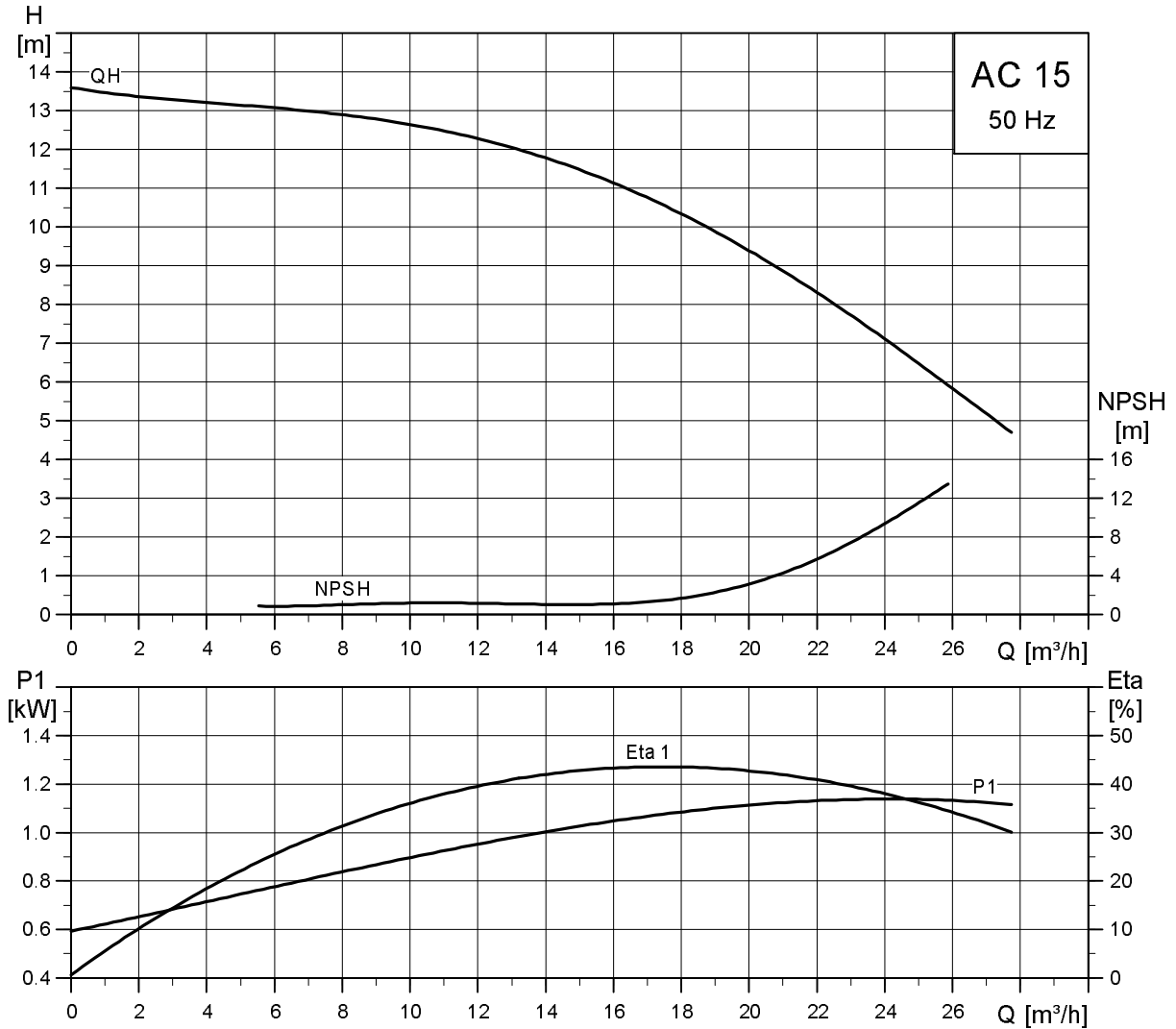
- The conversion between head H (m) and pressure p (kPa) applies to a water density of  $\rho = 1000 \text{ kg/m}^3$ .
- Due to the risk of overheating, the pumps should not be used at a flow rate below 10 % of the maximum flow rate. The table below shows the required minimum flow rate.

Pump type	Maximum flow rate [m <sup>3</sup> /h]	Required minimum flow rate* [m <sup>3</sup> /h]
AC 15	24	2.4
AC 20	30	3.0
AC 25	36	3.6
AC 30	42	4.2

\* The required minimum flow rate applies to liquid temperatures from -10 °C to +55 °C.

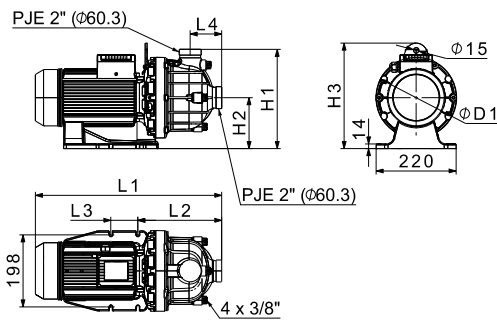
## AC 15

### Performance curves



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### Dimensions



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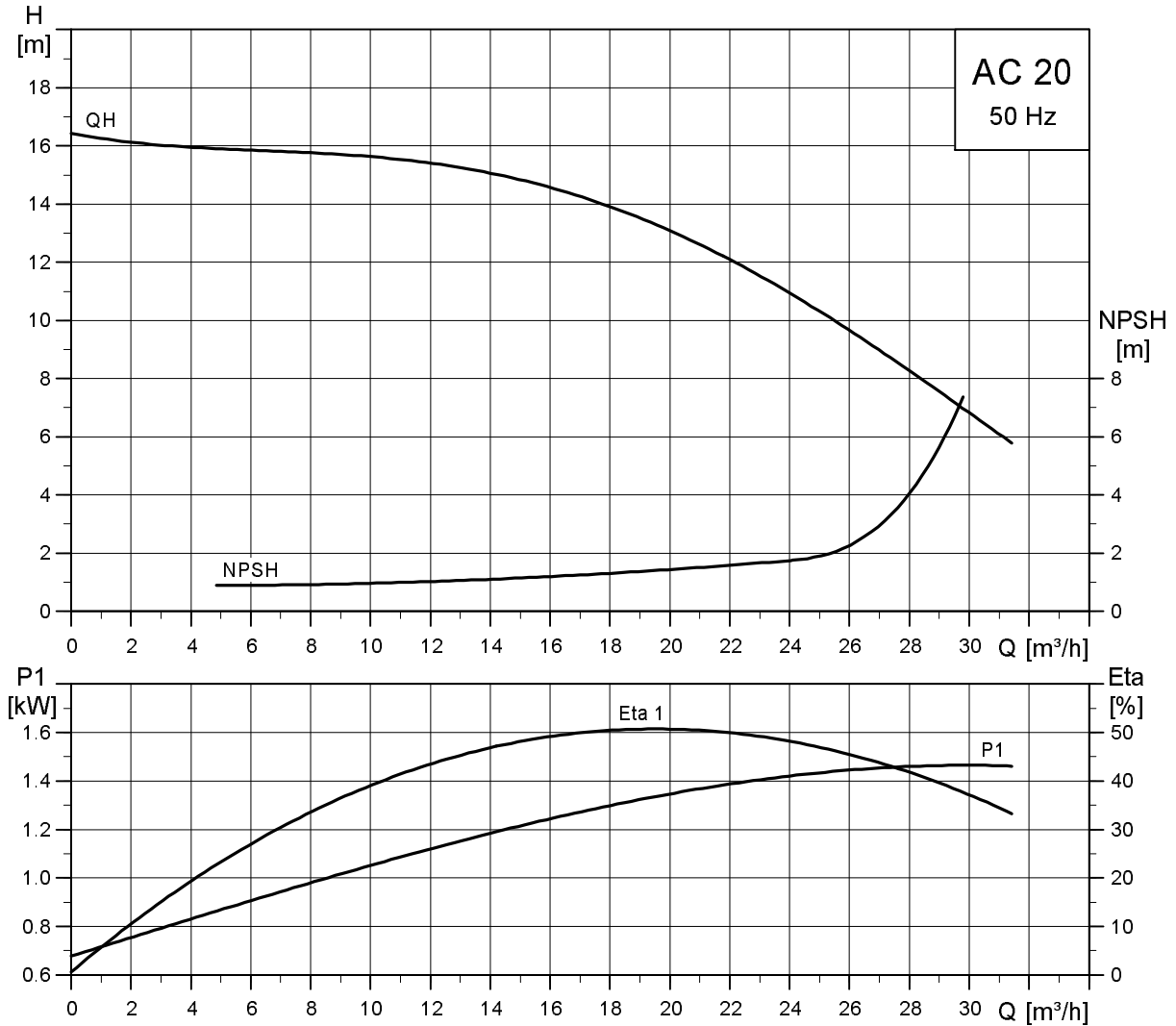
### Electrical data

Pump type	$P_1$ [kW]	$P_2$ [kW]	$I_N$ [A]	$\cos \phi_{1/1}$	$n_{1/1}$ [min <sup>-1</sup> ]
AC 15	1.20	0.87	2.3	0.75	2838

Pump type	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	D1 [mm]	Net weight [kg]
AC 15	439	231	90	87	273	140	290	222	12.3

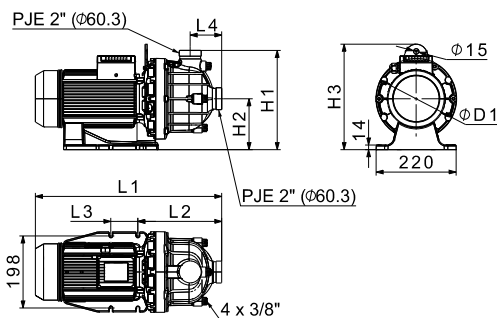
## AC 20

### Performance curves



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### Dimensions



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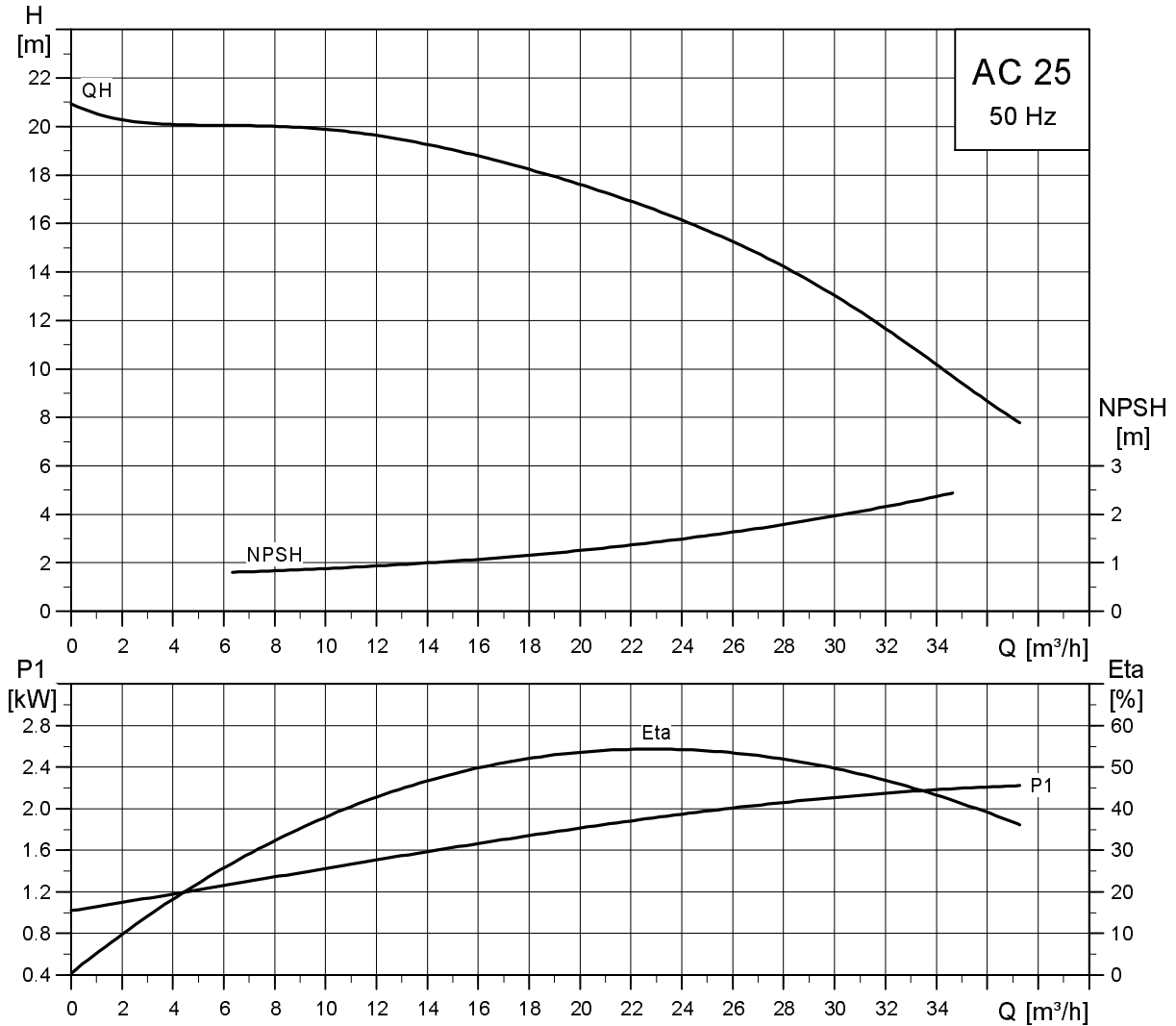
### Electrical data

Pump type	P <sub>1</sub> [kW]	P <sub>2</sub> [kW]	I <sub>N</sub> [A]	cos φ <sub>1/1</sub>	n <sub>1/1</sub> [min <sup>-1</sup> ]
AC 20	1.50	1.26	3.1	0.72	2892

Pump type	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	D1 [mm]	Net weight [kg]
AC 20	439	231	74	87	273	140	290	222	14.8

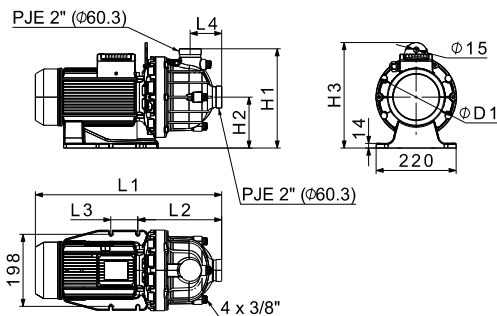
## AC 25

### Performance curves



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### Dimensions



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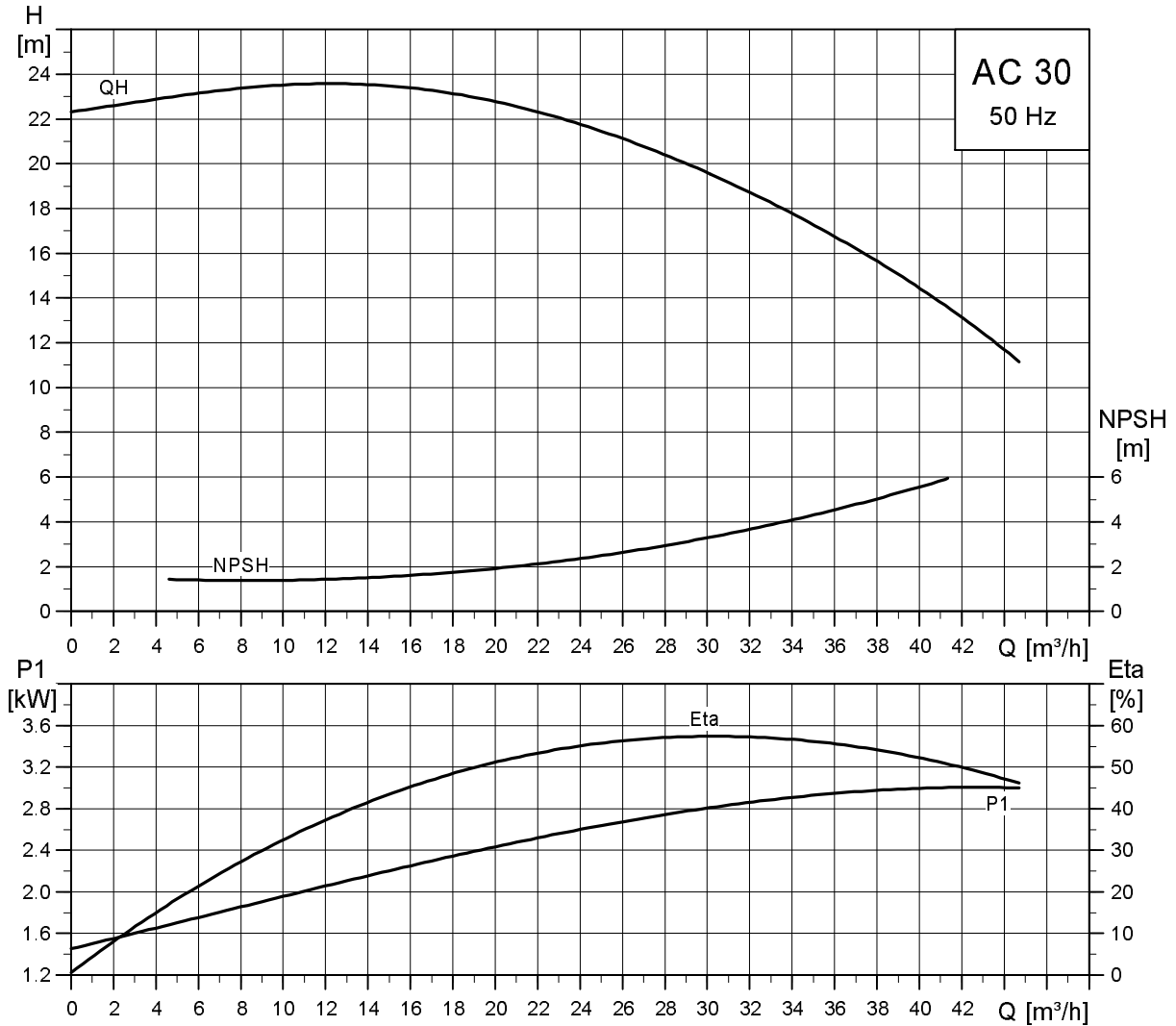
### Electrical data

Pump type	P <sub>1</sub> [kW]	P <sub>2</sub> [kW]	I <sub>N</sub> [A]	cos φ <sub>1/1</sub>	n <sub>1/1</sub> [min <sup>-1</sup> ]
AC 25	2.30	1.90	4.3	0.78	2863

Pump type	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	D1 [mm]	Net weight [kg]
AC 25	513	231	74	87	273	140	290	222	17

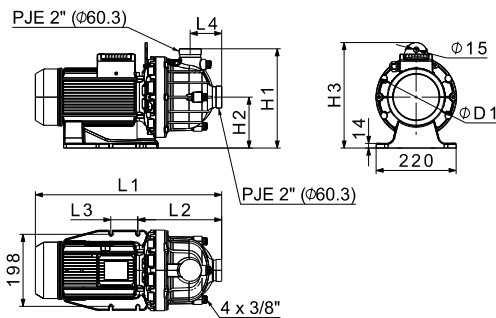
## AC 30

### Performance curves



TM04 6050 4709

### Dimensions



TM04 6008 4709

### Electrical data

Pump type	$P_1$ [kW]	$P_2$ [kW]	$I_N$ [A]	$\text{Cos } \varphi_{1/1}$	$n_{1/1}$ [ $\text{min}^{-1}$ ]
AC 30	3.00	2.56	5.8	0.78	2865

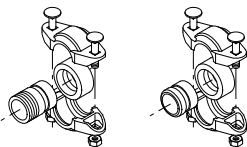
Pump type	$L_1$ [mm]	$L_2$ [mm]	$L_3$ [mm]	$L_4$ [mm]	$H_1$ [mm]	$H_2$ [mm]	$H_3$ [mm]	$D_1$ [mm]	Net weight [kg]
AC 30	563	282	177	114	355	170	320	300	22

## Accessories

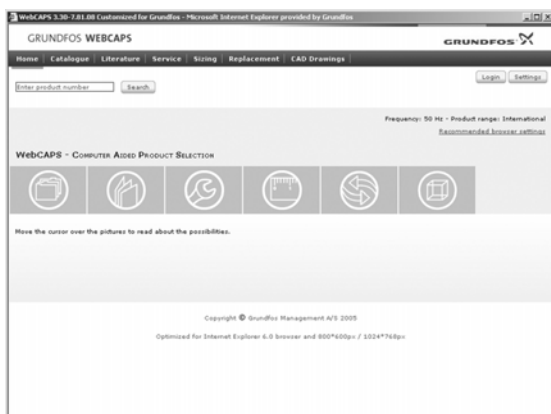
### Coupling, pipe stub and gasket for PJE connections

Parts in contact with the pumped liquid are made of stainless steel, EN 1.4401/AISI 316, and rubber.

A PJE coupling set consists of two coupling halves (Victaulic, type 77), one gasket, one pipe stub (for welding or threaded), bolts and nuts.

Coupling and pipe stub	Pump type	Pipe stub	Pipework connection	Rubber parts	Number of coupling sets required	Product number
	TM00 3808 1094 AC 15 AC 20 AC 25 AC 30	Threaded	R 2	EPDM	2	339911
				FKM	2	339918
		For welding	DN 50	EPDM	2	339910
				FKM	2	339917

## WebCAPS

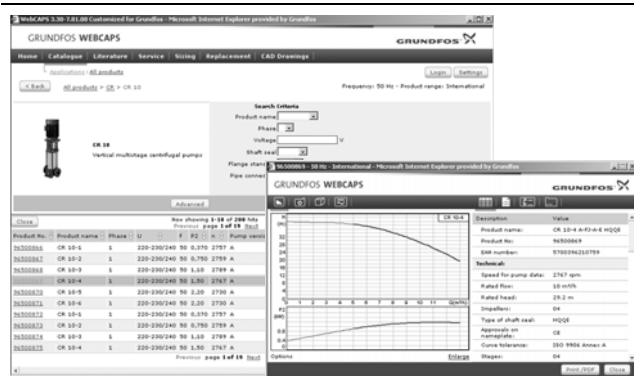


WebCAPS is a **Web-based Computer Aided Product Selection** program available on [www.grundfos.com](http://www.grundfos.com).

WebCAPS contains detailed information on more than 185,000 Grundfos products in more than 20 languages.

In WebCAPS, all information is divided into six sections:

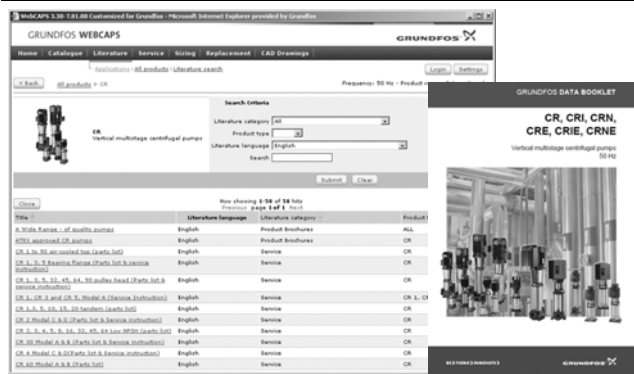
- Catalogue
- Literature
- Service
- Sizing
- Replacement
- CAD drawings.



### Catalogue

This section is based on fields of application and pump types, and contains

- technical data
- curves (QH, Eta, P1, P2, etc.) which can be adapted to the density and viscosity of the pumped liquid and show the number of pumps in operation
- product photos
- dimensional drawings
- wiring diagrams
- quotation texts, etc.



### Literature

In this section you can access all the latest documents of a given pump, such as

- data booklets
- installation and operating instructions
- service documentation, such as Service kit catalogue and Service kit instructions
- quick guides
- product brochures.



### Service

This section contains an easy-to-use interactive service catalogue. Here you can find and identify service parts of both existing and discontinued Grundfos pumps.

Furthermore, this section contains service videos showing you how to replace service parts.



## Sizing

This section is based on different fields of application and installation examples, and gives easy step-by-step instructions in how to

- select the most suitable and efficient pump for your installation
- carry out advanced calculations based on energy consumption, payback periods, load profiles, life cycle costs, etc.
- analyse your selected pump via the built-in life cycle cost tool
- determine the flow velocity in wastewater applications, etc.

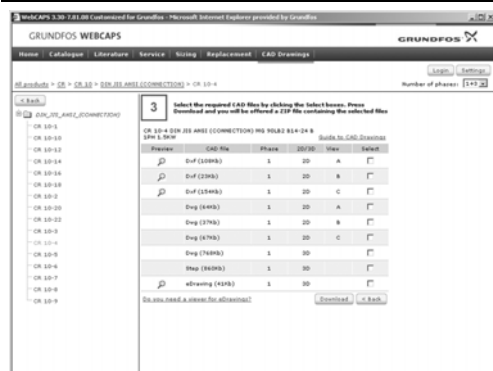


## Replacement

In this section you find a guide to selecting and comparing replacement data of an installed pump in order to replace the pump with a more efficient Grundfos pump.

The section contains replacement data of a wide range of pumps produced by other manufacturers than Grundfos.

Based on an easy step-by-step guide, you can compare Grundfos pumps with the one you have installed on your site. When you have specified the installed pump, the guide will suggest a number of Grundfos pumps which can improve both comfort and efficiency.



## CAD drawings

In this section it is possible to download two-dimensional (2D) and three-dimensional (3D) CAD drawings of most Grundfos pumps.

These formats are available in WebCAPS:

- 2-dimensional drawings:
- .dxf, wireframe drawings
  - .dwg, wireframe drawings.
- 3-dimensional drawings:
- .dwg, wireframe drawings (without surfaces)
  - .stp, solid drawings (with surfaces)
  - .eprt, E-drawings.

## WinCAPS



Fig. 3 WinCAPS CD-ROM

WinCAPS is a **Windows-based Computer Aided Product Selection** program containing detailed information on more than 185,000 Grundfos products in more than 20 languages.

The program contains the same features and functions as WebCAPS, but is an ideal solution if no Internet connection is available.

WinCAPS is available on CD-ROM and updated once a year.

Subject to alterations.



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