



Etanorm 200-150-400 GG
ETN 200-150-400-GGSAA11 GSHGY4AHB

Operating point 1 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	368 m³/h	Vapour pressure determined	0.02337 bar.a
Target head	40 m	Minimum inlet pressure required	-0.3 bar.r
Fluid	Water	Specified ambient temperature	20 °C
Fluid variant	Clean water	Installation altitude above sea level	1,000 m
Specified fluid temperature	20 °C		
Density Fluid handled	998 kg/m³		
Kinematic viscosity Fluid handled	1 mm²/s		

Operating conditions (performance)

Flow rate	367.99 m³/h	Maximum power input at duty point	47.43 kW
Minimum permissible flow rate	59.4 m³/h	Maximum power input / curve	54.94 kW
Maximum permissible flow rate Pump set	516.48 m³/h	Pump speed	1,483 1/min
Maximum permissible flow rate	516.48 m³/h	Shut-off pressure	4.779 bar.r
Head	40 m		
Maximum pressure determined at duty point	3.915 bar.r		
Shut-off head	48.83 m		
Efficiency Pump	84.43 %		
NPSH required	2.21 m		



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Design data pump

Scope of supply Pump supplied by KSB	Bare-shaft pump	Mains frequency	50 Hz
Pump standard	EN 733	Minimum efficiency index MEI	0.7
Shaft axis position	Horizontal	Minimum permissible fluid temperature	0 °C
Pump design	Long-coupled (baseplate-mounted)	Maximum permissible fluid temperature	60 °C
Pump system design	Single-pump system	Quantity Stages, single-entry	1
Pump direction of rotation, viewed from casing side	Counterclockwise	Casing wear ring design suction-side	Casing wear ring flat
Hydraulic impeller diameter	355.9 mm	Casing wear ring design discharge-side	Casing wear ring flat
Impeller type	Radial, closed, multi-channel	Installation chamber Casing cover	Conical (A-type cover)
Free passage	23.8 mm	Bearing bracket size / shaft unit	55
Nut lock for Impeller	Yes	Bearing bracket design	Medium
		Lubrication type	Grease lubrication
		Bearing seal Pump	V-ring
		Pump directive	CE

Nozzle connections pump

Nominal diameter Suction nozzle	DN 200	Nominal diameter Discharge nozzle	DN 150
Nominal pressure Suction nozzle	PN 10	Nominal pressure Discharge nozzle	PN 16
Suction nozzle position	Axial	Discharge nozzle position	0 deg
Suction nozzle design acc.to	EN1092-2	Discharge nozzle design acc.to	EN1092-2
Suction flange bolt hole pattern as per standard	EN1092-2	Discharge flange bolt hole pattern as per standard	EN1092-2
Flange facing type Inlet	Raised face (B,RF)		
Flange facing type Outlet	Raised face (B,RF)		

Auxiliary connections pump

6B Fluid Drain	G 1/2 Drilled and plugged
6D Fluid Filling and venting	G 1/2 Drilled and plugged
8B Leakage Drain	G 1/2 Drilled



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Shaft sealing

Shaft seal type	Single mechanical seal (A-type cover) - A	Shaft seal code	Code 11
Operating mode of mechanical seal (function)	API plan 03	Shaft seal manufacturer inboard	KSB's choice
Determined pressure Seal chamber	-0.02 bar.r	Mechanical seal type inboard	KSB's choice
		Material Shaft seal inboard	BQEGG DW001

Materials

Material Volute casing	EN-GJL-250/A48 CL 35B	Material Bolts/Screws Volute casing	8.8
Material Casing cover	EN-GJL-250/A48 CL 35B	Material Nut Impeller fastening (ST)	
Material Shaft	C45+N		
Material Impeller	EN-GJL-250/A48 CL 35B		
Material Casing wear ring suction-side	JL/LAMELLAR GRAPHITE CAST IRON		
Material Casing wear ring discharge-side	JL/LAMELLAR GRAPHITE CAST IRON		
Material Shaft protecting sleeve	(CRNIMO ST INT)		
Material Bearing bracket	EN-GJL-250/A48 CL 35B		
Material Static seal Discharge cover	DPAF DW001		

Driver

Electric motor, asynchronous	No	Rated speed Motor	1,480 1/min
Drive concept	Electric actuator	Number of motor poles	4
Drive standard, mechanical	IEC	Rated power Motor	55 kW
Drive standard electric	IEC		
Motor construction type	IM B3 (IM1001) IEC 60034-7		
Motor size	250M		



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Coating

Surface preparation	Aggregate
Properties Primer coat	Free from dirt, grease, rust
Thickness Primer coat	Hydro dip primer, water-dilutable
Properties Top coat	60 µm
Thickness Top coat	Acrylate dispersion water-thinned
Colour Top coat	40 µm
	RAL5002 Ultramarine Blue

Energy cost and Environmental Impact

Result

Estimated Product Carbon Footprint (cradle-to-gate) (CO₂eq) 798 kg
*

*is based on the product weight assuming typical material proportions. The conversion rate between product weight and CO₂ emissions is based on several life cycle analyses in acc. with ISO 14040 / 44 of sample products from the same series. The objective and scope of these LCAs was limited to the manufacturing phase (cradle-to-gate). With regard to the 'inputs', all materials, energy and auxiliary materials were taken into account; with regard to the 'outputs', emissions, scrap and waste were considered. The influence of outgoing logistics is not covered. The input variables of the analyses cover at least 95% of the total weight. The analysis focusses on the global warming potential (EF3.0 Climate Change - total).

Packaging

Suitable for transport	Truck transport
Suitable for storage	Indoor storage
Packaging category	KSB's choice (A0)

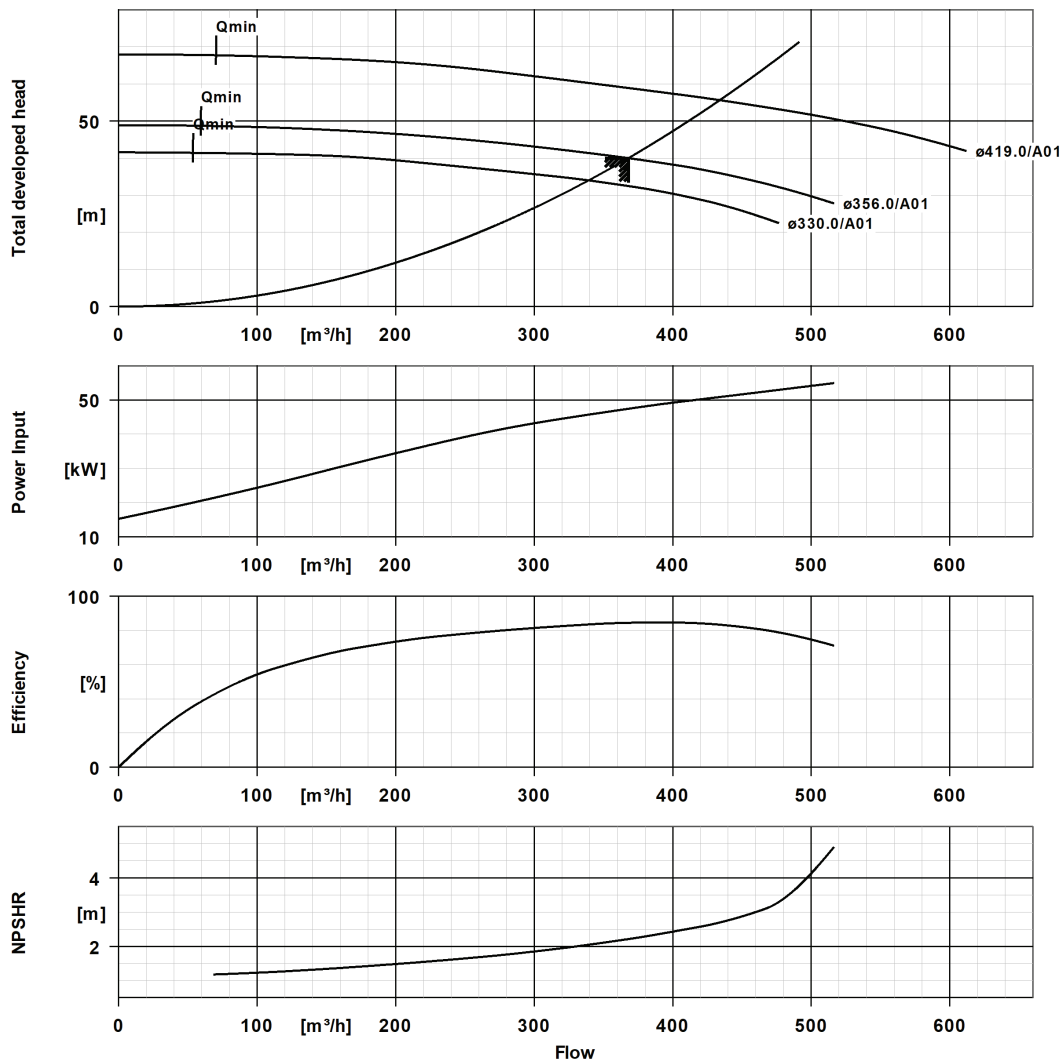
Order related documents

Performance Curve (Pump)



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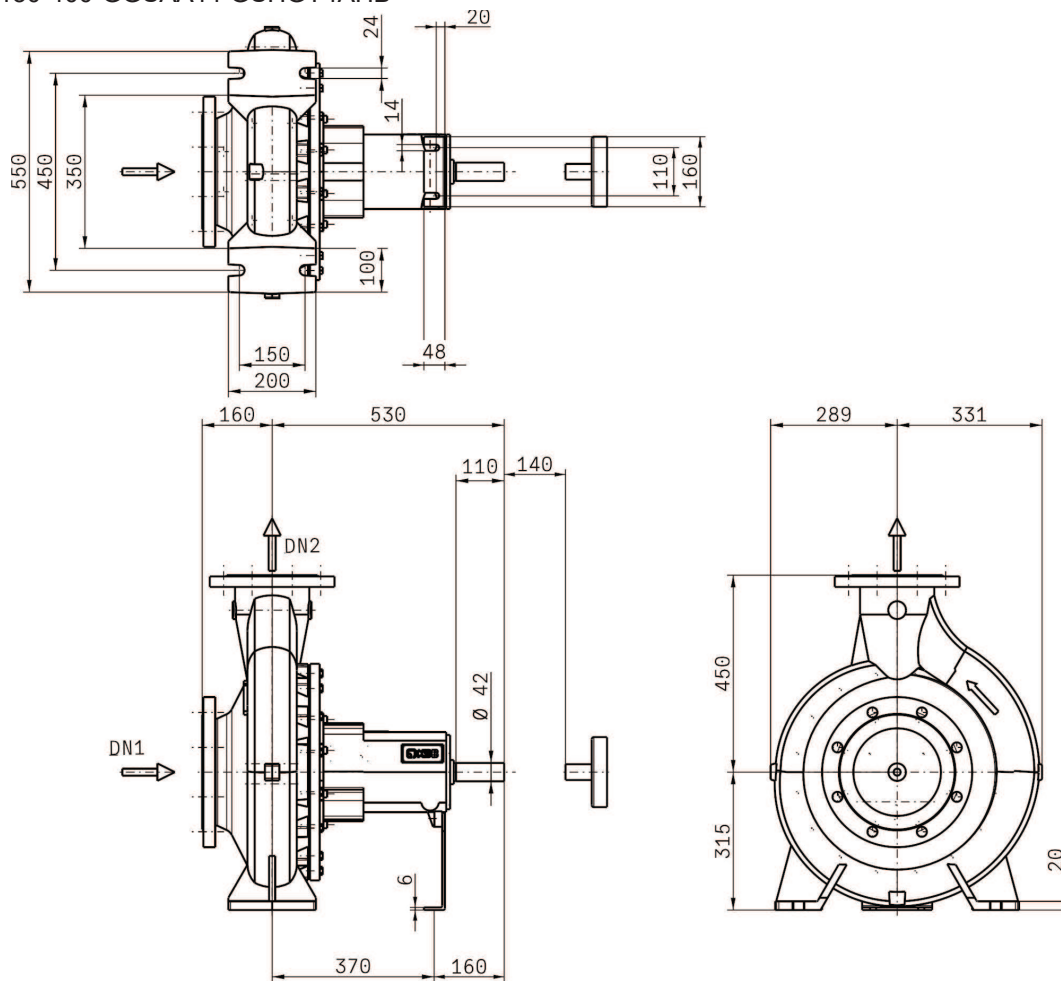


Curve Data

Pump speed	1,483 1/min	Efficiency Pump	84.4 %
Density Fluid handled	998 kg/m^3	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1 mm^2/s	Maximum power input at duty point	47.4 kW
Flow rate	368 m^3/h	NPSH required	2.21 m
Head	40 m	Hydraulic impeller diameter	355.9 mm
Maximum pressure determined at duty point	3.91 bar.r	Hydraulic values according to	EN ISO 9906
			Class 3B

According to EN ISO 9906, §4.4.2 (pump input power below 10 kW)

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Drawing is not to scale.

Dimensions are given in mm

Motor

Motor size	250M
Rated power Motor	55 kW
Number of motor poles	4

Connections

Nominal diameter Suction nozzle	DN 200
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 150
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 10
Nominal pressure Discharge nozzle	PN 16



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Net weight

Total weight Pump 210.1 kg

Connect pipelines stress-free

Dimensional tolerances for shaft axis height: DIN 747
Dimensions without tolerances, middle tolerances to: ISO 2768-m
Connection dimensions for pumps: EN735
Dimensions without tolerances - welded parts: ISO 13920-B
Dimensions without tolerances - gray cast iron parts: ISO 8062-CT9

Plan for additional connections see extra drawing