Technical Datasheet

Etabloc 150-125-250 GG
ETB 150-125-250-GGSBV11 WSFEO4HHB

Operating point 1 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	230 m³/h	Vapour pressure determined	0,09494 bar.a
Target head	18,36 m	Minimum inlet pressure required	-0,3 bar.r
Fluid	Water		
Fluid variant	Clean water	Specified ambient temperature	20 °C
Specified fluid temperature	45 °C	Installation altitude above sea level	1.000 m
Density Fluid handled	989,9 kg/m³		
Kinematic viscosity Fluid handled	0,6093 mm²/s		

Operating conditions (performance)

Flow rate	230 m³/h	Maximum power input at duty point	13,44 kW
Minimum permissible flow rate	42,82 m³/h		
Maximum permissible flow rate	339,7 m³/h	Maximum power input / curve	14,4 kW
Pump set		Pump speed	1.475 1/min
Maximum permissible flow rate	339,7 m³/h	Shut-off pressure	2,1471 bar.r
Head	18,36 m		
Maximum pressure determined at duty point	1,78236 bar.r		
Shut-off head	22,12 m		
Efficiency Pump	84,76 %		
NPSH required	1,74 m		

Design data pump

Scope of supply Pump supplied by KSB	Pump + motor	Input voltage and frequency	Without
		Mains voltage	400 V
Pump standard	EN 733	Mains frequency	50 Hz
Shaft axis position	Horizontal	Minimum efficiency index MEI	0,7
Pump design	Close-coupled	Minimum permissible fluid temperature	0 °C
Pump system design	Single-pump system		
Specification of wetted parts	Manufactured without paint wetting impairment substances	Maximum permissible fluid temperature	60 °C
Pump direction of rotation, viewed from casing side	Counterclockwise	Quantity Stages, single-entry	1
		Casing wear ring design suction-side	Casing wear ring flat
Hydraulic impeller diameter	252,2 mm		
Impeller type	Radial, closed, multi-channel	Casing wear ring design discharge-side	Casing wear ring flat
Free passage	22,4 mm		
Support foot	No	Installation chamber Casing cover	Conical (A-type cover)
		Bearing bracket size / shaft unit	35
		Pump directive	CE

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Nozzle connections pump

Nominal diameter Suction nozzle	DN 150	Nominal diameter Discharge nozzle	DN 125
Nominal pressure Suction nozzle	PN 16	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

1M Pressure gauge	Without	5B Venting and drain	G 1/4 Drilled and plugged
Discharge nozzle	Without		
1M Pressure gauge Suction nozzle	Without Without		
6B Fluid Drain	G 1/2 Drilled and plugged		
6D Fluid Filling and venting	G 1/2 Drilled and plugged		

Shaft sealing

Shaft seal type	Single mechanical seal; seal chamber can be vented (A-type casing cover) - AV	Shaft seal code	Code 11
		Shaft seal manufacturer inboard	KSB's choice
Operating mode of mechanical seal (function)	API plan 03	Mechanical seal type inboard	KSB's choice
Determined pressure Seal chamber	-0,17 bar.r	Material Shaft seal inboard	BQEGG DW001

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Materials

Material Volute casing (102)	EN-GJL-250/A48 CL 35B
Material Casing cover (161)	EN-GJL-250/A48 CL 35B
Material Shaft	C45+N
Material Impeller (230)	EN-GJL-250/A48 CL 35B
Material Casing wear ring suction-side (502.01)	JL/LAMELLAR GRAPHITE CAST IRON
Material Casing wear ring discharge-side (502.02)	JL/LAMELLAR GRAPHITE CAST IRON
Material Shaft protecting sleeve (523)	(CRNIMO ST INT)
Material Static seal Discharge cover	DPAF DW001
Material Drive lantern	EN-GJL-250/A48 CL 35B
Material Bolts/Screws Volute casing (902.01)	8.8
Material Nut Impeller fastening (920.95)	(ST)

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Driver

Electric motor, asynchronous	Yes	Rated speed Motor	1.465 1/min
Drive concept	Electric actuator	Number of motor poles	4
Drive standard, mechanical	IEC	Rated power Motor	18,5 kW
Drive standard electric	IEC	Motor power reserve determined	37,7 %
Motor bearing, insulated	No		
Motor manufacturer	KSB's choice	Rated voltage Motor	400 V
Customer supply Drive	No	Motor winding	400 / 690 V
Motor construction type	IM V15 (IM2011) IEC 60034-7	Rated frequency Motor	50Hz
Motor size	180M	Motor switching type	Delta
Efficiency class	IE3 (Premium)	Rated current Motor	35 A
Material motor housing	AL	Starting current ratio Ia/In	7,2
Enclosure Motor	IP55 (TEFC)	Cos phi at 4/4 load	0,82
Thermal class	155 (F) according to IEC 60085	Motor efficiency at 4/4 load	92,6 %
		Limit value Maximum humidity Motor	30 g/m³
Temperature sensor motor	3 PTC thermistors		
Terminal box position of motor (looking at the motor shaft)	360 °	Marking according to directive Drive	CE
Motor housing feet position (looking at the motor shaft)	180° (below)	The values indicated are regarded as guaranteed values. They are applied to motors with a sinusoidal power supply within the permissible tolerances specified by IEC 60034-1. The values given on the name plate may be different.	
Operation on a frequency inverter permitted	Yes (acc to motor manufact)		
Earth connector motor housing	No		
Sound pressure level Motor	66 dBa		
Type series Motor manufacturer	Acc. to motor manufacturer (IEC, IE3)		

Coating

Aggregate

Primary coating code	A1 to AN1897
Surface preparation	Free from dirt, grease, rust
Properties Primer coat	Hydro dip primer, water-dilutable
Thickness Primer coat	60 µm
Properties Top coat	Acrylate dispersion water-thinned
Thickness Top coat	40 µm
Colour Top coat	RAL5002 Ultramarine Blue
Colour Top coat Drive	RAL5002 Ultramarine Blue

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Energy cost and Environmental Impact

Result

Estimated Product Carbon Footprint (cradle-to-gate) (CO2eq) 1.449 kg
*

* based on product weight and assuming typical material proportions. The conversion rate between product weight and CO2 emissions is based onseve ral life cycle analyses in acc. with ISO 14040 / 44 of sampleproducts fr om the same series. The objective and scope of these LCAs waslimited to the manufacturing phase (cradle-to-gate). With regard toinputs, all mate rials, energy and auxiliary materials were taken intoaccount; with regar d to outputs, emissions, scrap and waste wereconsidered. The influence o f outgoing logistics is not covered. Theinput variables of the analyses cover at least 95% of the total weight.The analysis focuses on the globa l warming potential (EF3.0 ClimateChange – total).

Packaging

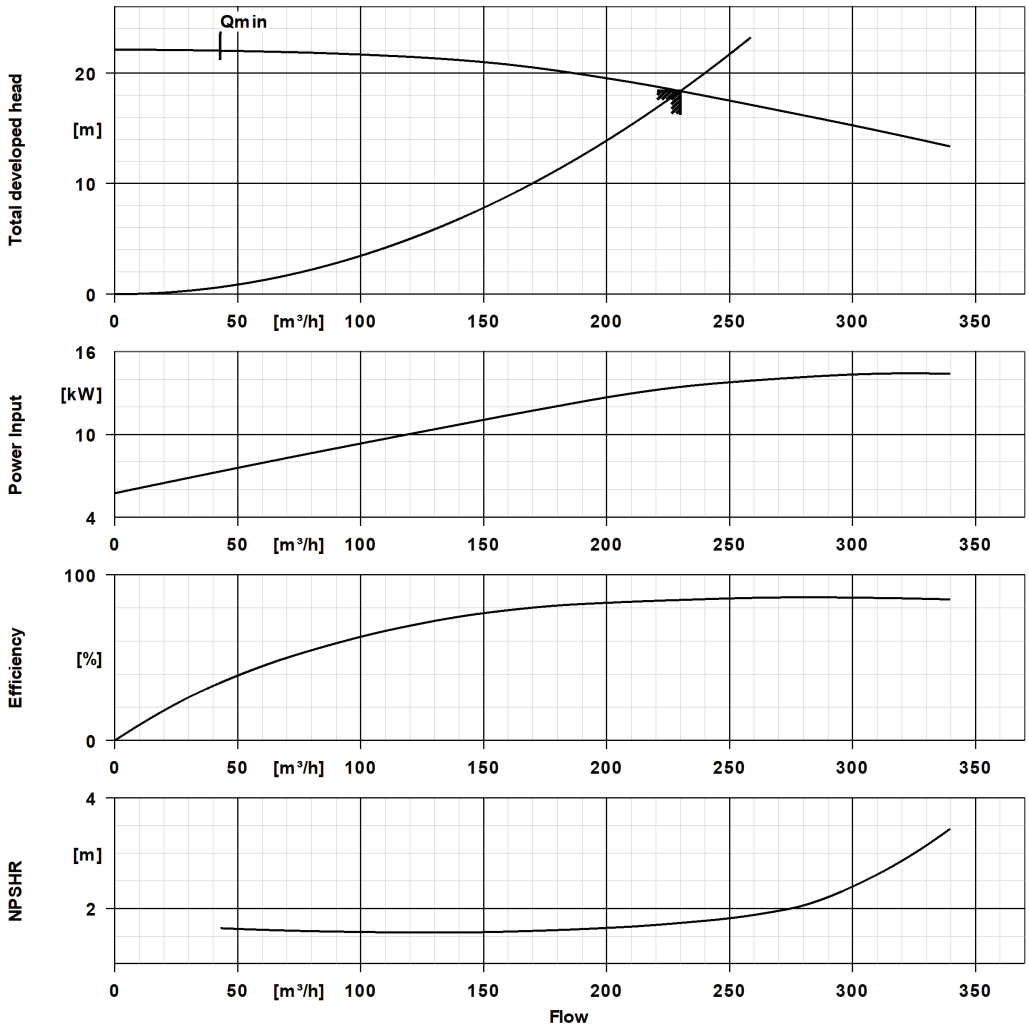
Suitable for transport	Truck transport
Suitable for storage	Indoor storage
Packaging category	KSB's choice (A0)

Product properties

Specification of wetted parts	Manufactured without paint wetting impairment substances

Performance Curve (Pump)

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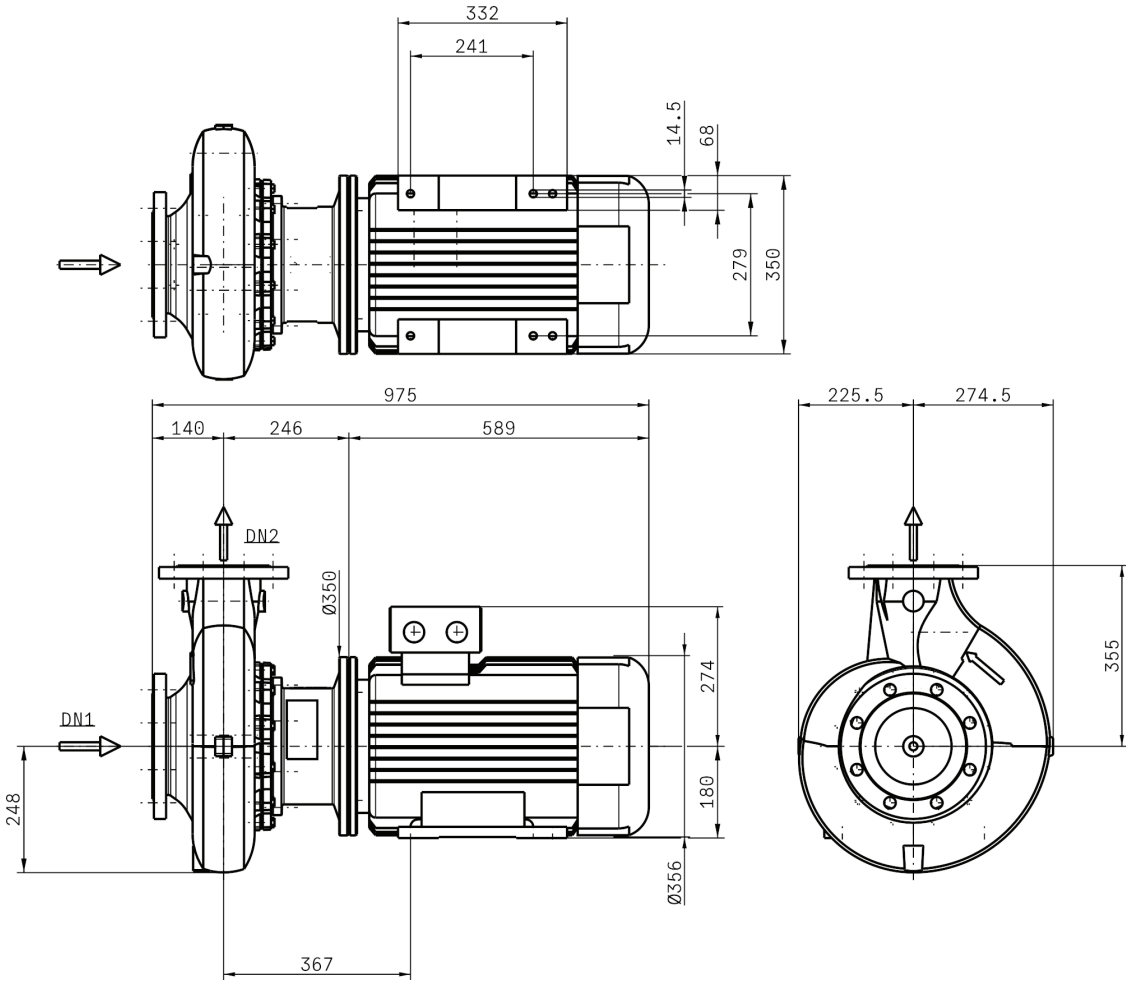


Curve Data

Pump speed	1.475 1/min	Maximum permissible flow rate	340 m³/h
Density Fluid handled	990 kg/m³	Efficiency Pump	84,8 %
Kinematic viscosity Fluid handled	0,609 mm²/s	Minimum efficiency index MEI	0,7
Flow rate	230 m³/h	Maximum power input at duty point	13,4 kW
Head	18,4 m	NPSH required	1,74 m
Maximum pressure determined at duty point	1,78 bar.r	Hydraulic impeller diameter	252,2 mm
		Hydraulic values according to	EN ISO 9906 Class 3B

Installation plan

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Installation plan

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Drawing is not to scale.

Dimensions are given in mm

Motor

Motor manufacturer	KSB's choice
Motor size	180M
Rated power Motor	18,5 kW
Number of motor poles	4
Rated speed Motor	1.465 1/min
Terminal box position of motor (looking at the motor shaft)	360 °
Motor housing feet position (looking at the motor shaft)	180° (below)

Connections

Nominal diameter Suction nozzle	DN 150
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 125
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16

Net weight

Total weight Pump	111,9 kg
Total weight Drive	159 kg
Total weight Pump set	270,9 kg

Connect pipelines stress-free

Plan for additional connections see extra drawing

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