Technical Datasheet

Etabloc 040-025-200 GG
ETB 040-025-200-GGSBV10 WSECM2HHB

Operating point 1 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	4 m³/h	Vapour pressure determined	0,02337 bar.a
Target head	58 m	Minimum inlet pressure required	-0,3 bar.r
Fluid	Water		
Fluid variant	Clean water	Specified ambient temperature	20 °C
Specified fluid temperature	20 °C	Installation altitude above sea level	1.000 m
Density Fluid handled	998 kg/m³		
Kinematic viscosity Fluid handled	1 mm²/s		

Operating conditions (performance)

Flow rate	4,001 m³/h	Maximum power input at duty point	2,783 kW
Minimum permissible flow rate	1,285 m³/h	Maximum power input / curve	3,639 kW
Maximum permissible flow rate	9,055 m³/h	Pump speed	2.935 1/min
Pump set		Shut-off pressure	5,794 bar.r
Maximum permissible flow rate	9,055 m³/h		
Head	58,02 m		
Maximum pressure determined at duty point	5,678 bar.r		
Shut-off head	59,2 m		
Efficiency Pump	22,67 %		
NPSH required	2,74 m		

Design data pump

Scope of supply Pump supplied by KSB	Pump + motor	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	Maximum permissible fluid temperature	60 °C
Pump direction of rotation, viewed from casing side	Counterclockwise	Quantity Stages, single-entry	1
Hydraulic impeller diameter	207,2 mm	Casing wear ring design suction-side	Casing wear ring flat
Impeller type	Radial, closed, multi-channel	Casing wear ring design discharge-side	Casing wear ring flat
Free passage	5,7 mm	Installation chamber Casing cover	Conical (A-type cover)
Support foot	Yes	Bearing bracket size / shaft unit	25
		Pump directive	CE

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Nozzle connections pump

Nominal diameter Suction nozzle	DN 40	Nominal diameter Discharge nozzle	DN 25
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 Discharge nozzle	Without Without	5B Venting and drain	G 1/4 Drilled and plugged
1M Pressure gauge Suction nozzle	Without Without		
6B Fluid Drain	G 1/4 Drilled and plugged		
6D Fluid Filling and venting	G 1/4 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 10
		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	0,04 bar.r	Material Shaft seal inboard	QQXGG

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Materials

Material Volute casing (102)	EN-GJL-250/A48 CL 35B	Material Bolts/Screws Volute casing (902.01)	8.8
Material Casing cover (161)	EN-GJL-250/A48 CL 35B	Material Nut Impeller fastening (920.95)	(ST)
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		

Driver

Electric motor, asynchronous	Yes	Rated speed Motor	2.900 1/min
Drive concept	Electric actuator	Number of motor poles	2
Drive standard, mechanical	IEC	Rated power Motor	4 kW
Drive standard electric	IEC	Motor power reserve determined	43,7 %
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 V1 (IM3011) IEC 60034-7	Rated frequency Motor	50Hz
Motor size	112M	Motor switching type	Delta
Efficiency class	IE3 (Premium)	Rated current Motor	8 A
Material motor housing	AL	Starting current ratio Ia/In	8,6
Enclosure Motor	IP55 (TEFC)	Cos phi at 4/4 load	0,81
Thermal class	155 (F) according to IEC 60085	Motor efficiency at 4/4 load	88,1 %
		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
Operation on a frequency inverter permitted	Yes (acc to motor manufact)		
Earthing connection 31M Drive	No		
Sound pressure level Motor	72 dBa		
Type series Motor manufacturer	Acc. to motor manufacturer (IEC, IE3)		

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.

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Coating

Aggregate

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

Energy cost and Environmental Impact

Result

Estimated Product Carbon Footprint (cradle-to-gate) (CO2eq) *	402 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

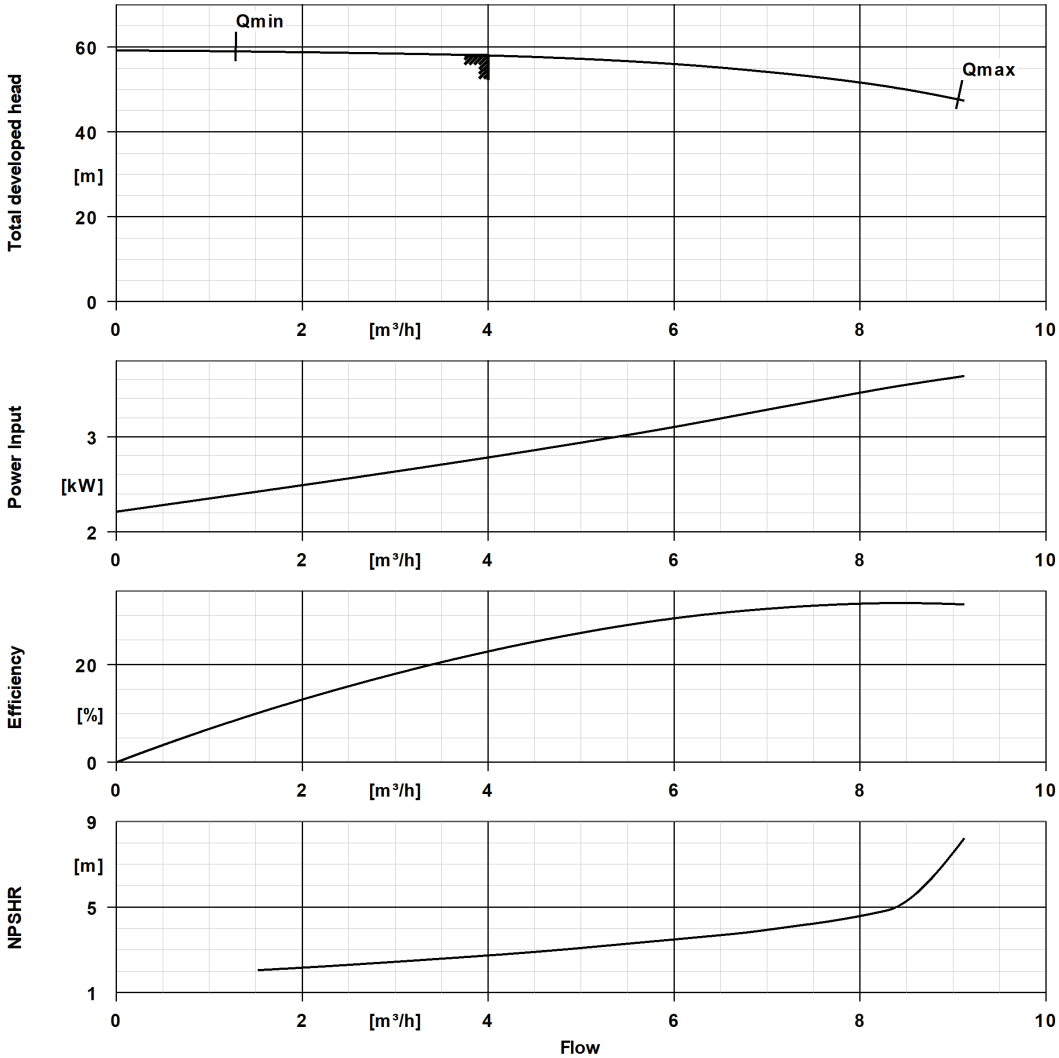
Suitable for transport	Truck transport
Suitable for storage	Indoor storage
Packaging category	KSB's choice (A0)

Order related documents

Detail drawing Mechanical seal	No

Performance Curve (Pump)

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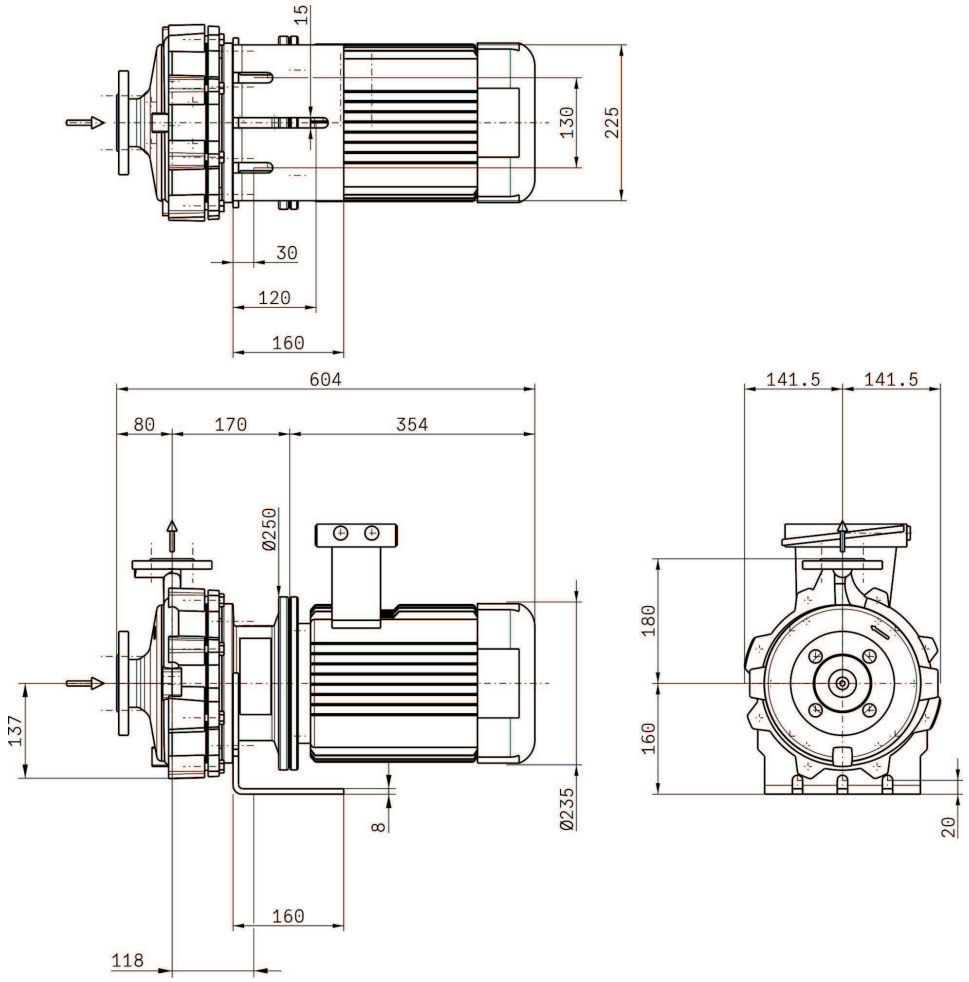


Curve Data

Pump speed	2.935 1/min	Efficiency Pump	22,7 %
Density Fluid handled	998 kg/m³	Minimum efficiency index MEI	0,7
Kinematic viscosity Fluid handled	1 mm²/s	Maximum power input at duty point	2,78 kW
Flow rate	4 m³/h	NPSH required	2,74 m
Maximum permissible flow rate	9,06 m³/h	Hydraulic impeller diameter	207,2 mm
Head	58 m	Hydraulic values according to	EN ISO 9906 Class 3B
Maximum pressure determined at duty point	5,68 bar.r		

Installation plan

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Drawing is not to scale.

Dimensions are given in mm

Motor

Motor manufacturer	KSB's choice
Motor size	112M
Rated power Motor	4 kW
Number of motor poles	2
Rated speed Motor	2.900 1/min
Terminal box position of motor (looking at the motor shaft)	360 °

Connections

Nominal diameter Suction nozzle	DN 40
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 25
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16

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Net weight

Total weight Pump	37,93 kg
Total weight Drive	40 kg
Total weight Pump set	77,93 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