Technical Datasheet

Etabloc 080-065-125 GG
ETB 080-065-125-GGSBV11 WSEDY4HHB

Operating point 2 Dimensioning operating point

Operating conditions (purchaser requirements)

Target flow rate	119.66 m³/h	Vapour pressure determined	0.02337 bar.a
Target head	20.02 m	Minimum inlet pressure required	-0.3 bar.r
Fluid	Water, heating water		
Fluid variant	Heating water up to 100°C (max.), acc. to VDI 2035	Specified ambient temperature	20 °C
		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	119.72 m³/h	Maximum power input at duty point	7.953 kW
Minimum permissible flow rate	17.05 m³/h		
Head	20.04 m	Maximum power input / curve	8.532 kW
Shut-off head	24.47 m	Pump speed	3,000 1/min
Efficiency Pump	81.98 %	Discharge pressure-max.	2.395 bar.r
NPSH required	3.71 m		

Operating point 1

Operating conditions (purchaser requirements)

Target flow rate	119.66 m³/h	Vapour pressure determined	0.02337 bar.a
Target mass flow rate	33.17 kg/s	Minimum inlet pressure required	-0.3 bar.r
Target head	17.41 m		
Fluid	Water, heating water		
Fluid variant	Heating water up to 100°C (max.), acc. to VDI 2035	Specified ambient temperature	20 °C
		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	119.66 m³/h	Maximum power input at duty point	6.961 kW
Minimum permissible flow rate	16.21 m³/h		
Head	17.41 m	Maximum power input / curve	7.334 kW
Shut-off head	22.13 m	Pump speed	2,852 1/min
Efficiency Pump	81.37 %	Discharge pressure-max.	2.165 bar.r
NPSH required	3.53 m		

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Operating point 3

Operating conditions (purchaser requirements)

Target flow rate	136.71 m³/h
Target mass flow rate	37.9 kg/s
Target head	22.5 m
Fluid	Water, heating water
Fluid variant	Heating water up to 100°C (max.), acc. to VDI 2035
Specified fluid temperature	20 °C
Density Fluid handled	998 kg/m³
Kinematic viscosity Fluid handled	1 mm²/s
Vapour pressure determined	0.02337 bar.a
Minimum inlet pressure required	-0.3 bar.r
Specified ambient temperature	20 °C
Installation altitude above sea level	1,000 m

Operating conditions (performance)

Flow rate	136.71 m³/h
Minimum permissible flow rate	18.46 m³/h
Head	22.5 m
Shut-off head	28.68 m
Efficiency Pump	81.32 %
NPSH required	4.46 m
Maximum power input at duty point	10.29 kW
Maximum power input / curve	10.82 kW
Pump speed	3,248 1/min
Discharge pressure-max.	2.807 bar.r

Design data pump

Scope of supply Pump supplied by KSB	Pump + motor
Pump standard	EN 733
Shaft axis position	Horizontal
Pump design	Close-coupled
Pump system design	Single-pump system
Pump direction of rotation, viewed from casing side	Counterclockwise
Hydraulic impeller diameter	136.9 mm
Impeller type	Radial, closed, multi-channel
Free passage	12.9 mm
Support foot	No
Mains voltage	400 V
Mains frequency	50 Hz
Minimum efficiency index MEI	0.7
Minimum permissible fluid temperature	0 °C
Maximum permissible fluid temperature	110 °C
Quantity Stages, single-entry	1
Casing wear ring design suction-side	Flat
Casing wear ring design discharge-side	Flat
Installation chamber Casing cover	Conical (A-type cover)
Bearing bracket size / shaft unit	25
Pump directive	CE

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Nozzle connections pump

Nominal diameter Suction nozzle	DN 80	Nominal diameter Discharge nozzle	DN 65
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

6B Fluid Drain	G 3/8 Drilled and plugged	1M Pressure gauge Discharge nozzle	Without Without
6D Fluid Filling and venting	G 3/8 Drilled and plugged	1M Pressure gauge Suction nozzle	Without Without
5B Venting and drain	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 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	-0.16 bar.r	Material Shaft seal inboard	BQEGG DW001

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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		

Power Drive System

Drive concept	Electric actuator	Rated speed Motor	3,000 1/min
Drive standard, mechanical	IEC	Number of motor poles	4
Drive standard electric	IEC	Rated power Motor	11 kW
Motor manufacturer	KSB	Motor power reserve determined	6.94 %
Motor construction type	IM V15 (IM2011) IEC 60034-7	Rated voltage Motor	400 V
Motor size	160M	Motor winding	- / 400 V
Efficiency class	IE5 (Ultra Premium)	Rated frequency Motor	100Hz
Material motor housing	AL	Motor switching type	Star
Enclosure Motor	IP55 (TEFC)	Maximum current Unit	0 A
Thermal class	155 (F) according to IEC 60085	Rated current Motor	23.7 A
Temperature sensor motor	3 PTC thermistors	Cos phi at 4/4 load	0.77
Terminal box position of motor (looking at the motor shaft)	360 °	Motor efficiency at 4/4 load	92.9 %
Operation on a frequency inverter permitted	Required by design	Marking according to directive Drive	CE
Sound pressure level Motor	71 dBa		
Type series Motor manufacturer	SuPremE C1		

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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

Energy cost and Environmental Impact

Result

Estimated Product Carbon Footprint (cradle-to-gate) (CO_2eq) 619 kg
*

This PCF indication is based on the product mass assuming the typicalsha res of materials in use. The conversion rate between product mass andCO_2 emissions is based on several life cycle assessments acc. to ISO14040 / 14044 of sample products of the same type series. Objective andscope of these LCAs was defined as being limited to the manufacturingphase (crad le-to-gate). With regard to inputs, all materials, energy andauxiliary m aterials were accounted for, and with regard to outputs,emissions, scrap and waste were accounted for. The impact of outboundlogistics is not co vered. The assessments' input variables cover atleast 95 % of the total product mass. The analysis focuses exclusivelyon the Global Warming Pote ntial (EF3.0 Climate Change – total).

Packaging

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

Performance Curve (Pump)

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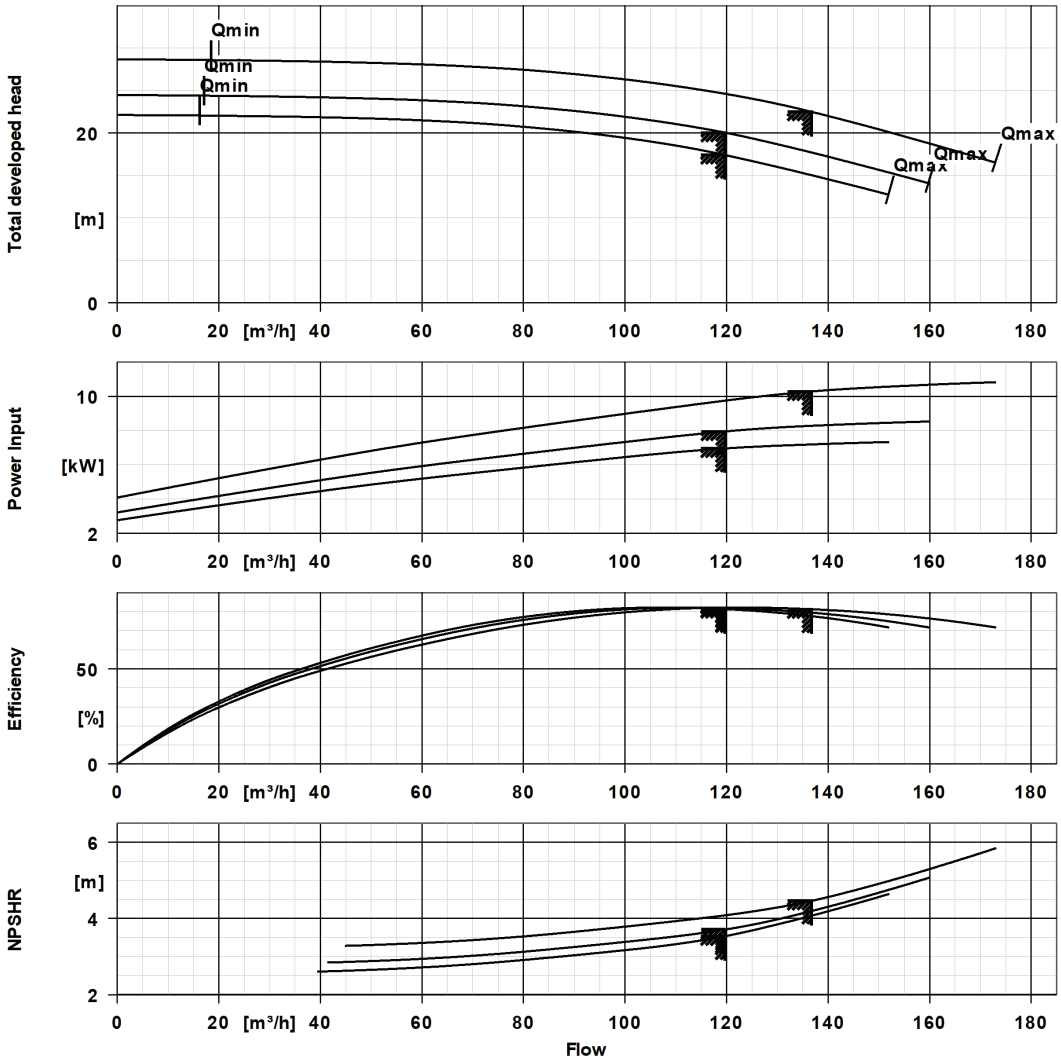

Curve Data

Pump speed	3,000 1/min	Efficiency Pump	82 %
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	10.3 kW
Flow rate	120 m³/h	NPSH required	3.71 m
Head	20 m	Hydraulic impeller diameter	136.9 mm
		Hydraulic calculation according to standard/ class	EN ISO 9906 Class 3B

Speed Curve

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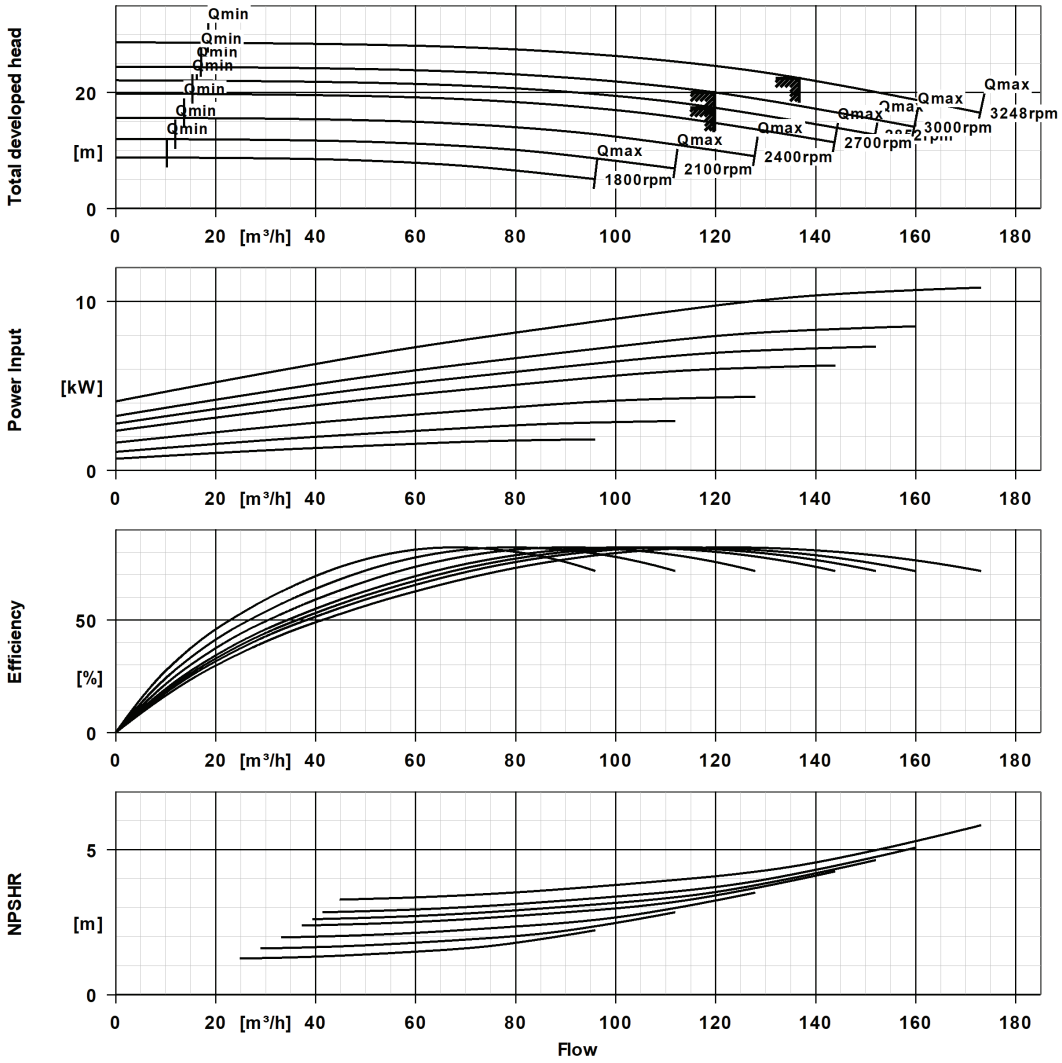

Curve Data

Density Fluid handled	998 kg/m³	Minimum efficiency index MEI	0.7
Kinematic viscosity Fluid handled	1 mm²/s	Hydraulic impeller diameter	136.9 mm
Flow rate	119.72 m³/h	Head	20.04 m

Installation plan

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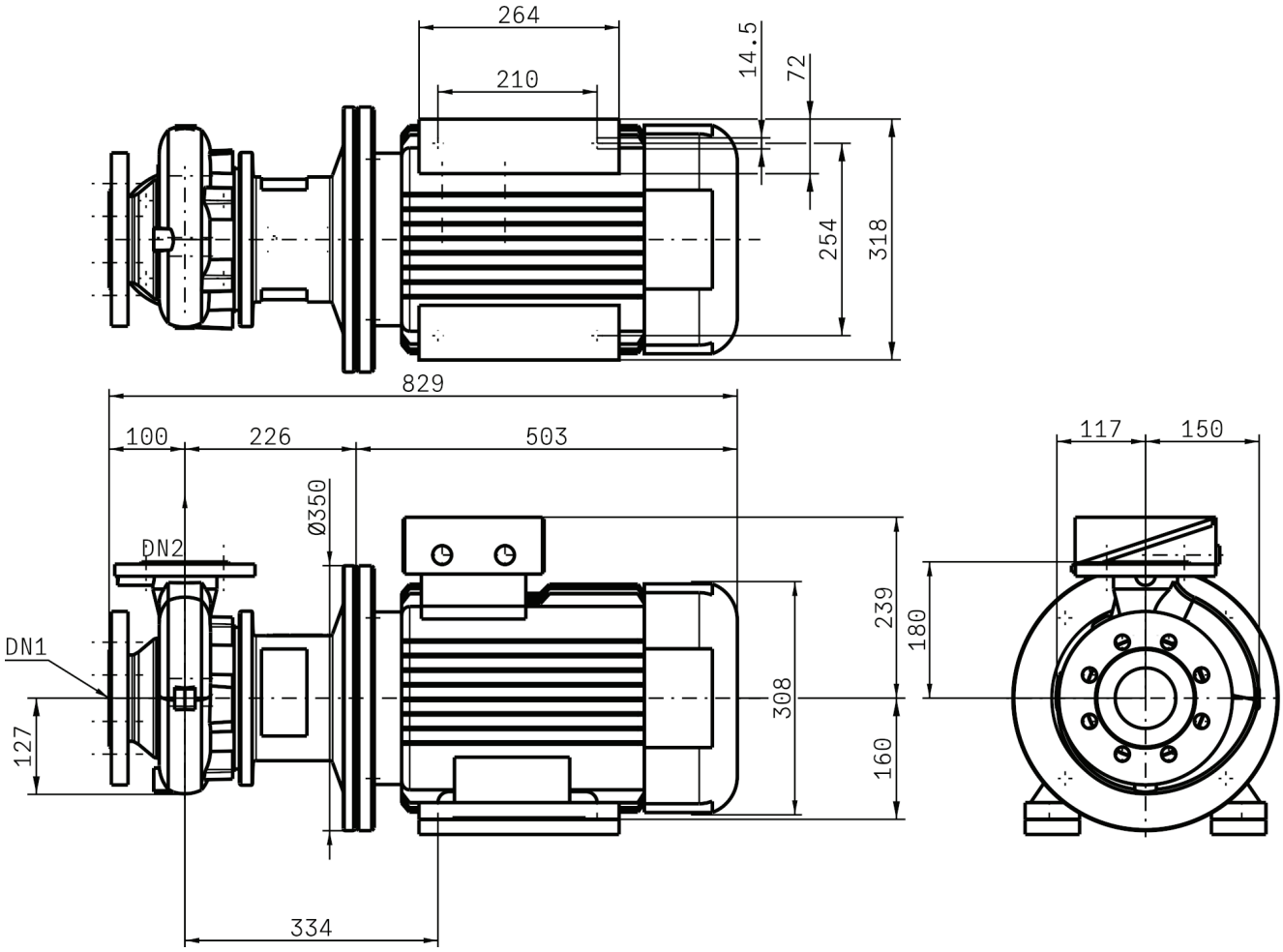

Drawing is not to scale.

Dimensions are given in mm

Motor

Electric motor	No
Rated power Motor	11 kW
Rated speed Motor	3,000 1/min

Connections

Nominal diameter Suction nozzle	DN 80
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 65
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16

Installation plan

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Net weight

Total weight Pump	44.29 kg
Total weight Drive	70 kg
Total weight Pump set	114.3 kg
Total weight Assembly/transport aids	3.4 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

Auxiliary Connection Plan

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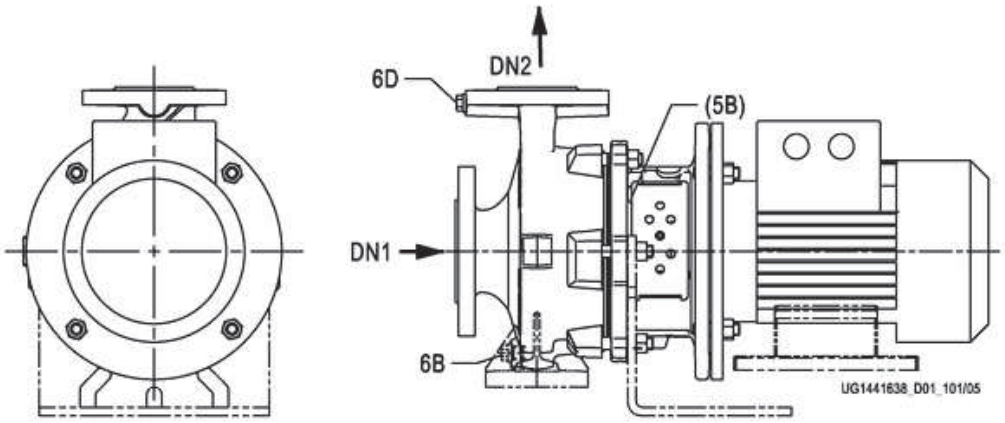

Connections

6B Fluid Drain	G 3/8	Drilled and plugged
6D Fluid Filling and venting	G 3/8	Drilled and plugged
5B Venting and drain	G 1/4	Drilled and plugged