



Etabloc 100-080-160 GG

ETB 100-080-160-GGSBV11 WSEBI4HCB

Operating point 1

Dimensioning operating point

Operating conditions (purchaser requirements)

Fluid	Water, heating water
Fluid variant	Heating water up to 100°C (max.), acc. to VDI 2035
Specified fluid temperature	70 °C
Density Fluid handled	977,9 kg/m³
Kinematic viscosity Fluid handled	0,4197 mm²/s

Vapour pressure determined	-0,686602 bar.r
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	94,25 m³/h
Minimum permissible flow rate	14,31 m³/h
Maximum permissible flow rate	117,16 m³/h
Pump set	
Maximum permissible flow rate	117,16 m³/h
Head	4,057 m
Maximum pressure determined at duty point	0,389011 bar.r
Shut-off head	5,8 m
Efficiency Pump	75,09 %
NPSH required	2,48 m

Maximum power input at duty point	1,357 kW
Maximum power input / curve	1,358 kW
Pump speed	1.412 1/min
Shut-off pressure	0,556184 bar.r

Design data pump

Scope of supply Pump supplied by KSB	Pump + motor	Input voltage and frequency	Without
Pump standard	EN 733	Mains voltage	400 V
Shaft axis position	Horizontal	Mains frequency	50 Hz
Pump design	Close-coupled	Minimum efficiency index MEI	0,7
Pump system design	Single-pump system	Minimum permissible fluid temperature	0 °C
Specification of wetted parts	Manufactured without paint wetting impairment substances	Maximum permissible fluid temperature	110 °C
Pump direction of rotation, viewed from casing side	Counterclockwise	Quantity Stages, single-entry	1
Hydraulic impeller diameter	138 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	15,1 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 100	Nominal diameter Discharge nozzle	DN 80
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	G 3/8	5B Venting and drain	G 1/4
Discharge nozzle	Pressure sensor		Drilled and plugged
1M Pressure gauge Suction nozzle	G 3/8		
	Pressure sensor		
6B Fluid Drain	G 3/8		
	Drilled and plugged		
6D Fluid Filling and venting	G 3/8		
	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	-0,27 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

Electric motor, synchronous	Yes	Rated speed Motor	1.500 1/min
Drive concept	Electric actuator	Number of motor poles	4
Drive standard, mechanical	IEC	Rated power Motor	1,5 kW
Drive standard electric	IEC	Motor power reserve determined	10,5 %
Motor manufacturer	KSB	Rated voltage Motor	400 V
Motor construction type	IM V1 (IM3011) IEC 60034-7	Motor winding	- / 400 V
Motor size	90L	Rated frequency Motor	50Hz
Efficiency class	IE4 (Super Premium)	Motor switching type	Star
Material motor housing	AL	Maximum current Unit	0 A
Enclosure Motor	IP55 (TEFC)	Rated current Motor	4 A
Thermal class	155 (F) according to IEC 60085	Starting current ratio Ia/In	1,1
Temperature sensor motor	3 PTC thermistors	Cos phi at 4/4 load	0,67
Terminal box position of motor (looking at the motor shaft)	360 °	Motor efficiency at 4/4 load	88,2 %
Operation on a frequency inverter permitted	Required by design	Marking according to directive Drive	CE
Earth connector motor housing	No		
Sound pressure level Motor	60 dBa		
Type series Motor manufacturer	SuPremE D2		



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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

Energy cost and Environmental Impact

Result

Estimated Product Carbon Footprint (cradle-to-gate) (CO₂eq) 362 kg

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* based on product weight and 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 inputs, all materials, energy and auxiliary materials were taken into account; with regard to 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 focuses on the global 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
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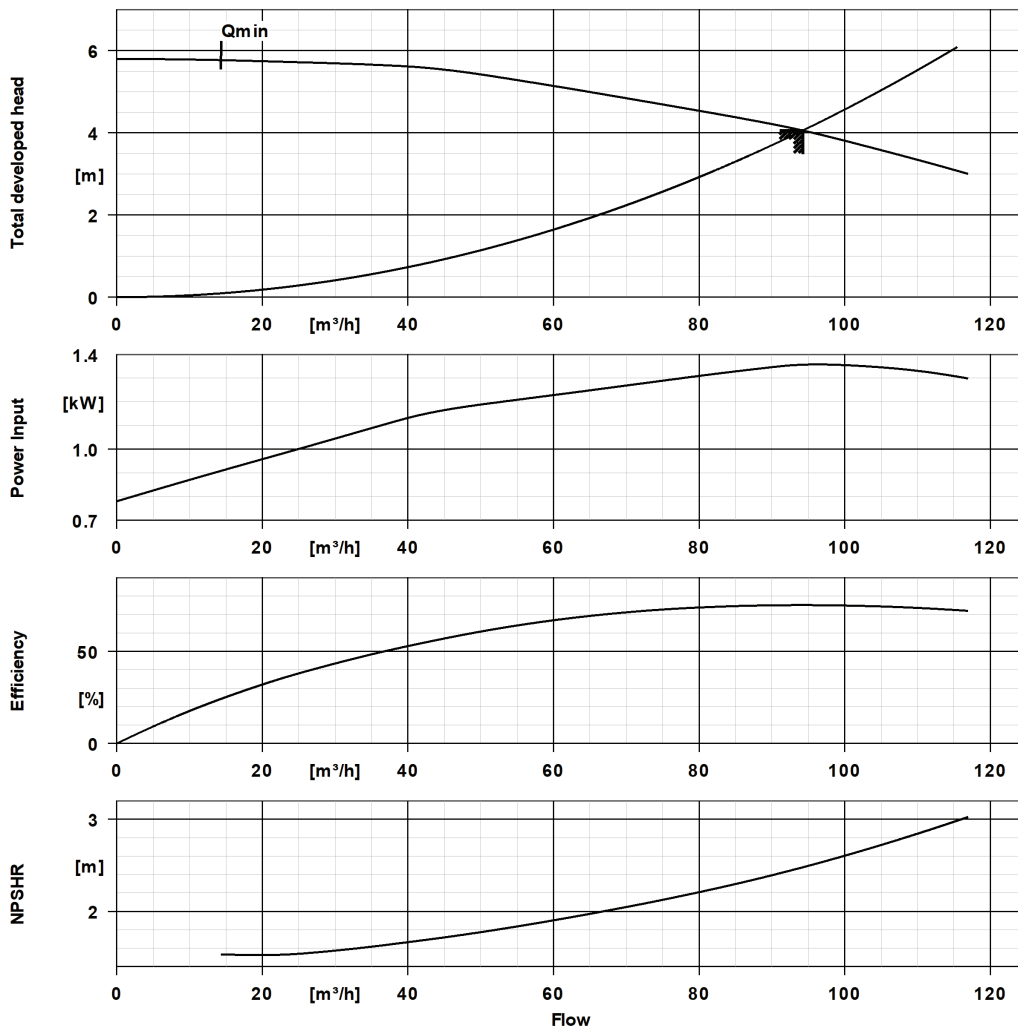
Performance Curve (Pump)



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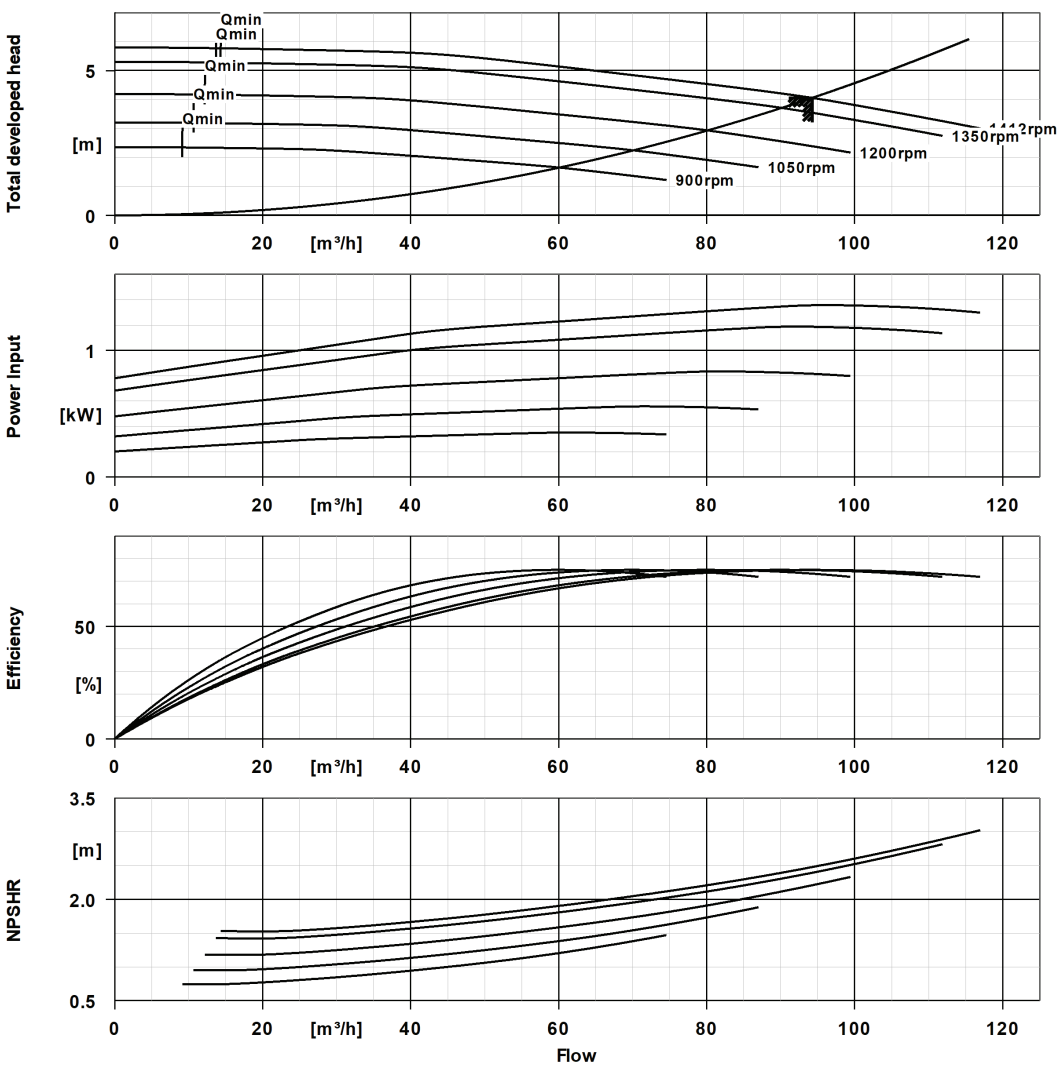
Curve Data

Pump speed	1.412 1/min	Maximum permissible flow rate	117 m^3/h
Density Fluid handled	978 kg/m^3	Efficiency Pump	75,1 %
Kinematic viscosity Fluid handled	0,42 mm^2/s	Minimum efficiency index MEI	0,7
Flow rate	94,3 m^3/h	Maximum power input at duty point	1,36 kW
Head	4,06 m	NPSH required	2,48 m
Maximum pressure determined at duty point	0,39 bar.r	Hydraulic impeller diameter	138 mm
		Hydraulic values according to	EN ISO 9906
			Class 3B

Speed Curve



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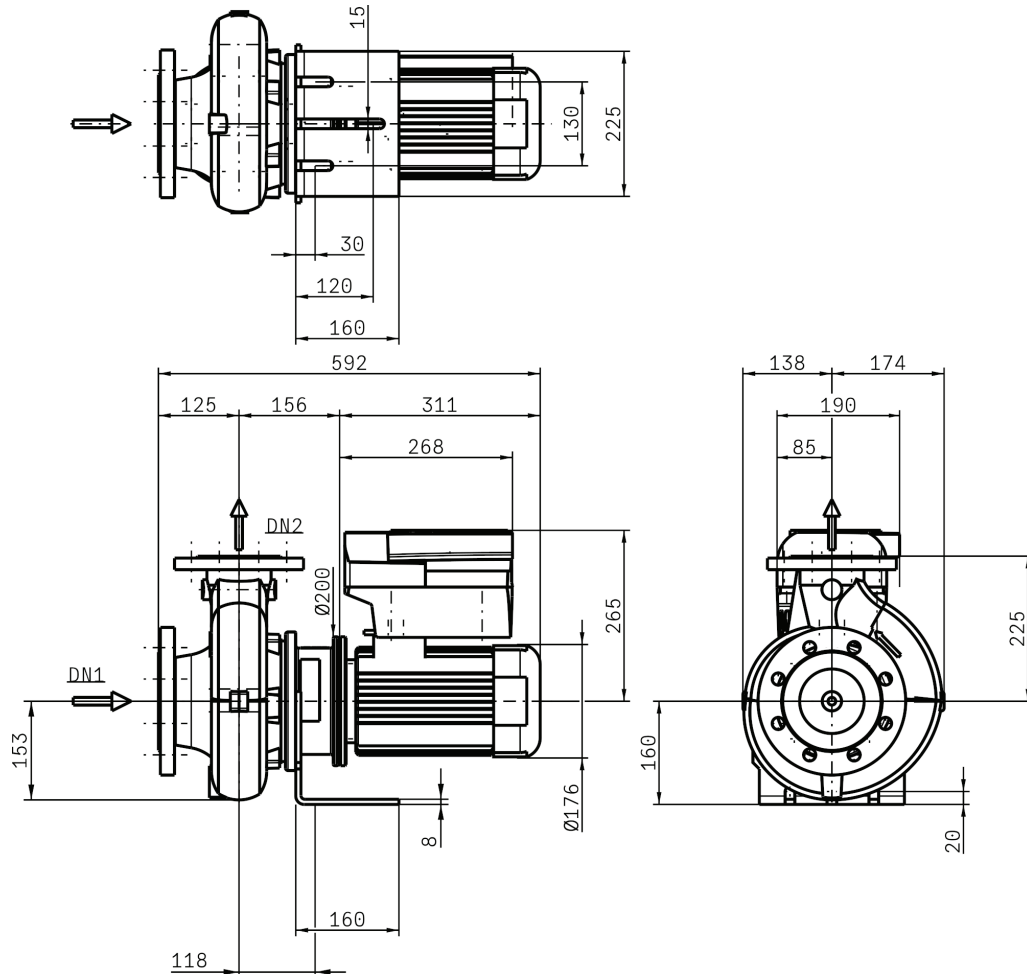


Curve Data

Density Fluid handled	978 kg/m³	Head	4,06 m
Kinematic viscosity Fluid handled	0,42 mm²/s	Minimum efficiency index MEI	0,7
Flow rate	94,3 m³/h	Hydraulic impeller diameter	138 mm

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Drawing is not to scale.

Dimensions are given in mm

Motor

Motor manufacturer	KSB
Motor size	90L
Rated power Motor	1,5 kW
Number of motor poles	4
Rated speed Motor	1.500 1/min
Terminal box position of motor (looking at the motor shaft)	360 °

Connections

Nominal diameter Suction nozzle	DN 100
Suction flange bolt hole pattern as per standard	EN1092-2
Nominal diameter Discharge nozzle	DN 80
Discharge flange bolt hole pattern as per standard	EN1092-2
Nominal pressure Suction nozzle	PN 16
Nominal pressure Discharge nozzle	PN 16

Net weight

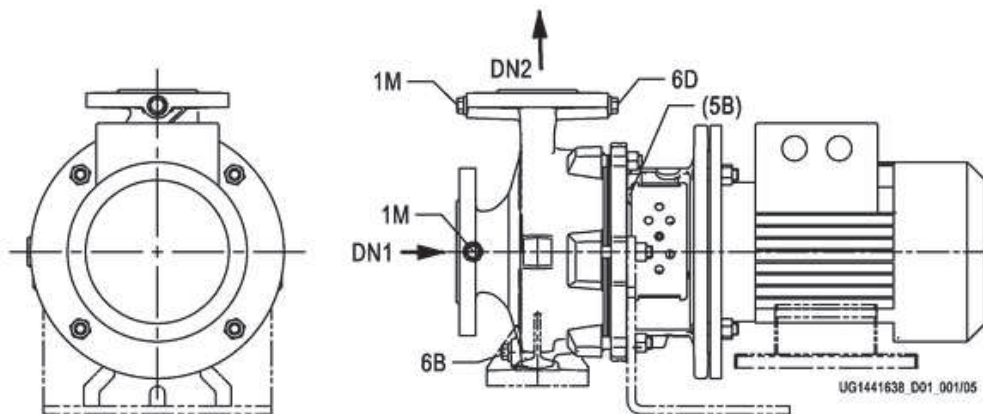
Total weight Pump	45,68 kg
Total weight Drive	18 kg
Total weight Pump set	76,48 kg

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

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Connections

1M Pressure gauge Discharge nozzle
1M Pressure gauge Suction nozzle
6B Fluid Drain
6D Fluid Filling and venting
5B Venting and drain

G 3/8
G 3/8
G 3/8
G 3/8
G 1/4

Pressure sensor
Pressure sensor
Drilled and plugged
Drilled and plugged
Drilled and plugged